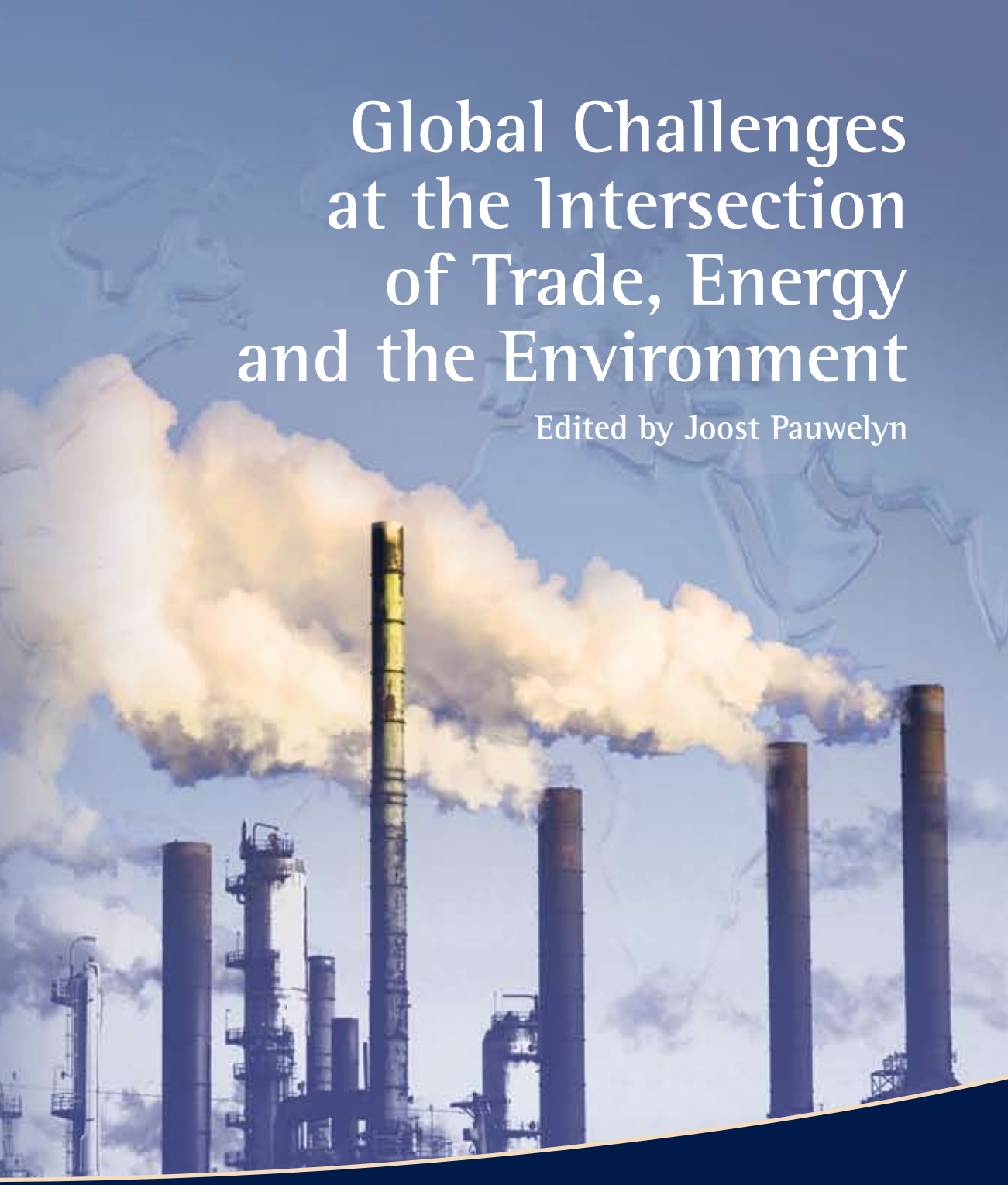
Global Challenges at the Intersection of Trade, Energy and the Environment

Edited by Joost Pauwelyn



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Centre for Trade and Economic Integration

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Global Challenges at the Intersection of Trade, Energy and the Environment: An Introduction

Joost Pauwelyn[1]

1 The challenge

This book brings together presentations and discussions at the intersection of trade, energy and the environment. Substantively, as H.E. Sheikha Lubna put it, the 'central inquiry' is: 'how can we increase economic well-being and expand trade, while promoting the optimal use of the world's energy resources and protecting and preserving our shared environment?' The challenge is daunting and complex. This volume addresses only part of it, namely: the *international* or *cross-border* problems that arise at the triangle of trade, energy and the environment, the current international regulatory framework and how this framework could be improved. Institutionally, as WTO Director-General Pascal Lamy phrased it, the 'core question' is 'whether we need a new, more comprehensive global governance in energy' and if so, 'what the form and content of such governance should be and in what institutional setting' and 'what would be the WTO role in this new energy governance? … should the WTO adapt its existing rules or define specific rules to energy?'

2 The need for a holistic approach

The ambition of this book, and the conference that led to it, was not to resolve these core substantive and institutional challenges. Rather, the immediate goal was to unpack the interactions, to identify priority concerns and to provide a first attempt of developing a framework to think about possible solutions. Given the complexity of the matter, we considered it essential to look at the trade-energy-environment triangle from a multi-disciplinary perspective (especially law, economics and politics) and to involve not only academia and policy makers in each of the three fields, but also the private sector. This is not an issue that will be resolved vertically, silo-type within a single international organisation, discipline or ivory tower. It needs a horizontal approach of, first, fact-gathering (beyond what Steenblik refers to as 'guestimates'), second, analysis and critical assessment and, third, where necessary, policy enactment and coherence in different fora and at different levels. In this three-step process, private stakeholders are crucial both to identify genuine concerns and to

1 Professor, Graduate Institute of International and Development Studies, Geneva, and Director, Centre for Trade and Economic Integration.

implement possible solutions (Crosby). This is not a challenge that can be solved by politicians alone. Markets and private initiative will be crucial to find and implement cost-effective solutions and technologies (such as the 'carbon trading' discussed by Bossley or the much-needed capital investments referred to by Jensen, Senanu and Wang). Conversely, however, market forces alone cannot meet the challenge. At its core are serious market imperfections and externalities whose correction needs political will, across national borders, be it a global climate change deal (discussed in Kleymeyer), production, transit and supply arrangements (discussed in Worika, Rakhmanin and Jensen) or liberalisation of trade in environmental goods and services (Burns). This much needed holistic approach is why the conference and this book were not organised around institutions (e.g. WTO v. ECT) or agreements (e.g. GATT v. GATS v. Kyoto) but clustered around particular problems (such as gaps in the current regulatory regime, Part I; or transport and transit, Part III) so as to focus on genuine solutions and to transcend the 'closed boxes' that lawyers and negotiators have too often enclosed themselves in.

3 Trade, energy and environmental protection as separate fields

Trade, energy and environmental protection are each in their own right hugely complicated. To enable us to think more clearly about how they interact, it is useful to strip cross-border controversies in each of these fields to their bare essentials. To start with trade, the WTO's core objective remains to open export markets and limit import restrictions or other domestic distortions such as subsidies. Within each country, the WTO pits export interests against import-competing industries with the goal of gradually liberalizing trade flows so as to achieve a more efficient allocation of the world's resources based on comparative advantage rather than governmental restrictions and interventions. The WTO aims at unleashing the benefits of the market place and competition and does so through negative prescriptions (such as, 'thou shalt not' impose import quotas, export subsidies or tariffs beyond agreed levels).

Cross-border problems around energy, in contrast, stem from the geographical concentration of where energy can be found (think of oil or gas) and the universal need for energy which each and every country needs for its economic development. The core issue with energy is, therefore, conservation and price and demand stability in energy-producing countries (as discussed in Worika and OPEC) versus access and security in energy supplies for countries in need of energy (a core European concern, discussed in Mizulin and Quick). Given that, on both sides, these concerns touch the very heart of a nation's sovereignty (over natural resources) or security (in terms of access to energy and dependence on foreign oil), cross-border cooperation and governance structures in the field of energy are much less developed than in the field of trade. Notable exceptions are the Energy Charter Treaty and bilateral investment treaties, although the latter only address the limited question of attracting and protecting foreign investment in, for our purposes, energy production (discussed in Herman). As Gault put it bluntly, 'when it comes to global governance on energy, it is like a Neanderthal just stepping into civilization'.

Cross-border, environmental protection, finally, can be situated somewhere in between the highly developed governance structure of the WTO (and preferential trade agreements) and the sovereignty-based approach to energy. Notwithstanding its young age, a host of environmental treaties have been enacted in the last thirty years. The core issue for present purposes is reaching a global deal on fighting climate change. At its core, the central tension in this respect is one of environmental justice, more specifically, allocating greenhouse gas (GHG) reduction targets across countries based on principles of fairness and equity including historical emissions and diverse levels of development. So far, the solution has not gone much beyond the recognition of 'common but differentiated responsibilities' and a grand post-Kyoto climate change bargain remains elusive especially after the failure at Copenhagen.

Crucially, in both energy and environment, the international cooperation required are of a very different nature than what we currently see in trade. Whereas trade and the WTO is focused on what Cossy refers to as 'don'ts', energy and environmental cooperation require positive steps or 'dos', be it investment or market liberalisation in energy production and infrastructure or agreement on transit tariffs and carbon emission cuts. This may at least partly explain why, of the three regimes, the trade regime has been most successful in the provision of, in the words of Petersmann, 'global public goods'.

4 The triangle of trade, energy and the environment

As if the tensions in each of these three fields considered individually are not yet sufficiently complex, when looking at the interaction between trade, energy and the environment new questions and problems arise. Yet, at the same time, these interactions may also provide the beginning of novel solutions.

4.1 Energy – trade (and environment)

Because few countries *have* energy and all countries *need* energy, trade in energy (especially oil) has been crucial to fulfil global energy needs. There is more trade internationally in oil than in anything else. This is true whether one measures trade by how much of a good is moved (volume), by its value, or by the carrying capacity needed to move it.[2] As Gault explains in his introduction, a conservative estimate puts energy trade at 20% of merchandise trade and 'fully half of world trade in services is intensely energy-dependent'. Yet, strangely enough, the GATT/WTO has historically not preoccupied itself with energy trade. As Marceau put it, GATT/WTO rules 'were not initially designed to address energy issues *per se*'. At the same time, this lack of interest can be explained relatively easily. As noted earlier, the trade system is focused on convincing countries to reduce import restrictions. When it comes to energy, however, import restrictions is not the issue (few countries impose import duties on oil). Rather, what matters is 'production management' and price stability (Worika) for energy *exporters*, and access to foreign supplies (or production, export

2 See *http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/oil_market_basics/trade_text.htm*

and transit restrictions) for energy *importers*. Consequently, in a GATT club worried about '*how can I export more*', the central energy question of '*how can I import more*' (or how can I maximise the return on my energy resources) was not addressed. This, in turn, explains why until recently few energy-producing countries saw a need to join the GATT/WTO. Saudi Arabia only recently joined and many energy-producing countries are still not WTO members (e.g. Russia, Kazakhstan, Azerbaijan, Algeria, Lybia, Iran, Irak and Sudan).

That the trade regime does more recently focus on energy and the two fields increasingly interact has several explanations. First, energy markets have, in many countries, been liberalised so that energy products are increasingly regarded and subject to standard trading or market rules (see Mizulin and Cossy). In this context, questions of transport, interconnection and transit have become crucial (see Cossy and Rakhmanin). Second, and here is a first bridge linking trade, energy and the environment, environmental imperatives, especially climate change concerns, have boosted the importance and economic feasibility of alternative energy (think of biofuels or solar and wind energy). These alternative energies raise more traditional trade questions which the WTO is good at, and used to tackle, such as high tariffs on ethanol and wind turbines (discussed in Kutas and Burns) or trade distorting subsidies to stimulate the production and use of renewable energy (Orava). Kutas explains, for example, that whereas oil is heavily traded only 10% of ethanol is traded and that notwithstanding the recent increase in demand for ethanol this share of 10% is not increasing, in part due to high import duties on ethanol in, especially, the EC and the United States.

Besides subsidies to renewable energy, environmental imperatives have joined forces with traditional trade concerns also when it comes to subsidies to fossil fuels or dual pricing of energy. Steenblik finds that 'total transfers favouring fossil fuels … may range between US$ 500 billion and US$ 700 billion per annum' and that, for example, 'Russia's internal consumption of natural gas is subsidised at a rate of US$ 25 billion a year'. He also refers to a recent study by the OECD which suggests that a multilateral removal of consumption subsidies alone would lower global CO_2 emissions by 10% by 2050, compared with a business-as-usual scenario. On this particular issue, then, trade objectives (getting rid of distorting subsidies to fossil fuels) and environmental protection (aimed at reducing the use of fossil fuels) go hand in hand.

From this perspective, trade and trade rules may offer solutions to address certain energy concerns, be it liberalizing trade flows in alternative energy, facilitating transit of traditional energy or tackling distortive subsidies to both.

4.2 Energy – environment (and trade)

That energy demands and environmental protection increasingly interact is even more obvious. Marceau reminds us that '[u]ntil 1850, people mostly used renewable forms of energy: wood, water, wind, human, and animal power. Nowadays 85% of the energy the world uses comes from fossil fuels-coal, petrol and gas-which are non-renewable and polluting'. Kleymeyer adds that 'the energy sector, including energy use and production, accounts for over 50% of global GHGs'. In other words, our use of traditional fossil fuels raises serious environmental problems. As noted above, it is

this environmental imperative that boosts the chances of alternative energy which, in turn, raises trade questions of tariff restrictions and subsidies in respect of renewables. The trend in favour of alternative energy also stimulates competition between renewable and non-renewable energy which adds further pressure on energy markets to be liberalised thereby putting them more squarely in the remit of the trading regime.

4.3 Trade – environment (and energy)

The intersection between trade and environment, finally, is not new but more recently got a major boost due to climate change concerns. Trade and environment debates in the GATT/WTO have been around for at least 20 years centred on infamous disputes between the United States and other WTO members over whether US import bans on tuna or shrimp based on how this tuna or shrimp was caught abroad (killing protected dolphin or sea turtle) were GATT-consistent. Systemically, the question is whether GATT/WTO rules prevent certain forms of environmental protection: in the past, tuna or shrimp bans; today, border tax adjustment or carbon taxes on energy-intensive imports. Substantively, the question is whether increased trade pollutes the environment and enables companies to relocate to countries with lower environmental standards (the race to the bottom argument). As Kleymeyer points out 'materials and energy used to produce globally traded goods and their transport to consumers is a significant part of global GHG emissions'. Moreover, carbon leakage, that is, relocation of firms, or a shift from products made in, climate-regulated countries to countries without climate change legislation is a big concern (discussed in, inter alia, Low and Mages).

Given that energy and energy cost is an important component in the pricing and competition between products, taxing carbon in some countries but not in others may have huge trade consequences whereby the cost of energy becomes a decisive comparative advantage. Mages, for example, explains that 40% of the production cost of cement is energy-related leading to cement representing 5% of man-made CO_2 emissions. Knowing that by 2030 cement production will double to keep up with economic development the cement industry is a good illustration of challenges ahead at the intersection of trade, energy and the environment.

With climate change imperatives imposing different costs on carbon emissions in different countries and trade in energy-intensive products representing a substantial part of global trade flows, trade is destined to become the 'interface' between what risk to become otherwise disconnected, national climate change regimes. Some sort of multilaterally agreed 'carbon accounting' system will need to be put in place to avoid both carbon leakage and protectionism in the guise of unilateral carbon adjustment. With climate change negotiations in tatters post-Copenhagen, one possible solution is to radically rethink the accounting of carbon emissions and shift from a focus on country of production to a focus on consumption whereby carbon is taxed by the country of destination or consumption and border tax adjustment rules can be more easily applied (that is, exports are exempt from carbon tax and imports pay carbon tax in the country of destination, similar to VAT). This question of finding an appropriate 'interface' or 'decompression chamber' between differently regulated economies and their trade in energy and energy-intensive products is one of the most

crucial and urgent challenges at the intersection of trade, energy and the environment.

5 Tentative suggestions for a way forward

Returning to the three-step analysis of (i) fact gathering, (ii) analysis and (iii) policy action and coordination, discussed earlier, one way to proceed is to examine the life-cycle of energy all the way from production (versus conservation) to domestic consumption (versus export) passing by questions of investment, technology, transit, competition, energy-content, carbon footprint and trade. At each step different issues arise with several possible solutions and fora that could address the problem. In evaluating possible solutions, at each juncture the question of whether the market can resolve the problem or whether policy corrections are needed, and at what level (local, national, regional or global) must be carefully examined.

Institutionally, no silver bullet exists and no single forum can appropriately address the multi-faceted interactions. This is clearly a point of agreement shared by all contributions to this book. Fragmentation is here to stay, inevitable and at certain levels even desirable (allowing for special expertise and a level of competition and mutual checks-and-balances). What matters then is to find an appropriate level of coherence and regime interaction (or as Low puts it 'melding of regimes') whereby, for example, climate initiatives and WTO initiatives do not live a life of their own but are developed and implemented side-by-side.

From this perspective, Director-General Lamy's sequencing proposal whereby priority is giving to a post-Kyoto agreement and the WTO then adjusts to such agreement, is promising and quite novel. As Kleymayer explains, in the past 20 years, climate and trade policy making were 'characterised by avoidance rather than collaboration'. Lamy's sequencing proposal, as worded by Low, therefore deserves full quotation:

> in an orderly world of international cooperation, governments would agree on how they needed to cooperate to manage climate change, and the WTO trade regime would make any necessary accommodations to ensure consistency in these related areas of cooperation. This sequence would seem to make sense in light of the reality that maximizing trade flows is not an end in itself-rather, trade is a means of fostering growth and development in conjunction with the attainment of a range of other public-policy objectives including the management of climate change.

Such sequencing is another point generally shared by most contributions to this volume and clearly puts the WTO in perspective. Another element of consensus that puts the WTO and its problem of completing the Doha Round in perspective is the realisation that compared to the fields of energy and the environment, the WTO's normative structure is highly developed. As a result, political priority should probably go to reaching a climate change deal.

Another conclusion reached at the end of two days of discussion was that the current WTO rule book offers a surprisingly large array of solutions to relatively novel energy and environment problems such as energy transit questions, import restrictions on renewable energy or subsidy disciplines applied to both fossil fuels and

alternative energy. Even if these rules were not written with energy in mind, they can be applied in this new light. The big question in this respect is then whether such 'evolutionary interpretation' can be left in the hands of the WTO dispute settlement system (and, in particular, its seven member Appellate Body) or is better handled through a political renegotiation of the agreements or explicit new rules on energy (as occurred in the EC, discussed in Mizulin). At the extreme end of the latter, legislative option is the negotiation of a new 'General Agreement on Trade in Energy' (GATE) modelled on other sectoral deals such as the WTO Agreement on Agriculture or Information Technology Agreement (ITA). Yet, few participants supported this idea. Other options could be an authoritative interpretation of existing rules (which formally requires only a ¾ majority vote rather than unanimity or consensus) or a case-by-case assessment of specific energy problems upon accession of new WTO members spelled out in Protocols of Accession (such as in Ukraine's Protocol of Accession which imposes WTO-plus transit obligations upon Ukraine). Few participants favoured a sectoral agreement on energy or new GATE to be negotiated post-Doha. Although many people stressed the uniqueness of energy (geographical concentration; fixed infrastructure needed for transit and transport; fundamental importance of energy to the economy of both exporting and importing countries), others warned against the mantra of 'energy-is-special' as similar arguments can be made for many sectors (e.g. agriculture, food or audiovisual products). Drawbacks related to including energy provisions in Protocols of Accessions are also readily apparent: they apply only as against the acceding country and risk undermining the general principle of non-discrimination and MFN.

Even if a separate agreement on energy in the WTO did not gain much traction, a general realisation did emerge that energy must be addressed holistically across different fora and agreements. Core questions that need attention, in this respect, are: investment protection and promotion, enhanced competition, disciplines on export duties and other export restraints and transit, all to be addressed in such a way that balances the needs and sovereign rights of both energy exporters and importers and that provides appropriate environmental incentives. According to Lamy, for example, 'it is 'markets' rather than 'trade' that inform the core of policy concerns in the field of energy. Such policy concerns – relating among other things to competition and access to supplies have not really been the core focus of the GATT/WTO's work over the years'.

In this context, many pointed at the artificial boundaries currently drawn between trade in goods (GATT) and trade in services (GATS) with questions such as whether electricity is a good or service (Cossy does express the view, however, that, as in the EC, electricity is probably a good also in the WTO and that, similarly, transit through fixed infrastructure such as grids or pipelines would most likely be covered by GATT Article V on transit). Other 'legal boxes' which have little to do with economic or business reality are distinctions between industrial and agricultural goods (resulting, for example, in much higher tariffs on ethanol than biodiesel largely because ethanol is classified as an agricultural product and biodiesel as a chemical product).

What the WTO in any event needs to work on is a 'coping strategy' pending the conclusion of a climate change deal (once such deal is struck, Lamy's sequencing framework can be activated). For some such 'coping' strategy is for the WTO to do all it can to keep climate change matters and disputes away from the WTO and its

dispute settlement system. On this view, bringing a dispute over, for example, US carbon measures on energy-intensive imports from China before the WTO risks a 'train-crash' scenario whereby both climate change efforts unravel and the WTO's trade liberalisation agenda falls apart. For others, the present author included, the WTO can play a positive, constructive role even in the absence of a global climate change accord, first, by confirming that WTO rules do not stand in the way of genuine environmental measures (even if they are at times unilaterally imposed, as confirmed by the Appellate Body in *US – Shrimp Turtle*) and, second, by firmly condemning discrimination and protectionism in climate change legislation and thereby offering guidelines to WTO members as to how they should construe WTO-consistent climate change legislation. Legislators all over the world are currently asking themselves how they should construe such legislation in line with WTO demands. Clarifications in this respect by the Appellate Body could play a positive role and avoid protectionist excesses.

A great number of uncertainties do remain, however. Politically speaking, will we see a post-Copenhagen climate change deal and what will it look like and require in terms of WTO adjustments? When it comes to trade, will we see a successful conclusion of the Doha Round and what will happen after that, e.g., will WTO members be ready to take up 'new issues' like export restrictions, minimum standards on competition, investment and transfer of technology, each of which are crucial for the energy sector? Finally, and perhaps most importantly, what will technologies of tomorrow look like and mean for the viability of renewable energy and carbon emission reductions and carbon mitigation or storage? As one participant pointed out, perhaps in 10 or 20 years time it will be dead-easy and common practice to calculate the precise carbon footprint of a tonne of steel, car or mobile phone, a technique that could enable levelling the environmental playing field without the current risk of creeping protectionism. Even better, perhaps by then we will have invented alternative energies or technology that can end our dependence on fossil fuels or otherwise halt carbon emissions and we will all look back at today's climate change scare as merely a bad dream which human creativity was able to avert.

A Word of Introduction from the Energy Industry Perspective

John Gault[3]

The conference at the origin of this book, held in Geneva on 22 and 23 October 2009, grew from a series of informal meetings held in Geneva over a two-year period in which we attempted to anticipate how participants in the energy industries could be affected, increasingly, by world trade rules and environmental regulations. Our informal meetings were inspired by the speech of WTO Director-General Lamy at the Rome meeting of the World Energy Congress in 2007, when he said that:

> 'more predictable and transparent trade rules could benefit both energy-importing and energy-exporting countries, and, beyond them, companies engaged in energy trade and consumers – all of us'.

In our meetings, we identified many such potential benefits. And we acknowledged that energy, trade and the environment are already inextricably intertwined, to the point that policymaking in any one of these three domains must now take into consideration the other two.

Energy is a significant part of world trade. Trade in fossil fuels and electricity account for about 15% of global merchandise trade (by value), and goods containing substantial amounts of embedded energy – steel, aluminium, cement and so forth – add roughly another 5%. And this does not even include petrochemicals, polymers and plastics, and nitrogenous fertilisers derived from natural gas. Nor does it include trade in equipment used in the production of energy, whether from traditional sources or renewables. So, think of 20% of merchandise trade as a lower bound.

In addition, transportation accounts for nearly a quarter of global trade in services, and the travel industry – which could hardly exist without transportation – makes up another quarter. So, fully half of world trade in services is intensely energy-dependent. But this is again a lower bound: we are not even counting here trade in oilfield services, energy consulting services, or financial services related to energy trade and energy infrastructure development.

Clearly, the energy industry, defined in this very broad manner, has a lot at stake as trade and environment rules are adopted and interpreted.

As we all have observed, firms in the energy industry do not speak with a single voice on trade and environmental issues. Nevertheless, I believe we can identify some common interests.

Those who produce, transport and transform energy are faced today with

3 Energy Specialist and former Chief Economist at the International Development Cooperation.

enormous challenges. They must invest to meet expanding global demand for energy, especially in developing countries. They must cope with rising costs as they search for energy in more remote regions and ever-deeper ocean depths, using ever more exotic technologies. They must invest simultaneously in research, development and deployment of new and renewable energy sources. And their investments must provide a return to their shareholders, whether those shareholders are private investors or the government owners of state-owned enterprises.

These challenges are daunting, but they are compounded in the absence of a clear, predictable and logical legal framework. The energy industry cannot supply the world's energy needs if the rules to which they are subject are vague, contradictory, inconsistent or constantly changing.

And that brings us to the content of this book. We hope it will stimulate thinking about how to improve clarity and consistency of rules, so that our simultaneous needs for trade expansion, environmental protection, and the provision of adequate energy can be met.

A Word of Introduction from the Trade Negotiator Perspective

Ambassador Lucius Wasescha[4]

This conference is very topical and tackles important questions and interesting challenges. The way the synergies and interactions between trade, energy, and the environment are being dealt with has the potential to greatly influence future international governance and the architecture of international law.

However, the topics of trade, energy, and the environment still remain by and large isolated and are being dealt with in different fora (trade in the WTO and FTAs, energy in the Energy Charter and OPEC, the environment in the UNFCCC and MEAs). The respective negotiators and specialized experts often do not communicate amongst themselves-often, they don't even understand each other. Take for example the abbreviation NAMA. For WTO people, and especially for me as the NAMA Chair, this obviously stands for non-agricultural market access. In the climate negotiations within UNFCCC however, this abbreviation is just as widely used but means something completely different: nationally appropriate mitigation actions. This anecdote shows how the current fragmentation in international law renders it difficult to find coherent solutions.

In our globalised and ever more connected world, no system can still pretend to function in isolation of the others. Thus, when developing one system-say WTO law in the Doha Round negotiations-we should always keep in mind how it could influence other systems. The aim must be to change over time from the fragmented system of global governance which is organized in different pillars into an ever more coherent web of mutually supportive elements. An important basis for this challenge is the principle that there is no automatic hierarchy between different bodies of international law, even though some might have more 'teeth' by relying on an effective dispute settlement mechanism.

I'd like to mention a few thoughts on each of the different panels. The first panel explores the realm of existing international cooperation, a recent example being the joint UNEP-WTO Report on Trade and Climate Change. This report has shown the potential for synergies through better cooperation and experience sharing. My government welcomes and supports such initiatives.

The second panel investigates the import, export, and production restrictions on energy goods and services. The GATT/WTO system is focusing on market access (i.e., imports) and there are no specific rules for energy. The important issues to tackle in the field of energy lie elsewhere, in export restrictions and export taxes, production

4 Ambassador, Permanent Representative of Switzerland to the WTO.

restrictions, monopoly practices, and the like. I am happy to see these topics on the program of this conference.

Transport and transit, which are the subjects discussed by Panel 3, face a similar problem. The Article V of GATT stating the principle of freedom of transit has been negotiated with traditional goods in view. Energy, however, is different in that its transport and transit requires a specific transport network, e.g., pipelines. Thus, the relevant questions are related to the access to, and use of, fixed infrastructure and the creation of new infrastructure.

Panel 4 explores environmental issues in the trade and energy context. Due to the greatly divergent levels of commitment to reduce greenhouse gas emissions, there are two big concerns: the environmental concern of carbon leakage and the economic concern of competitiveness. The challenge for the trading system will be to adapt itself to new rules, which will fundamentally challenge production and consumption patterns. The WTO of the future shall, on one hand, not undermine the efforts to combat climate change, and on the other hand, keep its important role as a guardian against protectionist measures. Finally, let me add that there is a dangerous tendency to limit environmental issues to the most topical one at the moment: climate change. But one must not forget other important environmental concerns, such as biodiversity, water pollution, and endangered species, among others.

On the question of subsidies and pricing to be addressed by the last panel, we face a double challenge. How can we phase out subsidies to fossil fuels, which are undermining environmental efforts, while controlling the growing environmentally-inspired subsidies for renewable energy production in a way that does not distort trade?

In closing, I would like to remark that the merit of this conference is to bring together the artificially-separated topics of trade, energy, and the environment. Congratulations to the organizers for this visionary approach, the interesting program, and the good choice of speakers. I look forward to an inspiring and enriching dialogue and am happy that Switzerland is supporting this conference.

Keynote Speeches

Energy, Trade and Global Governance

Pascal Lamy[4]

I am pleased to welcome you here and to have this opportunity to share with you some thoughts on energy and its relationship to trade and to trade governance. These are indeed complex questions of rising importance in international economic relations.

The first time I publicly entered the debate on energy and trade was in a speech two years ago to the World Energy Congress in Rome. In that speech I discussed some of the reasons why energy had not featured prominently so far in the GATT/WTO, notwithstanding the fact that many of the principles underlying our trading rules were applicable in key ways to international commerce in energy and energy services. I also argued that for a range of reasons the time might be ripe to consider these issues more closely. Two years on, I believe that this is even truer than it was then. It is for this reason that I welcome the initiative taken by the organisers of this conference.

1 Key energy products display special features

As we all know, energy as a product embodies a number of special characteristics that render its treatment in policy terms different from that of many other products in sectors such as manufacturing and agriculture.

Markets clearly play a part in the economics of energy supply and demand, but in a rather more complicated way than what a standard textbook would tell us about the workings of markets and the role of international trade. Let us briefly consider some of the reasons for this.

First, much of today's energy supply – particularly fossil fuels and natural gas – is geographically concentrated, fixed in terms of location, and prominent in the production and trade of the countries that possess the resource. Thus, trade patterns on the supply side are largely pre-determined and change only slowly, in contrast to the shifting comparative advantage we associate with economies that are less resource-endowed in this way.

But compared to the geographical concentration that characterises the supply side of energy markets, demand is very widely spread because we all need energy to run our economies. This relationship between supply and demand has important implications for the economic and political conditions under which trade takes place.

4 Director General, WTO.

A second feature of today's key energy products is that they are scarce and non-renewable. Combined with their fixed and concentrated location, this makes for less direct competition in production and the presence of significant economic rents.

Thirdly, natural resource sectors tend to display a high degree of price volatility. While no leading economic model explains the causes of such volatility, contributing factors include supply uncertainties, inelastic demand due to the lack in the short run of substitutes for traditional energy products, and the role of speculation and political uncertainty in some producing countries.

2 Trade and the traditional WTO focus on particular trade rules do not play their 'standard' role in many energy markets – but trade and trade rules are still relevant

This combination of circumstances means that trade does not enhance competition and adjust resource allocation in the standard 'Ricardian' manner to say, that we think of in relation to trade in manufactures, agriculture and services.

Hence the view that the GATT/WTO's traditional focus on the instruments of trade policy, such as tariffs and quotas, is less applicable in energy markets. Indeed, there is a sense in which it is 'markets' rather than 'trade' that inform the core of policy concerns in the field of energy. Such policy concerns – relating among other things to competition and access to supplies have not really been the core focus of the GATT/WTO's work over the years.

On a purely practical level, there is also the reality that many of the suppliers of traditional energy products are either recent entrants into the WTO, or are still in the process of negotiating their accession. Let me just mention a few of those knocking at the WTO door to illustrate this point: Russia, Kazakhstan, Azerbaijan, Algeria, Lybia, Iran, Irak, Sudan to name but a few.

In addition, regardless of where traditional sources of energy are located, sovereignty and strategic concerns figure much more prominently in this sector, making for a greater reluctance to enter into internationally binding agreements.

Let me be clear, however. I am not arguing, either normatively or positively, that the WTO and the world of energy are parallel universes and should forever remain so. Far from it. The culture of international trade cooperation that defines the WTO – and many of the rules underpinning it – is actually and potentially relevant to energy in several sorts of ways that I shall return to in a minute.

3 Realities in energy markets are changing

Before that, though, I would like to take note of some significant changes that are occurring in energy markets, and which some argue fortify the case for closer attention on the part of the WTO to the energy sector. Over time, a larger number of players have entered the field on the supply side. In no small part this is the result of technological advances and the diversification of energy sources. Fossil fuels and natural gas increasingly compete with alternative energy sources such as nuclear

power and renewables, including bio-fuels, wind, water and solar power.

The trend towards embracing renewable sources of energy will only continue as concerns about global warming intensify. Climate change, and how we can secure international cooperation to combat it, has become a central preoccupation of the global policy community. This carries significant implications for energy markets.

I am not suggesting that the structure of the energy market will change overnight, or that technology will not work its wonders in the traditional energy sector as well as in new areas, such as through the development of carbon capture and storage techniques.

But I am arguing that the panorama is changing and that this reinforces the case for examining how an institution like the WTO might contribute to an orderly and mutually beneficial framework for cooperation in the energy field.

4 Issues actually and potentially relevant to the WTO

I have already said that the purpose of the WTO, its existing structure and the content of some of its rules are directly relevant to the energy sector. I would also argue that natural extensions of existing rules could be relevant to the sector. Let us briefly examine these propositions more closely.

For all the reasons already discussed, the WTO does not address energy as a distinct sector. But in a broad sense, the purpose and framework of the WTO is applicable to all trade. Non-discrimination, transparency, an explicit structure of rules that provides predictability and reduces uncertainties, greater openness over time and a mechanism for settling disputes constitute the foundations of the system.

This is the starting point. After that, a number of specific rules are particularly relevant. Just like any sector where trade is feasible, obstacles to trade are equally feasible. Among the energy related issues that come to mind are subsidies that distort trade, state trading disciplines, transit rights for transporting energy, and export restrictions. As has been discussed in one of your previous sessions today, the WTO has something to say on each of these.

In the field of services, the WTO has established a framework of cooperation that includes services incidental to the extraction of oil and gas, services incidental to energy distribution and pipeline transportation of fuels. Indeed, the current negotiations on energy services cover a broad range of activities relevant for energy suppliers and traders, encompassing all energy sources, including renewables. Governments are seeking commitments from one another in services areas such as drilling, engineering, technical testing, pipeline construction, and distribution.

Many of these issues are being negotiated in the on-going Doha Round: energy services, transit rules, subsidies or climate friendly goods and services. But there are obvious questions which remain to be answered. More and more questions in the area of energy relate to competition and investment policy, on which the WTO has presently little to no say. There are also no disciplines on export taxes, for the moment.

And as climate change concerns loom larger, the WTO becomes relevant in relation to the possible use of trade measures to manage leakage or competitiveness concerns arising from the costs of carbon constraints on production. The potential

development of international trade in carbon emission permits and the establishment of carbon offset arrangements which could be considered as 'subsidisation' may also involve a WTO angle.

Concluding observations

I have not attempted to present an exhaustive account of the interface between energy and the WTO. But the links are clear enough. There is a core question that I think we need to ask ourselves, based on three 'givens' that I have already discussed:

- that energy is of fundamental importance to every economy in the world,
- that the energy sector embodies particular characteristics affecting the nature and content of international cooperation,
- and that the sector is changing rapidly in quite fundamental ways.

The core question I refer to is whether we need a new, more comprehensive global governance in energy. Following from this, if the answer is affirmative, is what the form and content of such governance should be and in what institutional setting. Finally, what would be the WTO role in this new energy governance? For instance, should the WTO adapt its existing rules or define specific rules to energy?

I regard these as questions that need to be explored. I hope that a conference such as this one will help to disentangle the complex set of issues involved and start to direct us towards research-based answers. I look forward to learning of the results of your deliberations. You have had a long day and I shall stop here. As usual, I welcome any comments and questions.

Thank you.

The WTO Mission and Global Challenges at the Intersection of Trade, Energy and the Environment

H E the Sheikha Lubna Al Qasimi
Minister of Foreign Trade of the UAE

Let me first applaud the timely initiative taken by the Graduate Institute and the WTO with this ambitious program dealing with global challenges. We hear a great deal about the individual issues of trade, energy and the environment, but we need to understand how these interact in practical and legal terms in order to develop a coherent way of dealing with these challenges.

Our presence at this Conference reflects our encouragement of enhanced dialogue between, governments, international organisations, the private sector, researchers and experts.

We know that we face new and global challenges which are in the carrefour of trading, energy and environmental systems. These challenges turn around a central inquiry: how can we increase economic well-being and expand trade, while promoting the optimal use of the world's energy resources and protecting and preserving our shared environment? Many questions follow: are increased trade and environment protection compatible? Can we achieve development and ensure the allocation of world resources without trade? How can we manage the relationship among trade, energy, and the environment – and climate change in particular?

And concerning our international institutions: how can we improve cooperation in a world where fundamental changes in supply and demand relationships are emerging in international food and natural resource markets?

One of the most significant and direct issues raised by these inquiries relates to the impact on greenhouse gas emissions from the increased output of economic activity resulting from open markets and increased trade. Actually, the general presumption is that trade liberalisation will increase economic activity and hence energy use. It follows from this presumption that, everything else being equal, this increase in economic activity and energy use will lead to higher levels of greenhouse gas emissions. Freer trade could also lead to increased CO_2 emissions as a result of more economic activity.

However, I submit to you an alternative perspective, that trade liberalisation leads to the efficient allocation of resources and creates improved energy efficiency. If we follow the logic of this approach, the production of goods and services under conditions of free trade will generates less greenhouse gas emissions. This decline in emission intensity can come about in two ways:

First, freer trade will increase the availability and lower the cost of environmentally-friendly goods, services and technologies. This is particularly important for countries that do not have access to these goods, services and technologies or whose domestic industries do not produce them in sufficient scale or

at affordable prices. For exporters, additional market access can provide incentives to develop new products, services and technologies to mitigate climate change.

Second, the increase in income that trade brings about can lead society to demand better environmental quality – in other words, less greenhouse gas emissions. Increased competition will foster technological innovation in areas related to protection of the environment and combating climate change. By increasing the availability of goods, services and technologies that are likely to be important in improving energy efficiency, trade can help to meet the challenge of global warming.

From our point of view, trade and trade opening can have a positive impact on the allocation and efficient use of energy resources and therefore should reduce emissions of greenhouse gases in a variety of ways including by accelerating the transfer of clean technology and the opportunity for developing economies to adapt those technologies to local circumstances.

Rising incomes, resulting from trade opening can also change social dynamics and aspirations, with wealthier societies having the opportunity to demand higher environmental standards including ones on greenhouse gas emissions. Of course, all peoples want higher environmental standards, but other basic human needs come first as a practical matter.

In addition, there is evidence that more open trade together with actions to combat climate change can catalyze global innovation including new products and processes that can stimulate new clean tech businesses for uses of traditional energy and new, alternative sources of energy.

So, trade openness can help efforts to mitigate and adapt to global environmental challenges, for example by promoting an efficient allocation of the world's resources (perhaps most importantly, energy), raising standards of living (and hence the demand for better environmental quality) and improving access to environmental goods and services.

On all of these issues WTO is relevant because national measures to mitigate and adapt to climate change will affect international trade and modify conditions of competition and may be subject to WTO rules. The WTO 'tool box' of rules is highly relevant, therefore, to the examination of climate change measures. Moreover, WTO rules, as a whole, offer a framework for ensuring predictability, transparency and the fair implementation of such measures.

In the UAE we are working to pass comprehensive legislation to protect our nation from the serious economic and strategic risks associated with our reliance on oil as a major source of energy and the associated environmental effects, including changing climate. Policies to advance energy and climate security must promote non-discriminatory economic recovery efforts, freer trade, economic growth and accelerated job creation, and drive clean energy manufacturing.

Our ambitious goals for sustainable development and resource management are driving the UAE to seek out innovative environmental and clean-energy technologies in a various sectors including alternative fuels, emissions control, 'green' building, energy conservation, environmental safety, renewable energy, and water treatment. We recognise that we cannot achieve these objectives without the stabilizing force of the rules and underlying economic philosophy of the WTO.

In this connection, last June, Abu Dhabi, the capital city of the United Arab Emirates, was chosen to host the main offices of the newly-formed International

Renewable Energy Agency, known as 'IRENA'. This culminates the Emirate's years of regional leadership in the advocacy and implementation of sustainable solutions to development. Through a mandate from 136 of the world's governments, IRENA will act as the lead agency in promoting a swift transition towards the sustainable and global application of renewable energy.

We owe to ourselves and to future generations to improve energy efficiency and to use renewable energy sources wherever possible. Indeed, the UAE is establishing itself a global leader in the field of renewable energy. Abu Dhabi Future Fuels Company, also known as Masdar, is planning to build the world's first carbon-neutral city. Masdar City, the first such project of its kind to be undertaken by a major hydrocarbon-producing economy, will rely entirely on solar energy and other renewable energy sources, forming what we envision to be a sustainable, zero-carbon, zero-waste ecology.

Last year, Masdar announced a US$2 billion investment in photovoltaic film technology which will hopefully commence production in Abu Dhabi by mid-2010. This will mark another first in the Arab World's sustainability efforts.

The UAE's passionate advocacy for renewable energy has greatly helped establish itself as a safe, healthy, and responsible lifestyle and business destination. It has also opened up numerous potential partnerships in alternative energy. The Masdar Initiative alone has signed up some of the world's elite organisations, such as BP, General Electric, and the World Wildlife Fund who represented on panels here today, as well as other leading lights in the sector like Shell, Occidental Petroleum, Total , Mitsubishi, Mitsui, Rolls Royce, Imperial College London, and the Massachusetts Institute of Technology. We look forward to welcoming even more participation as IRENA draws industry leaders and specialty groups to this rapidly growing industry.

We would like to take our country in a new direction, that will jump-start our economy and build the clean energy jobs of tomorrow and we submit that Measures addressing environmental challenges need to be fully compatible with the international community's wider ambitions for economic growth and human advancement, as embedded in the WTO system.

Despite of the lack of specific agreement dealing with the environment, the Doha Agenda includes specific negotiations on trade and environment. Besides, under WTO rules members can adopt trade-related measures aimed at protecting the environment provided a number of conditions to avoid the misuse of such measures for protectionist ends are fulfilled. This conference will help us all to consider how we can respond to these challenges, without undermining our future economic health.

Consensus between all of us that a successful outcome of the negotiations on environmental goods and services could deliver a triple-win for WTO members: a win for the environment, a win for trade and a win for development.

By the way, I would also hope that we can seize the unique opportunity of negotiations on the WTO-Multilateral Environmental Agreements (MEAs) relationship to create positive synergies at the intersection of the trade, energy and environment challenges at the international level.

Moreover, UAE will urge the international community to seal an equitable and decisive deal at the crucial UN climate convention meeting in Copenhagen in December, just as we urge nations to conclude the Doha trade round. There is some sense of pessimism concerning the substance and speed of both of these negotiations

– we do not share this pessimism and support expedited and meaningful results in each case.

Since environmental, energy and trade issues often transcend national borders, the response must involve concerted action at the international level. Thus, it is not only with the global financial crisis, but also at the intersection of global challenges concerning energy, the environment and trade, that we need global solutions.

This crisis shows us that no economy in the world is immune. It's obviously that crisis felt hardest for the majority of developing countries. The perspective is clear enough: acting together to help developing countries, especially the poorest among them, to mitigate the worst effects of the global challenges.

We have no other choice than to move from commitment to implementation. Aid for Trade is essential today – and must be implemented in practice. This will allow many developing countries to prepare their exit from the crisis by enhancing their trade capacity. Aid and trade are both key parts of the solution to deal with the issues of public health, climate change, biodiversity, food security and renewable energy. But the real solution is in action and in implementation, not in words.

We have to keep in mind that the world community can be infected by various afflictions if we do not cooperate and action together in our common interest. As is clear from current developments, infectious diseases certainly do not respect borders, and prey upon our common physiology, blind to political boundaries. Health represents the most compelling case for international cooperation.

The health of our planet's environment depends on our collaboration in exactly the same way. Climate change is expected to have a severe impact on disease patterns and on agriculture: so health, food security and adaptation to climate change are fundamentally interlinked. To retreat behind borders – whether they are national borders, or formal boundaries between our institutions – is not an option. With a challenge of this magnitude, multilateral cooperation is crucial.

Nevertheless, Interdependence shows its limits to address internationals problems, crisis and threats. In the new context of international relations, interconnectedness seems to be the relevant key for new international cooperation based on 'distributive' justice and diffuse reciprocity but never on 'commutative' justice and specific reciprocity. International cooperation resulting from interdependence paradigm reveal a mere option to not perish together. The interconnectedness paradigm involves, however, our desire to live together.

Free trade is not an end in itself, but is rather linked to fundamental human values and welfare goals captured in the WTO's founding charter. For all the complexities and challenges that we face today, we can be sure of the simple truth, that our challenges cannot be solved without a constructive and positive cooperation during the Doha development Negotiations.

Finally, I would like to thank Director General Lamy, all of our colleagues at the WTO Secretariat and the Graduate Institute for hosting this Conference, with which I wish you great success. Thank you very much.

Part I

Setting the Stage: The Landscape of Existing International Cooperation

1. The WTO in the Emerging Energy Governance Debate

Gabrielle Marceau[5]

1 Introduction

Although they were not initially designed to address energy issues per se, several WTO rules are relevant and 'applicable' when assessing the WTO compatibility of energy-related actions that could have an impact on trade. This chapter begins by describing the GATT/WTO rules which may be relevant in the trade in energy debate. It then discusses some of the energy-related issues that are covered by the ongoing Doha negotiations and in some of the WTO accession agreements, before pointing to a few energy-related issues, such as dual pricing or export taxes, that are currently debated informally in the WTO and which call for more reflection and analysis. Finally, some of the normative and institutional issues involved in the conceptualisation of new or improved rules on energy governance are addressed.

The rules of the General Agreement on Tariffs and Trade (GATT) and those introduced upon the formation of the WTO rules were not initially designed to address energy issues per se, but several of them are nonetheless relevant and applicable when assessing the WTO compatibility of energy-related actions that could have an impact on trade. These rules will be the focus of the first part of this chapter. I will then discuss briefly the energy issues that are covered by the ongoing Doha negotiations and in WTO accessions as well as some that call for further reflection and analysis. Finally, I will explore some of the normative and institutional issues that need to be addressed when considering negotiating new or improved rules on energy governance.

One important preliminary issue is to define what we mean by 'energy' or 'trade in energy' or 'energy trade'. Should we define energy in terms of products like oil, gas, electricity, hydrocarbons, biofuels, firewood and charcoal, or in terms of their use? We could try to define energy as the action (product and process) through which energy-rich natural resources are consumed and transformed to respond to a series of societal and individual human requirements for heat and power. Is energy-electricity, for example – a good or a service? One of the issues is that WTO rules treat goods and services differently, but the industry does not distinguish energy in terms of goods and services. In fact the energy sector would seem to include aspects of both trade in

5 Gabrielle Marceau PhD., is counsellor in the Cabinet of the WTO Director-General and Associate Professor at the University of Geneva. Opinions expressed in this paper do not bind the WTO Secretariat or WTO Members. I am grateful to Robert Anderson, Dimitar Bratanov, Mireille Cossy, Arancha Gonzalez, Jesse Kreier, Kojo Oseih-lah, Peter Milthrop, Ronald Steeblick, Antony Taubman and Julian Wyatt for their useful comments.

goods and in services. WTO jurisprudence is clear that a single commercial activity and even a single measure can be covered by the rules of both the GATT and the General Agreement on Trade in Services (GATS). Since the GATT disciplines are generally applicable to all products (while all the GATS disciplines are not applicable to all services), we need to clarify which aspects of trade in energy are covered by the rules of these and other WTO Agreements.[6]

Another important characteristic of the WTO rules in relation to the energy debate is that since many of the energy-related activities are covered by the disciplines of the GATS, several obligations in this sector are also reflected in Members' schedules of specific commitments on services. The drafting and interpretation of commitments in schedules require a well-informed understanding of the operating functioning of the energy industry. Such energy expertise is very precious.

Finally, there are the pollution and climate-change dimensions of this debate. It is also important to understand the distinction between energy issues and climate change, which is the consequence of our misuse of polluting forms of energy. Until 1850, people mostly used renewable forms of energy: wood, water, wind, human, and animal power. Nowadays 85% of the energy the world uses comes from fossil fuels-coal, petrol and gas-which are non-renewable and polluting. This shift has had disastrous impacts on the natural environment, threatening the very survival of our species. Our individual and societal energy needs cannot be that easily reduced, and energy policies require multifaceted economic and political considerations.

2 Existing rules in GATT/WTO agreements

The WTO has rules on trade in goods, trade in services and trade-related intellectual property rights. The GATT and WTO rules impose disciplines on all trade in products, past and future. To the extent that energy (oil, natural gas or coal for example) is a product, then all WTO provisions that contain disciplines on trade in goods are applicable. The same is true for energy-related services; all rules of GATS are potentially applicable.

2.1 WTO rules on trade in goods

The rules prohibiting discrimination between like products – whether among imported products (most-favoured-nation, GATT Article I) or between imported and domestic products (national treatment, GATT Article III) – are relevant. One basic issue in WTO is to determine whether two products are 'like' and WTO case law has determined that two products are *a priori* 'like' if they 'compete' with each other in a specific market. So, one issue would be to determine whether energy-efficient products are like non-energy-efficient products and thus whether regulatory and tax distinctions can be based on energy-related criteria. This brings into play the long debate on process and production methods (PPMs) and whether non-product related

6 In this context one may recall that recently the WTO *China-US audiovisual* panel decided that films-which trade experts long assumed were covered exclusively by the GATS rules on audio-visual materials-were also 'goods' and therefore that films were subject to the general prohibition on quantitative restrictions of the GATT.

criteria can be used to distinguish two otherwise like products and to what extent energy used in production can be considered to be integrated into a product and thus a characteristic of, and part of this product.

The basic GATT rule (Article XI) prohibiting quantitative restrictions applied at the border is also relevant. Members have expressed concerns in relation to licensing requirements governing access to oil and gas pipelines and other export distribution networks, which could have the effect of restricting the volume of oil and gas exported, and could therefore be inconsistent with the requirements of GATT Article XI.

Another basic rule of the GATT is included in Article V that prescribes freedom of transit and prohibits in that context most-favoured-nation (MFN) and national-treatment (NT) violations as well as unreasonable charges and regulations imposed on the traffic of products in transit.

The GATT and other WTO rules that require that Members respect tariff commitments (and other WTO scheduled commitments) are also relevant. Adding additional or specific commitments to Members' Goods and Services schedules to include various commitments relating to the specificities of energy could be useful in energy-trade commitments.[7]

The GATT and many other WTO Agreements contain provisions for general exceptions that allow governments to deviate from their WTO obligations when they want to give priority to non-commercial policies, such as the protection of human health or the environment. Therefore, in the context of a climate-change programme for instance, these exception provisions may allow a government to treat products that are otherwise similar and competitive differently by introducing regulatory distinctions based on environmental considerations, such as the CO_2 impact of traded products.

The WTO's general rules on subsidies, prohibiting export subsidies, and allowing specific domestic subsidies so long as they do not cause adverse effects are also important to consider in the energy debate. More generally, contingent trade remedies (whether countervailing, anti-dumping or safeguards) have been invoked in respect to energy products and in respect to products benefiting from low-cost energy inputs. Provisions under Article 8 of the Agreement on Subsidies and countervailing duties (SCM Agreement) that deemed certain government assistance non-actionable – including for research and development (R&D) and to promote adaptation of existing facilities to new environmental requirements – expired at the end of 1999, short of a consensus of Members to extend them, as requested by Article 31 of the SCM Agreement. Numerous commentators have called for re-instating such a provision to provide a safe haven for subsidies for renewable energy or for climate-change mitigation or adaptation, although as of now these calls have not been reflected in any proposals or even discussion by Members in the Negotiating Group on Rules.

Maintaining dual pricing may be a considered as a form of 'subsidy' that provides benefits, but this does not mean that it is necessarily inconsistent with the SCM Agreement. It may not be inconsistent if: i) access to the lower price is not conditional on the export of a good (thus not an export subsidy), ii) it is not 'specific'

7 Recall the evolving use of schedules in the GATT and WTO from tariffs to subsidies, government procurements, and services, thus allowing for better 'adapted' commitments.

(thus not actionable), and, iii) even if it is specific, it does not cause adverse effects to another Member.

However, if dual pricing cannot be shown to be applied solely in accordance with 'commercial considerations' – i.e., that the state trading enterprises respect non-discrimination in their sales and purchases and afford the enterprises of other Members adequate opportunity to compete for participation in such purchases or sales-it could be contrary to the state-trading provisions of GATT Article XVII. At least some, if not all, of the energy monopolies of countries in the process of accession to the WTO would seem to be covered by this provision and should therefore avoid discrimination and 'behave' commercially. Some Members have argued that if domestic prices for natural gas are set by decree (thus not through market forces) and do not reflect production costs and a reasonable profit, they are therefore not determined 'solely in accordance with commercial considerations' as prescribed by Article XVII(b). Members have also argued that state monopolies that maintain domestic prices for natural gas at levels well below that of their long-term marginal cost of production, are acting contrary to Article XVII. Recall that during the 2006 dispute among Ukraine, Russia, and the EU over the transmission of natural gas, some noted the absence of 'market prices' for oil and transit fees between Ukraine and Russia as most problematic. In other words, some argued that one of the causes of this difficult situation was arguably the fact that the actors in that dispute-the state monopolies-were not trading commercially, hence engaging in non-commercial behaviour making not solely commercial choices.

The WTO rules on agricultural subsidies, allowing for export and domestic support subsidies below scheduled commitments and non-limited green subsidies, are also relevant to energy trade, for instance in the cases of biofuels and other forms of subsidised agricultural fuels. In the context of climate change, WTO rules applicable to agriculture, notably those on subsidies, will become very relevant as agriculture is one of the sectors most affected by climate change.

The WTO Agreement on Technical Barriers to Trade ('TBT') could also be highly relevant to the extent that it encourages the adoption of efficient technical regulations and favours their international harmonisation. The TBT Agreement also confirms that technical regulations can restrict trade in their implementation of WTO-legitimate objectives, so long as their effects are not more restrictive than necessary. Another important principle of the TBT provides that if a national regulation or other measure complies with an existing international standard, it is presumed to be WTO consistent. This is very important as regards, for example, all efficiency requirements relating to electricity, fuel, and energy in general.

2.2 WTO rules on trade in services

It is also clear that the General Agreement on Trade in Services (GATS) applies to all measures that affect trade in services – a very broad reach. Therefore, all services related to trade in energy can be covered by the GATS. Thus the GATS tentacles touch a multitude of aspects of the energy trade.

Under the GATS, all Members are bound by a number of general obligations and disciplines, among which the most-favoured-nation principle (Article II) is the most important discipline for energy-related services. It requires each Member to treat all

other Members' services and service suppliers in a non-discriminatory manner, but it does not impose on any Member the obligation to accept foreign services and services suppliers in its market (e.g., to give access to its national oil service market). However, if such a Member's schedule guarantees one WTO Member access for a particular service, it must do so in favour of all WTO Members' services and service suppliers equally.

The GATS general rules on monopolies and exclusive services suppliers (Article VIII) are also of particular relevance to energy services where monopolies are very common. Article VIII requires each Member to ensure that: i) the incumbent monopoly in a given market does not act in a manner inconsistent with MFN and with its specific commitments (discussed below), and ii) the monopoly supplier does not abuse its monopoly position in supply of a service outside the scope of its monopoly rights that is the subject of a specific commitment by that Member.

Article VI of GATS establishes general disciplines on domestic regulation. Regulatory issues are particularly relevant for energy services as the sector is highly regulated and network based with the existence of incumbent suppliers and where the supply of services depends on the right of access to infrastructure (e.g., gas pipelines, electricity grids, gas storage facilities, liquefied natural gas (LNG) terminals).

GATS also contains a number of specific obligations that are applicable only to sectors in which specific commitments have been scheduled. In GATS, commitments are scheduled along four modes of supply and by sectors, mostly in accordance with a widely used, non-mandatory classification. This generally accepted classification of services is the Sectoral Classification List (W/120), drafted on the basis of the United Nations Provisional Central Product Classification (CPC) of 1991. Neither the W/120 nor the CPC includes a distinct comprehensive category for energy services. Nevertheless, the W/120 contains three sub-sectors that are explicitly related to energy activities: services incidental to mining, services incidental to energy distribution, and the pipeline transportation of fuels. In addition to these three sub-sectors, a number of sectors and sub-sectors listed in the W/120, such as road, rail or maritime transport, distribution, construction, engineering, and consulting, may also cover energy-related activities, but are not exclusive to the energy sector. Thus, while all energy-related services are covered in principle by the W/120, it is not easy to identify them individually.[8]

Obligations of market access (Article XVI) and national treatment (Article XVII) apply through the inscription of specific commitments under the GATS. Market access and national treatment WTO-consistent restrictions in energy services are similar to those in other sectors, including nationality and residency requirements, restrictions on foreign investment, discriminatory treatment of foreign suppliers, the existence of exclusive rights and monopolies, and arbitrary business and licensing requirements. High duties and requirements of local procurement for energy-related equipment and materials can also pose barriers to energy services.

8 Typically, the Plurilateral Request in this sector, tabled by interested Members in the wake of the Hong Kong Ministerial Meeting lists a range of energy-related sub-sectors – from engineering and integrated engineering services to retailing services of fuel oil, bottled gas, etc. – that are scattered across the W/120. (Remarkably, two of the three energy-specific sub-sectors-services incidental to energy distribution and pipeline transportation-are not contained in this request.)

Many hold the view that additional disciplines on domestic regulation and competition are needed for energy services. In fact, requests for additional commitments (Article XVIII) on regulatory transparency and non-discriminatory treatment in access to and use of networks have been put forward in negotiations on energy services. We will see later how the additional commitments were made in the case of Ukraine's accession to the WTO.

2.3 WTO rules on regional trade agreements

The WTO rules on both goods (Article XXIV) and services (Article V) allow for regional preferences – subject to certain conditions and so long as they do not affect trade with third countries. It is usually accepted that WTO-consistent regional trade agreements (RTAs) can lead to some discriminatory restrictions on trade, so long as they are inherent and necessary to the formation of the RTA. But it is far from clear if RTAs can justify discriminatory pricing or regulations. To the extent that countries may develop regional energy policies, the WTO rules and flexibilities provided for RTAs may become very relevant.

In this context, preferential and general rules of origin based on energy or climate change related action could become crucial.

2.4 WTO rules allowing for preferences for developing countries

The WTO Enabling Clause allows developed countries to provide tariff preferences to imports of goods from developing countries and Article VI of the GATS contains similar flexibilities for trade in services. The recent Appellate Body report on EC – *Generalised system of preferences* (GSP) seems to suggest that such preferences can be conditioned upon the respect of development-related-requirements, if applied objectively and fairly. Arguably, access to energy is an inherent part of development, and GSP schemes could include energy-related criteria.

2.5 WTO rules on government procurement

The WTO rules on government procurement[9] – which apply only to signatories of the agreement-cover for governmental purchases basic principles of national treatment and non-discrimination (Article III). The Government Procurement Agreement (GPA) also contains disciplines on technical specifications (Article VI), which aim at avoiding 'creating unnecessary obstacles to international trade' and ensuring that, to the greatest extent possible, specifications are prescribed in performance terms and in keeping with international standards. The GPA also allows Members to impose justifiable conditions that can include energy-related criteria. For instance, some Parties (e.g., Canada, the EC, and the US) cover, as part of their non-sensitive defence procurement items, products that are either from the energy sector (e.g., fuels and lubricants, nuclear reactors) or may have a use in the energy sector (e.g., mechanical power transmission equipment, electrical machinery and equipment, pumps, compressors, and boilers).

9 It is also unfortunate that the relevant negotiations under Article XIII of the GATS on government procurement on services are stalled.

2.6 Conclusion

In sum, the Marrakesh Agreement Establishing the World Trade Organization ('the WTO Agreement') has a very broad scope of application and reach, over several energy-related commercial activities. The great difficulty is '*how*' the WTO disciplines would operate and if specific energy-related activities or practices would be WTO-consistent. In this context, one should remember that the WTO has no investigative powers, so only Members can challenge the actions of another Member, either politically in relevant regular committees, or before the Dispute Settlement Body where Members' measures are always presumed to be WTO consistent as members are presumed to be acting in good faith and in a WTO-consistent manner until proven otherwise. In disputes, all Members are also presumed to have sufficient economic and legal interest to initiate an adjudication process on whether a WTO obligation has been violated *de jure* or *de facto* without having to demonstrate the negative trade impact of the challenged measure. The WTO jurisdiction is compulsory, exclusive, and relatively rapid. It is interesting to note that the very first dispute in the WTO concerned exports of gasoline from Brazil and Venezuela to the United States.

3 Rules currently being negotiated in the DDA

The ongoing Doha Development Agenda (DDA) negotiations include negotiations on liberalizing trade in environmental goods, a category that has not been defined but which is likely to include technologies such as wind turbines, solar panels, geothermal energy sensors, fuel cells, electricity meters, and associated parts and components. Paragraph 31(iii) of the DDA also calls upon negotiators to remove barriers to trade in environmental services, but those discussions have not yet progressed very far at all.

There are also negotiations on trade facilitation where the issue of transit is being negotiated to improve the conditions for the transit of goods. For oil and gas exporters, the areas of the negotiations which are likely to be of the most importance concern: the scope of application of the Article V disciplines on transit, the strengthening of provisions on non-discrimination, disciplines on fees and charges, disciplines on formalities and documentation requirements, and regional transit arrangements.

In the ongoing DDA negotiations on industrial tariffs (NAMA), some have put forward proposals for disciplines on export taxes and export restrictions. Recall that Article XI of GATT prohibits export restrictions, but there are no GATT disciplines on export taxes. Wide differences of opinion separate WTO Members on this issue.

Energy services are an important topic in the ongoing services negotiations. In the market-access negotiations, Members have the opportunity to undertake new GATS commitments on a number of energy-related services activities (services incidental to mining, services incidental to energy distribution, engineering, construction, etc.).

In the Rules negotiations, one delegation has proposed prohibiting the provision of input goods (including energy) to domestic production on more favourable terms than the terms under which the goods are exported (so-called 'dual pricing').[10]

10 TN/RL/GEN/135.

4 Energy issues in WTO accessions

Energy may be an important topic, but many of the most important players are still outside of the WTO. Interestingly, several energy-exporting countries (e.g., Algeria, Iran, Iraq, and Russia) are now in the process of acceding to the WTO. It is accordingly in the ongoing accession processes that energy issues have become the most discussed. Recall that, in accessions, WTO Members can impose additional obligations (not included in the WTO treaty) on acceding Members. In all cases, an accession working party is a very informative forum, where the views of existing Members are expressed on all issues of concern with the acceding country. For example, on the transit issue, some Members have expressed concerns with regard to the fees charged for the transit of energy products through pipelines when set in a non-competitive, non-transparent environment contrary to GATT Article V. Others have argued that the differential transport fees on different oil-transit routes conflict with the freedom-of-transit provisions of GATT Article V.

GATS does not oblige Members to liberalise any sector *per se*; specific commitments can be negotiated in chosen sectors. In the accession negotiations on services to date, with the exception of Ukraine, acceding governments have not undertaken any specific multilateral commitments on the liberalisation of their energy sectors. Only some specific commitments have been undertaken and have been recorded in the Schedules of Specific Commitments under mode 3 (commercial presence) of the GATS. Similarly, there is no GATS obligation regarding privatisation and no specific multilateral commitments (including commitments in the energy sectors) have been made by acceding governments on issues relating to state ownership and privatisation, other than the commitment to provide WTO Members with annual reports on the status of privatisation.

Given the inherent complexities of addressing dual pricing through the SCM, there have been efforts to address the practice specifically in the accession processes of energy-producing countries, such as the Russian Federation and Saudi Arabia. The Saudi Arabian accession package incorporates an explicit commitment by an acceding government on energy pricing.

Members have required acceding governments to agree to detailed commitments on state-trading enterprises, fleshing out what they feel are missing details in the wording of Article XVII and its GATT 1994 Understanding.

Members have also systematically examined the regulatory framework governing energy transportation and distribution networks in the context of the investment regime of acceding energy-producing countries. Specifically, the countries of the Commonwealth of Independent States (CIS) have asserted that they consider the transportation of oil, oil products, and natural gas through the pipeline networks (as well as the transmission and distribution of electric energy) to be an activity characterised by the existence of a natural monopoly – i.e., an activity for which the existence of a competitive market is not economically viable.

The case of Ukraine is special. In its Working Party Report, Ukraine's commitment on transit (enforceable through its Protocol of Accession) differs in that it makes a specific reference to 'energy' goods, and, in addition to the standard reference to laws and regulations, it adds 'other measures ... such as those governing charges for transportation of goods in transit' to the list of provisions that would be bound by

the disciplines of GATT Article V.

In its Services schedule, Ukraine's specific commitment on pipeline transportation goes further than commitments undertaken by other new Members in this services sub-sector. To appreciate what Services can add to GATT, consider the additional commitment that Ukraine has taken in respect of pipeline transportation of petroleum products and natural gas.

> Ukraine commits itself to provide full transparency in the formulation, adoption and application of measures affecting access to and trade in services of pipeline transportation. *Ukraine undertakes to ensure adherence to the principles of non-discriminatory treatment in access to and use of pipeline networks under its jurisdiction, within the technical capacities of these networks*, with regard to the origin, destination or ownership of product transported, without imposing any unjustified delays, restrictions or charges, as well as without discriminatory pricing based on the differences in origin, destination or ownership. [My emphasis.]

Ukraine is now pushing other acceding countries to accept the same commitments. This makes sense if we think in terms of a European-wide pipeline network. Generally, one may consider using the language and practice developed in accession protocols as a possible basis for future multilateral negotiations.

5 A few relevant issues that call for more research and thinking

5.1 Export quotas, export taxes, restrictions on export versus restrictions on production

GATT Article XI prohibits export restrictions but does not address production per se. There are no obligations imposed on Members to extract and produce energy resources, and this is where the difficulties lie, as some Members are trying to guarantee their access to supplies of petroleum, natural gas, coal, and uranium in foreign countries. In fact this is somehow what Members are trying to secure-a guaranteed right to purchase hydrocarbons in particular from other Members. More thinking is needed to find out how to better exploit and share natural resources. Could we change the traditional principle of sovereignty over natural resources by a principle that deems such resources world common resources or common goods? In any case, energy resources are clearly ‘natural resources’, and we are already seeing many of the exporters improve their domestic efficiency in use-in line with the requirements of Article XX(g) of the GATT that some members may want to invoke to justify import or export restrictions.

GATT Article XI does not address the issue of export taxes, which are therefore not generally prohibited (subject to specific commitments on accession protocols). Economists would, however, argue that whether in the form of taxes or quotas, export limitations are detrimental to exporting and importing countries. One must wonder whether export taxes can be factually equivalent when at a high enough level. An important dispute has been initiated against some of China's export restrictions on energy goods and natural resources. This dispute should bring some clarity to some of the issues relating to export restrictions and to the specific issue of China's specific commitments concerning the use of such measures that are regulated in its Protocol of accession.

5.2 The transit issue – a goods or services issue?

5.2.1 Transit as a trade in goods issue

An important issue is the scope of application of the GATT transit obligation (on goods) and whether it covers trade by pipelines. Traditionally, Article V applies to transport over land or via inland waterways, rail, road, or barge. Article V states that it is applicable to the 'means of transportation of a good'. Russia and some Members argue that pipelines are not 'means of transportation' because, unlike lorries, trains, or ships, they do not move. On the other hand, some Members have argued that even if train railroad tracks do not move, they support and allow trains to move, and most people would argue that train tracks are an integral part of the means of transportation defining transport by trains. Having said this, the fact that exports of petroleum and natural gas must transit through third countries-say, from Russia to the EU through Ukraine, or from Kazakhstan through Russia to EU-places no obligation on Russia or gas from Kazakhstan to extract and export their hydrocarbons. States are sovereign over their natural resources and unless foreign companies are entitled to establish and invest in the country or unless specific promises to export are agreed, it is difficult to see how foreign governments could be forced to exploit and commercialise their natural resources.

Crude oil and petroleum products have been transported by sea tankers and in trucks for a very long time, but new methods of transporting gas are also being developed, such as specially designed ships for transporting liquefied natural gas (LNG). So it will generally be important to clarify what is meant by 'transportation' in GATT Article V.

In the first dispute panel report on transit in respect to Panama's complaint against Colombia's indicative prices and restrictions on ports of entry (Colombia – Ports of Entry), the Panel found that 'goods in international transit from any Member must be allowed entry whenever destined for the territory of a third country'. It added that, 'a Member is not required to guarantee transport on necessarily any or all routes in its territory, but only on the ones 'most convenient' for transport through its territory'. It also found that the MFN obligation in GATT Article V applied not only when a WTO Member was a transit state (i.e., when the goods were passing through its territory en route to a third country), but also when it was the final destination of the goods. Clearly, the Panel wanted to accord the GATT transit obligation its full potential.

5.2.2 The service transportation issue

The Services dimension of those transportation activities is generally different. It is concerned with issues relating to who will provide the pipeline transportation services, for instance, what national consumers of pipeline service transportation can and cannot do.

Even if transit is essentially an issue relating to trade in goods, there are innovative developments in the context of the 'GATS additional commitments'. It is in the additional commitment of Ukraine that the EU and others tried to secure further market-access obligations. These additional commitments are very similar in essence to the goods transit provision of Article V of the GATT and therefore deal more with the conditions of the passage of the good ('delays, restrictions, charges, pricing', and

'origin, destination and ownership of the product transported') than with conditions of access for consumers of pipeline services. However, to a large extent the two elements are inextricably linked (i.e., a proper non-discriminatory access to a pipeline implies that the goods transported (covered by GATT) are also treated in a non-discriminatory manner). Geography is obviously a key consideration when evaluating the utility of these commitments.

A lot of research and new thinking is needed on the issue of transit-not only to define what is covered by transit, but also how to best discipline the right of passage, apply national-treatment and MFN obligations, process papers and formalities, and tackle the bilateral and RTA transit agreements. All of these issues are now under negotiation in the context of trade facilitation. Since GATT and GATS rules are different, clarifying the applicable disciplines to the various dimensions on trade via pipeline and trade in energy generally will become necessary.

5.3 Subsidies

Energy-related sectors are often highly subsidised. WTO rules on subsidies and countervailing duties are thus especially relevant and may call for new considerations.

5.3.1 Energy-input subsidies and dual pricing

WTO rules do not explicitly directly address the issue of dual pricing of energy products, i.e., the sale of identical products at different prices (domestically and for export). In the context of energy pricing, of course, the concern relates to situations where the domestic price of energy is lower than the export price. Dual pricing per se is not WTO inconsistent-it depends on each system, particularly on how it is operates in fact.

The SCM Agreement has been the principal instrument used to evaluate the WTO compliance of dual-pricing policies of acceding energy-producing countries. To date, the most comprehensive multilateral examination of issues related to trade in energy goods and services has taken place in the Working Parties of the Russian Federation and Saudi Arabia. The Saudi Arabia accession package was the first to incorporate an explicit commitment by an acceding government on energy pricing in the Report of the Working Party.

There is no ambiguity as to the more general proposition that government provision of an input to the production of a traded good for less than adequate remuneration-for example, the sale of electricity or natural gas to domestic consumers at a preferential price – constitutes a subsidy, which if specific, is fully subject to the SCM Agreement. Indeed, there are many examples of countervailing measures being applied on final products on the basis of the provision of subsidised inputs, including energy.[11]

We need to continue to discuss dual-pricing practices, including whether they constitute a subsidy under the SCM Agreement, and whether such subsidies would be

11 See, e.g., Certain Hot-Rolled Carbon Steel Flat Products from Thailand, 66 Fed. Reg. 50410 (3 October 2001) and Pure Magnesium and Alloy Magnesium from Canada, 57 Fed. Reg. 30946 13 July 1992). In both investigations, the US Department of Commerce treated the provision of electricity at preferential rates as a countervail-able subsidy.

WTO consistent. However, two general points can already be made. First, whether the government provision of a good or service, such as an energy input, is a subsidy is to be established in relation to 'prevailing market conditions in the country of provision or purpose', rather than export prices.[12] Second, if a subsidy in the form of a low-priced energy product were generally available within the economy of the subsidizing government (i.e., available without restriction to all users), then, although a subsidy, it would fall outside the scope of the SCM as it would not be 'specific'.

It has also been argued that a dual-pricing scheme can only be maintained through export restrictions, and there have been a number of attempts to treat export restrictions resulting in lower domestic prices as a subsidy. However, one panel has decided that export restrictions are not themselves financial contributions and hence cannot be treated as subsidies (*US – Export Restriction*). The logic here is to invoke in their place export restrictions' disciplines, such as Article XI, discussed above.

5.3.2 Countervailing measures on energy products

The implications of the SCM Agreement are not limited to subsidised energy inputs. Trade in energy and energy-related products can be affected. For example, countervailing measures have recently been imposed by the EC on imported biodiesel, while the US maintains undertakings on uranium from France, Germany, and Italy resulting from countervail cases.[13] As governments increase support for renewable energy and the products needed to generate it, the potential trade impacts and consequent use of countervailing measures may be expected to increase.[14]

5.3.3 Green subsidies (AoA – SCM)

Provisions under Article 8 of the SCM Agreement that deemed certain government assistance non-actionable-including for R&D and to promote adaptation of existing facilities to new environmental requirements-expired at the end of 1999, short of a consensus of Members to extend them as requested by Article 31 of SCM. Numerous commentators have called for the reinstatement of such a provision to provide a safe haven for subsidies for renewable energy or for climate-change mitigation or adaptation.

The WTO Agreement on Agriculture (AoA) is relevant to energy subsidies benefitting agriculture, such as subsidised fuel for farm machinery and subsidised electricity for irrigation, and for energy produced from agriculture. Whether subsidies for the production of non-traded crops (e.g., Miscanthus, switchgrass) that are used as raw materials for biofuel production are covered by the disciplines of the AoA or not is still uncertain. Moreover, while ethanol, the leading biofuel, is covered by the

12 ASCM Article 14(d). The Appellate Body has clarified that, while this usually implies a reference to the prices charged by private providers, reference must be had to alternative benchmarks where the government is the sole or predominant supplier of the input. *US – CVD on Lumber from Canada*, WT/DS257, AB/R, para. 100.

13 *Council Regulation* (EC) No. 598/2009.

14 The use of other contingent trade remedies on energy and energy-related products is also not precluded. Most dramatically, US petitioners have (unsuccessfully) sought anti-dumping (and countervailing) duties on crude oil imports. See Certain Petroleum Oil Products from Iraq, Mexico, Saudi Arabia and Venezuela, 64 Fed. Reg. 44480 (16 August 1999) (petition dismissed for lack of standing).

AoA, biodiesel and bio-jet fuel are not, though any agricultural byproducts from their subsidised production (e.g., oilseed meal) presumably would be.

5.4 Technical standards

The presumption of the TBT Agreement, that domestic standards and regulations should be based on international standards, could become very powerful in the energy debate. Consider, for example, minimum energy performance standards (MEPS), or sustainability standards for biofuels or low-carbon fuel standards. But does this presumption include regional standards? The case law has determined that such standards do not need to have been adopted by consensus; but are there any minimum requirements? Does this presumption cover private standards? If, for instance, a sectoral agreement takes place among the cement industry, can it be presumed to be WTO consistent? if a WTO Member relies on it for its domestic regulation? can it be invoked as evidence of CO_2-related action sufficient and arguably 'comparable' to the one in place in the importing country? How should private standards be treated generally in the climate change and energy debate where they are booming?

5.5 Technology

The development of new technologies, effective access to technology, and appropriate choices in applying technologies is central to the debate about the energy sector, its impact on the environment, and its role in fulfilling development aspirations. The climate change debate epitomises this linkage between energy technology and broader concerns about the environment and equitable access to energy infrastructure. In turn, this debate has led to close scrutiny of the intellectual property system, as a key policy tool influencing innovation and the diffusion of technology, and the international rules on intellectual property protection established in the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Intellectual property law and policy pivots on setting a dynamic balance between fostering innovation and productive investment and technology partnerships through the granting of exclusive rights and facilitating access to the practical fruits of innovation by encouraging its diffusion through licensing and the maintenance of a healthy public domain.

TRIPS captures this policy balance, at the level of general principle, allowing flexibilities for governments to adapt and apply this balance in a manner tailored to their particular development priorities and economic circumstances. An emerging debate, provoked by the sense of urgency in climate change negotiations, is considering whether the TRIPS rules are appropriate and sufficiently flexible to address two main concerns: favouring investment in sustainable, environmentally beneficial energy technologies, and then ensuring equitable access to energy infrastructure, or 'energy justice'. While the TRIPS rules are likely to be found to be broadly effective and sufficiently flexible to enable the necessary international and national policy initiatives to foster and disseminate new, environmentally sound energy technologies, debate will continue over what is the full range of domestic regulatory choices legally available within this general framework, and then over

what choices would achieve optimal policy outcomes – in short, a legal debate over the scope of flexibilities available under TRIPS and a policy debate over how best to deploy those flexibilities.

6 Institutional issues

There are also several institutional issues that must be addressed when considering whether and where to initiate the energy-related discussions and negotiations.

6.1 Is the WTO the right forum?

Would negotiations to develop a new international governance structure for energy have to take place in the WTO? There are existing WTO rules that are applicable today to trade in energy. There are also already aspects of trade in energy that are being negotiated in the trade facilitation (transit) and in the NAMA contexts (export taxes); energy-related services (including pipeline services) are also negotiated at the WTO. Moreover, several basic WTO provisions, including those relating to transit, state trading, subsidies, regulatory controls, and a broad range of energy-related services, already deal directly with energy trade. So, even if new rules on trade in energy were to be negotiated outside the WTO, and even if an international organisation were set up to deal with 'energy' issues, WTO members would still need to develop rules on the relationship between WTO rules and non-WTO rules affecting trade in energy.

The WTO institutional framework is, for some, an appealing forum to initiate trade-in-energy discussions, and its advocates point to the maturity and sophistication of the WTO system. The WTO has established the rule of law among its Members, and the equality of its Members has demonstrated the power of consensus. It has developed extensive practices of notifications and transparency, it is a very inclusive negotiating forum, and its monitoring and surveillance system would be very useful in sectors like energy that bring together multifaceted economic and political issues which dispute settlement cannot always address properly.

Others argue that the WTO is not a forum where technical norms are traditionally negotiated and that the WTO Members and WTO Secretariat staff are traditionally trade experts, not energy experts. One option is for the negotiations to start in another forum, like the OECD (as was the case for government procurement and ship-building) or any new forum. The results of the negotiations could then somehow be 'transferred' to the WTO, or 'taken into account' or 'integrated' into the WTO framework. Such an approach was used with the SPS and TBT presumptions of compatibility in favour of international standards negotiated in an expert forum. This is the sort of linkage that is explored in the ongoing negotiations on the relationship between the WTO and multilateral environmental agreements (MEAs).

One should also bear in mind the limits of the WTO dispute settlement system and its institutionalised system of countermeasures when dealing with some of the potential trade-in-energy disputes. Several energy-exporting countries do not have diversified economies, which means that the energy-importing countries would not have much retaliatory power against a non-compliant energy-exporting country.

Moreover, the retaliation would logically lead to import restrictions on energy-which is the opposite of what energy-importing countries would want. This is true for instance in the relationship between the EU and Russia and other CIS countries over natural gas, for which the EU has few alternative suppliers given the relative 'youth' of LNG as an alternative.

In addition, energy is often under direct or indirect governmental control; this means that we would need to expand the coverage and the reach of the WTO's Plurilateral Agreement on Government Procurement, which at the moment only applies to a fraction of the WTO Membership, and hopefully fully multilateralise it. For the same reasons, the WTO's rules on state trading enterprises would need to be further developed, possibly in line with the language inserted in the recent accession protocols.

Finally, another weakness of the WTO is that there is no comprehensive system of rules on investment or competition, and it is impossible to properly and fully address energy concerns without taking into account those dimensions of energy in international relations today.

6.2 Would there be a need for a new WTO Agreement on energy within the Single Undertaking?

Even if energy-related negotiations were to take place in the WTO, members would need to consider whether a separate WTO agreement on energy is needed. Everybody seems to agree that new definitions and some specific rules for energy would be needed, but where would they be located in the WTO Agreement?

- We could possibly 'add' a new energy agreement that would include a series of specific rules on energy, as was done with the Agreement on Agriculture or the textile agreement in the WTO. Members would also have to decide whether such an agreement should be multilateral or plurilateral. WTO Members could also consider an agreement based on 'critical mass' that is considered final even if not all Members participate in the negotiation but benefit from the MFN application, as Members did with the WTO Telecom Agreement.
- An alternative would be to add energy-specific provisions throughout the existing WTO Agreements, which means an amendment to WTO provisions for which energy-related aspects are added. Such amendments would have to be agreed according to Article X of the WTO Agreement.
- Another approach would be for Members to adopt an 'Interpretation Decision' clarifying how the rules of the WTO apply to some specific energy sectors. This could be adopted by consensus by the General Council-a much simpler process than an amendment.

But one thing is clear. WTO Members would need to take into account the existing case law on the implications of the WTO Single Undertaking whereby Members are expected to comply with all their WTO obligations simultaneously. Therefore, if, for instance, WTO Members want to adopt special rules on subsidies (as they did with agriculture subsidies), they would have to decide collectively on how the new specific rules applicable to energy subsidies would relate to the general rules on subsidies.

The WTO system contains enough institutional flexibilities to allowed its Members to adapt the system fairly easily to meet their pragmatic needs. A good example is the legal route followed to expand the access to medicine. First, in 2001, WTO Members adopted a political Declaration on the TRIPS Agreement and Public Health[15] in which the WTO Ministerial Conference instructed (in paragraph 6 of the Declaration) the Council for TRIPS to find an expeditious solution to the difficulties that WTO Members with insufficient or no manufacturing capacities in the pharmaceutical sector could face in making effective use of compulsory licensing under the TRIPS, for certain very dangerous diseases. Then, after 2 years of intensive negotiations, WTO Members adopted a temporary waiver[16] to the relevant TRIPS provisions. Finally, WTO Members adopted a formal amendment of the TRIPS agreement.[17]

6.3 Relationship with provisions of the Energy Charter and other non-WTO energy provisions

Another issue to be reflected upon is how the more detailed rules of the Energy Charter or of other bilateral or regional agreements containing energy-related provisions would relate to the WTO rules, and how they would be used in the context of a WTO dispute. To what extent could the clarifications contained in the Energy Charter, and in particular in its Transit protocol, be used as part of the historical or legal context in the interpretation of GATT Article V? Some may even argue that, between two signatories, the provisions of the Energy Charter could become applicable law before a WTO panel, while others would clearly oppose such an approach.

7 Conclusions

When thinking of global governance on energy, we know that market mechanisms have proven their value. Markets remain the most efficient way to allocate resources. We know that markets must be governed by transparent and predictable rules. But is the WTO the best forum for discussing and negotiating the main parameters of those regulations? If Members go ahead, do we need a new separate agreement on energy or should we adapt existing WTO to fit better with trade in energy? At the moment it seems that the Doha Development Agenda is too choked to consider adding a new item as large as energy, but afterwards?

One risk is that, if nothing is done, and no negotiations are undertaken anywhere, energy-related tensions could lead to disputes in which the WTO dispute settlement system would have to adjudicate conflicts using just the existing WTO rules, which were not negotiated with the specificities of the energy sector in mind.

At present, Members seem to keep pushing acceding countries to deliver maximum commitments to build a basis of common denominators and an opportunity to shape

15 WT/MIN(01)/DEC/2. Note also that para. 17 of the general Doha Declaration also refers to the specific actions on TRIPS and the separate Decision on TRIPS and health

16 WT/L/540 and Corr.1 1 September 2003.

17 WT/L/641 8 December 2005 – Amendment of the TRIPS Agreement, Decision of 6 December 2005. See *http://www.wto.org/english/tratop_e/trips_e/pharmpatent_e.htm*

the future agenda. Despite this trend, the jury is still out on where those broader energy negotiations should take place.

Whether WTO Members should develop a new framework in the WTO for discussing energy-related issues or not is an open question. But what seems clear is that since there are already several WTO disciplines that are applicable to trade in energy, if states negotiate rules on energy that affecting trade directly or indirectly outside the WTO, they will necessarily have to reflect on how to link the existing energy relevant provisions of the WTO with other non-WTO energy-related provisions. And if such negotiations take place in the WTO, Members will also have to reflect on the implications of the WTO Single Undertaking for that matter.

Finally, and more importantly, 'energy' never disappears completely; it only gets transformed, and this is all the more true with fossil fuels. Indeed, it could be said that our climate situation is largely a consequence of our mismanagement of energy production and management. Energy consumption will need to be reconciled with sustainable growth, and for this to happen we will have to change our way of life. This cannot be done by the WTO, even if, as I personally believe, the WTO evolves to reflect the ever-changing priorities of society.

2. Beyond the WTO: Regional and Bilateral Rules Affecting Energy and Energy Investments

Lawrence L. Herman[18]

1 Introduction

This chapter looks at developments outside the WTO framework that affect energy goods, services and investments, including obligations of states to accord energy investments internationally-recognised standards of treatment. Of particular interest in the context of this volume are the large and growing number of regional and bilateral trade agreements containing rights and obligations affecting energy that are outside the multilateral system. This includes the conclusion of bilateral investment-protection agreements, at what seems to be an accelerating rate.

An important issue for examination is not only the scope of these treaty obligations but also the circumstances under which state regulation can be challenged by energy and resource investors through international arbitration. Some arbitration awards have shed light on the answer to this question and these therefore merit careful attention by the energy business and its advisors. After exploring energy investments and host-state obligations, this chapter also looks at some other issues in regional agreements, beyond those in the WTO Agreement, affecting trade-in-energy goods and services trade, including energy transit, as possible models for post Doha-Round thinking.

This examination finds that jurisprudence outside of the WTO context is developing in a variety of ways, as dispute settlement panel decisions and arbitration awards are rendered under these bilateral and regional treaties. The challenge for the international community is, somehow, to try to ensure consistent application of these rules so that the integrity and authority of the multilateral system is not weakened.

2 Regional trade agreements and the rules of the GATT

Regional trade agreements ('RTAs') have proliferated outside of the WTO system in recent years. Numerous articles and scholarly papers have documented them and analyzed their significance in relation to the multilateral regime embodied in the

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General Agreement on Tariffs and Trade (GATT) and the WTO Agreement.[19] Given the continuing prominence of these RTAs, questions arise as to how rules applied in the regional context might influence future WTO negotiations and interpretations of WTO rules by panels or by the Appellate Body. While this is a large subject outside the scope of this paper, the issue is a critical one, as RTAs continue to emerge and as these dispute settlement bodies develop their own 'extra-WTO' jurisprudence.

The most prominent RTA, of course, is the Treaty of Rome and the multitude of subsidiary instruments, regulations, and directives making up the EU, with its common external tariff and removal of border restrictions among member states (although the EU is an institution of quasi-sovereign status involving much more than a classic trade agreement). This note does not intend to deal with EU institutions and its myriad of internal market regulations, since those are covered in abundant literature elsewhere. The focus of this article is on more typical trade and customs agreements and their close cousins, bilateral investment-protection agreements.

Among key RTAs is the MERCUSOR, a regional trade and customs agreement formed by the Treaty of Asuncion in 1991. There are no specific energy chapters in MERCUSOR or in its subsidiary treaties. However, as both tariffs and non-tariff barriers (NTBs) are reduced, and in some cases eliminated, under the treaty's trade liberalisation measures, MERCUSOR ensures that energy goods and services flow among the parties without restriction. The European Free Trade Association (EFTA) and The Caribbean Community are RTAs that follow similar approaches. They do not address specific sectors or industries but apply tariff preferences and GATT-based most-favoured-nation (MFN) non-discrimination rules across the board to all goods, including energy.

The ASEAN FTA is of interest in that one of its subsidiary agreements, the Framework Agreement on Enhancing ASEAN Economic Cooperation (Singapore, 1992), includes commitments among members to enhance cooperation in energy, including energy planning, information exchanges, research and development, and the exploration, production, and supply of energy resources. The Framework Agreement is a soft set of commitments, falling short of hard legal rules. However, there are useful ideas here in terms of prescribing standards of regional cooperation in energy that could serve as models in future international examination of energy issues.

While this sketchiest of reviews cannot do justice to the importance of these issues, it at least underscores the point that these 'extra-WTO' trade agreements – partly in response to the stalled Doha Round and the difficulty of getting consensus on major opening of markets for goods, services, and investments – will inevitably impact the multilateral system. As governments respond to pressures to resolve trade and investment concerns through discrete agreements as a more expedient route, it comes as no great revelation that this places increased strains on the multilateral system.

19 There are far too many to cite here. However, for a good review of these RTAs and their compatibility with the WTO Agreement, see: Bartels, L. and Ortino, F., *Regional Trade Agreements and the WTO Legal System*, Oxford University Press (2006); Crawford, J. and Fiorentino, R., 'The Changing Landscape of Regional Trade Agreements', Discussion Paper No. 8, WTO 2005. As that study points out, as of 2005 there were 170 RTAs notified to the GATT/WTO that were in force.

3 NAFTA and the Energy Charter Treaty

Chapter 6 of the NAFTA (Energy and Basic Petrochemicals) contains a series of GATT-inspired legal obligations for the treatment of trade in energy and basic petrochemical goods and cross-border trade in services associated with such goods. While not specifically stated, the purpose of Chapter 6 is to move the three Parties towards a single North American energy market. Subject to limited exceptions, the NAFTA incorporates all GATT rights and obligations to North American trade in energy goods and services. Export restrictions are permitted in accordance with Article XI and Article XX of the GATT, but subject to a proviso that guarantees a proportion of supply to importing NAFTA members. In terms of internal 'energy regulatory measures', GATT non-discrimination requirements apply.

The Energy Charter Treaty (ECT) is unique as a stand-alone treaty that is specific to the energy sector and therefore highly significant in any examination of the development of rules and disciplines outside the WTO context.[20] The underlying purpose of the ECT is to ensure Western European states security of supply of energy (notably natural gas from Russia) in exchange for obligations respecting border treatment of exports and investments. ECT provisions are based on the GATT/WTO pillars of non-discrimination, national treatment, prohibition of export and import restrictions, and access to markets on an open and transparent basis. These cover: i) Protection of foreign investments, based on the extension of national-treatment or MFN treatment (whichever is more favourable), ii) free trade in energy through non-discriminatory conditions for trade-in-energy materials, products and energy-related equipment, iii) freedom of transit through pipelines and grids, iv) promotion of energy efficiency and minimizing the environmental impact of energy production and use, and v) resolution of disputes between participating states, and – in the case of investments – between investors and host states.[21]

On investments, the ECT breaks new ground in setting out sector-specific obligations on the part of host States respecting investments related to 'Energy Materials and Products.'[22] Article 26 creates investor-state dispute settlement provisions modelled on NAFTA Chapter 11, allowing an investor to invoke binding rules under the ICSID or UNCITRAL Rules or, additionally, under the Arbitration Institute of the Stockholm Chamber of Commerce. We will return to these investment provisions below, in discussing developments in investment arbitration

20 There is a vast amount of material published on the ECT, some of which is cited below. The legal documents comprising the Treaty can be found in *The Energy Charter Treaty and Related Documents*, published by the Energy Charter Secretariat (2004), at: *www.encharter.org*.

21 Konoplyanik, Andrei and Wälde, Thomas, 'Energy Charter Treaty and its Role in International Energy', (2006) 24 *Journal of Energy & Natural Resources Law* 523 at 529.

22 As summarised on the website of the Energy Charter Secretariat:
'The investment provisions of the Treaty aim to promote and protect foreign investment in member countries. To this end, the Treaty grants a number of fundamental rights to foreign investors with regard to their investment in the host country. Foreign investors are protected against the most important political risks, such as discrimination, expropriation and nationalisation, breach of individual investment contracts, damages due to war and similar events, and unjustified restrictions on the transfer of funds. The dispute settlement provisions of the Treaty, covering both state to state arbitration and investor-state dispute settlement, reinforce these investor rights'. ECT website, *www.encharter.org*.

awards in the ECT context. What is important to signal at this juncture is that investment disputes and trade disputes are increasingly intertwined and that, inevitably, jurisprudence in investment disputes will have a bearing on application of the rules governing the international trading system.

4 Transit rights and energy

The GATT transit provisions in Article V were written for movement of hard goods under an earlier time with different circumstances when trade in energy goods and services was less of an issue. GATT Article V allows the transit state to apply reasonable charges and regulations 'having regard to the conditions of the traffic', provided that 'all charges, regulations and formalities in connection with transit' are applied on an MFN basis. The provisions prevent one WTO member from interfering with freedom of transit of energy goods from another member 'via the routes most convenient for international transit'.

Article V contains no national-treatment requirement, however, and, as worded, means that energy goods in transit can be subject to a range of measures that are more onerous than those applicable to local goods. Moreover, the MFN obligation deals only with 'charges, regulations and formalities in connection with transit' and leaves open the possibility of discriminatory measures respecting grid and distribution access.

There are a number of other uncertainties in Article V. First, transit requirements cannot be so onerous as to derogate from the primary freedom-of-transit rule and any charges and regulations must be 'reasonable, having regard to the conditions of the traffic'. There may be a point where these become genuinely restrictive and interfere with the right of transit. In the case of environmentally sensitive energy goods, for example, at what point does the right of the transit state to control and regulate environmental concerns run up against the primary right of the sending state to transit freedom?

Securing more robust transit rights than GATT Article V was one of the main objectives of the ECT, a factor of paramount importance given the geographic situation of many Western and Central European States in relation to energy supplier countries.[23] Article 7, paragraph (1), states that ECT Contracting Parties

> ...shall take the necessary measures to facilitate the Transit of Energy Materials and Products consistent with the principle of freedom of transit and without distinction as to the origin, destination, or ownership of such Energy Materials and Products or discrimination as to pricing on the basis of such distinctions, and without imposing any unreasonable delays, restrictions, or charges.

Article 7, paragraph (3) provides that in respect to the use of 'Energy Transport Facilities', each Party shall treat energy materials and products in transit 'in no less favourable a manner than its provisions treat such materials and products originating in or destined for its own Area, unless an existing international agreement provides

23 Konoplyanik, A and Wälde, T, 'Energy Charter Treaty and its Role in International Energy', (2006) 24 *JENRL*, *supra*, at p. 543.

otherwise.' The ECT thus creates firm obligations on ECT members to authorise and facilitate energy transit, including what has been described as a 'soft' obligation to favour the construction of new facilities, to abstain from unwarranted closure of transit facilities (e.g., for political reasons), and to make sure state and private transit operators do not undermine that obligation.[24]

The NAFTA applies GATT to trade in energy goods but contains nothing beyond GATT Article V in terms of transit. The ASEAN FTA transit provisions apply to trade in goods and to road, rail, and air transit, without any special reference to energy goods *per se*. Likewise, there are no specific energy transit provisions in MERCUSOR or EFTA. Detailed directives are in force in the EU respecting transit obligations of energy among member States, however, that is a matter of internal market regulation by the Commission and not an international trade obligation in the sense addressed in this note.

Given the increased importance of access to and transit of energy resources in various regional contexts, the question arises whether governments should examine better and more concrete obligations (and rights) in this domain, building on GATT Article V, with reference to regional precedents, including the NAFTA and particularly the Energy Charter Treaty. This entire subject of energy transit would seem to be worthy of post-Doha Round examination by governments.

5 Bilateral investment treaties and energy

We now turn to the interesting issue of bilateral investment treaties ('BITs'), sometimes called international investment agreements ('IIAs') or foreign investment protection agreements ('FIPAs'). These treaties set down standards of treatment for foreign direct investment and, like the NAFTA and the ECT, establish frameworks for settling disputes where the host State fails to live up to those obligations.

Whether styled as FIPAs, IIAs or BITs, these treaties ensure that foreign energy sector investors will not be treated worse than similarly situated domestic investors or other foreign investors, that they will not have their investments expropriated without prompt and adequate compensation, and that they will not be subject to less than a minimum standard of treatment, often referred to as the 'fair and equitable treatment' standard. Many follow the NAFTA and ECT, although other bilateral models are current, including those based on one developed within the OECD.[25]

The impact of these treaties on international trade in the energy sector cannot be ignored. Arbitration panels are dealing with the application of standards of host-state

24 Konoplyanik, A. and Wälde, T., *ibid.*, p. 543. As discussed by the authors, ECT members are aiming to enhance the treaty's transit provisions through the conclusion of a Transit Protocol in order to put in place 'a regime of commonly accepted operations principles covering transit flows of energy resources, both hydrocarbons and electricity, crossing at least two national boundaries, designed to ensure the security and non-interruption of transit'. Op. cit., 544.

25 For a useful summary of the contents and the terms of BITs, see: *UNCTAD, Investment Agreements On-Line, www.unctadxi.org*. UNCTAD has been monitoring the increase in the number of bilateral treaties for the promotion and protection of foreign investment (BITs). The number of BITs increased dramatically during the 1990s. Their number rose from 385 in 1989 to a total of 2,265 in 2003. They now involve bilateral relations among 176 countries, virtually every State on the planet.

treatment affecting some of the most important areas of capital flows into resource and energy development and, directly and indirectly, transnational business in these sectors. One of the more interesting issues in application of these treaties is the way panels are applying rules regarding 'fair and equitable treatment' and 'full protection and security', terms widely used in these treaties.

5.1 Fair and equitable treatment standard in regional treaty regimes

The concept of 'fair and equitable treatment' – and the related notion of 'full protection and security' – is largely a post-World War II development. Reference to these terms is found in the 1948 Havana Charter and a number of draft conventions that evolved since, including the 1967 draft OECD Convention on the Protection of Foreign Property, the draft United Nations Code of Conduct on Transnational Corporations and number of other international drafting initiatives.[26] Later efforts by the OECD to consolidate these in a multilateral agreement on investment ('MAI') in the 1990s foundered, largely because of the public controversy over the right of foreign investors to invoke binding arbitration against governments. However, before that exercise folded, the 1998 draft contained a provision that codified previous efforts, stating,

> Each Party shall accord *fair and equitable treatment and full and constant protection and security* to foreign investments in their territories. In no case shall a contracting party accord treatment less favourable than that required by international law. [emphasis added]

The MAI formulation, in fact, is very close to the words used in NAFTA Article 1105:

> Each Party shall accord to investments of investors of another Party treatment in accordance with international law, *including fair and equitable treatment and full protection and security.*[27] [emphasis added]

The ECT investor-State provisions are modelled on Chapter 11 of the NAFTA, with more expansive (some would say confusing) wording in Article 10, which provides:

> Each Contracting Party shall, in accordance with the provisions of this Treaty, encourage and create stable, equitable, favourable and transparent conditions for Investors of other Contracting Parties to make Investments in its Area. *Such conditions shall include a commitment to accord at all times to Investments of Investors of other Contracting Parties fair and equitable treatment*. Such Investments shall also enjoy the most *constant protection and security* and no Contracting Party shall in any way impair by unreasonable or discriminatory measures their management, maintenance, use, enjoyment or disposal. In no case shall such Investments be accorded treatment less favourable than that required by international law, including treaty obligations. Each Contracting Party shall observe any obligations it has entered into with an Investor or an Investment of an Investor of any other Contracting Party. [emphasis added]

26 The history of these efforts and a useful analysis of the jurisprudence is provided in an OECD report in *Fair and Equitable Treatment Standard in International Investment Law*, OECD Working Papers on International Investment, 2004/3, September 2004: *www.oecd.org*.

27 NAFTA also contains obligations of NAFTA Parties regarding non-discrimination and to ensure that expropriation of investments can only be for a public purpose, with due process and followed by prompt and effective compensation.

Other multilateral instruments contain references to the 'fair and equitable' standard, including the 1994 Colonia Protocol signed by MERCUSOR member-states and the 1987 ASEAN Treaty for the Promotion and Protection of Investments. Like the NAFTA, these provisions apply across the board. While offering protection to investors in all sectors, they provide these important procedural and substantive rights equally to energy investors and are of value for that reason.

It is obvious to any lawyer that, with these various formulations, there remains uncertainty as to whether 'fair and equitable treatment' is an objective standard based on public international law or a more pragmatic, flexible, and subjective standard based on the circumstances and context of the particular treaty. As noted in a study of investment treaties by UNCTAD (2007),

> According to some scholars, the obligation to grant foreign investment 'fair and equitable treatment' is not different from the obligation to treat investment in accordance with the international minimum standard . . . According to other scholars, however, 'fair and equitable treatment' means something different from the international minimum standard. On this view, the term 'fair and equitable treatment' should be given its plain meaning. This results in a case-by-case application of a test based on equity in order to determine whether the standard has been infringed.[28]

This conundrum is illustrated by recent awards and the debate in legal academic circles over different approaches to application of the term and its proper scope in international law.[29] Presently, we will see how this debate has played out in some important arbitration decisions that have had to deal with this issue.

IIAs, FIPAs and BITs, no matter what they are called, include similar obligations on minimum standards of treatment, and ensure, as in the ECT and the NAFTA, 'fair and equitable treatment' and 'full protection and security'. As in the case of the multilateral treaties just reviewed, these terms are sometimes linked to the phrase, 'in accordance with customary international law', which implies reference to an objective, external standard.[30] Whatever the formulation, the effect is to provide a legally enforceable floor, ensuring that host-state treatment will not fall below minimum standards, whether they are grounded in the treaty itself or externally referenced to customary international law.[31]

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28 *Bilateral Investment Treaties, 1995-2006: Trends in Investment Rulemaking* (UNCTAD, United Nations, New York and Geneva, 2007, p. 28).

29 A very thoughtful analysis of the variety of formulas and interpretations of the fair and equitable standard under rules of treaty interpretation can be found in Hird, R. A., 'Thomas Wälde and Fair and Equitable Treatment', (2009), 27 *Journal of Energy & Natural Resources Law* 377.

30 For example, the U.S. Model Bilateral Investment Treaty (2004) and a number of recently-concluded US FTAs provide that 'Each Party shall accord to covered investments treatment in accordance with customary international law, including fair and equitable treatment and full protection and security.' (*Fair and Equitable Treatment Standard in International Investment Law,* OECD, *supra*, p. 12.) Canada's model FIPA uses similar words that link fair and equitable treatment of an investment to a minimum standard or 'floor' level of treatment below which state actions cannot fall: *www.dfait-maeci.gc.ca/tna-nac*.

31 Most FIPAs and BITs provide for dispute resolution where an investor alleges that the host state has not lived up to these treaty obligations. A common approach is to provide for arbitration under the International Convention on the Settlement of Investment Disputes (ICSID) or using the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

5.2 Scope of 'Fair and Equitable Treatment'

The incorporation of a minimum level treaty obligation ensures an *objective* element for energy investors, absent in the *relative* standards of non-discrimination and national treatment derived from the GATT and the WTO Agreement. The OECD study, referred to earlier, states that,

> The obligation to provide 'fair and equitable treatment' . . . is an 'absolute', 'non-contingent' standard of treatment, i.e., a standard that states the treatment to be accorded in terms whose exact meaning has to be determined, by reference to specific circumstances of application, as opposed to the 'relative' standards embodied in 'national treatment' and 'most favoured nation' principles which define the required treatment by reference to the treatment accorded to other investment..[32]

One of the challenges here is to define the content of that absolute standard and determine whether, in any given case, the terms are autonomous (i.e., determined by the specific investment treaty or agreement) or incorporate or are linked to an international law norm that exists outside the treaty itself. Some arbitral awards confine 'fair and equitable' to the four corners of the particular treaty in the absence of language that incorporates customary international law. Others have looked beyond the treaty to external norms where the words 'in accordance with customary international law' are employed.[33]

The reference to customary international law raises additional challenges of interpretation as to what that standard is and how state action should be judged in relation to that standard. To put it another way, if the fair and equitable concept refers to a minimum standard recognised under customary international law, is that standard frozen in time, or has it evolved to take into account changing notions of acceptable conduct on the part of governments? Some clarification is provided by arbitration decisions under the ECT and the NAFTA and ICSID awards under various investment protection agreements.[34]

Few of the twenty-odd investor-state cases under the ECT have proceeded to conclusion and, unfortunately, the few that have been decided have not been made public.[35] However, the recent ECT award in *Plama Consortium v. Bulgaria*[36] is available and sheds light on the scope of the 'fair and equitable treatment' obligation under ECT Article 10. In this case, the claimant argued that the government of Bulgaria and various State agencies frustrated the refinancing of a bankrupt lubricant-producing refinery, thereby decimating its investments and effectively expropriating its assets. Rejecting these claims, the tribunal found that the regulatory proceedings in Bulgaria to be within the bounds of what is fair and equitable under the circumstances.

32 *Fair and Equitable Treatment Standard in International Investment Law*, OECD, *supra*, p. 2.
33 *American Manufacturing & Trading (AMT)(US), Inc. v. Zaire*, ICSID Case No. ARB/93/1, Award 21 February 1997; *Alex Genin, Eastern Credit Limited, Inc. and A.S. Baltoil (US) v. Estonia,* ICSID Case No. ARB/99/2.
34 A compendium of recent ICSID investment arbitration awards under these BITs or IIAs can be found in UNCTAD's most recent report, *Latest Developments in Investor-State Dispute Settlement*, IIA Monitor No. 1 (2008), UNCTAD/WEB/ITE/2008/3.
35 See the heading 'Investor-State Disputes' on the ECT website at: *www.encharter.org*.
36 Award, 27 August 2008: ICSID Case No. ARB/03/24.

Refusing to be drawn into considerations of customary international law, the tribunal stated that, 'a balanced interpretation which takes into account the totality of the Treaty's purpose is appropriate.'[37] With respect to the fair and equitable treatment obligation under ECT Article 10, it concluded that,

> The stability of the legal framework has been identified as 'an emerging standard of fair and equitable treatment in international law'. However, the State maintains its legitimate right to regulate, and this right should also be considered when assessing the compliance with the standard of fair and equitable treatment.[368]

With respect to the full protection and security under Article 10 of the ECT, rejecting the claimant's arguments here as well, the tribunal said that, 'the standard is not absolute and does not imply strict liability of the host State.'[39]

Reading the *Plama* award, it seems that the tribunal wished to not be drawn into an examination of customary international law doctrine. Instead, it opted for a pragmatic, teleological approach, defining Bulgaria's obligations by reference to the words in the ECT as used in their context, in perfect accord with the Vienna Convention rules.[40] The result is that, in the ECT context at least, the obligation of fair and equitable treatment and full protection and security is to be applied as an autonomous treaty obligation based squarely on the treaty context and purpose and without reference to an external or 'objective' customary international law norm.

Several NAFTA arbitration awards have also dealt with the relationship between treaty obligations and customary international law. Not all are consistent in their legal reasoning. As noted in the OECD study referred to earlier, however, no NAFTA award confines the notion of 'fair and equitable treatment' to an autonomous standard within the NAFTA itself.[41]

The recent NAFTA arbitration award in *Glamis Gold v. United States*[42] is illustrative

37 *Ibid*., para, 167, following the views of the arbitration tribunal in *El Paso Energy v. Argentina*, ICSID Case No. ARB/03/15, Decision on Jurisdiction, 26 April 2006.

38 *Ibid*., para. 177. Referring to *CMS v. Argentina*, the tribunal accepted the following proposition: 'It is not a question of whether the legal framework might need to be frozen as it can always evolve and be adapted to changing circumstances, but neither is it a question of whether the framework can be dispensed with altogether when specific commitments to the contrary have been made. The law of foreign investment and its protection has been developed with the specific objective of voiding such adverse legal effects.' [*CMS Gas Transmission Company v. Argentina*, Award of 12 May 2005, ICSID Case No. AR/01/8, para. 277.]

39 *Ibid*., para. 181.

40 Article 31 of the *Vienna Convention of the Law of Treaties* (1969), oft-quoted in international adjudications, contains the well-known provision that a 'A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.'

41 *Fair and Equitable Treatment Standard in International Investment Law*, OECD, *supra*, p. 17. See, for example, the NAFTA awards in *Metalclad Corp. v. Mexico,* ICSID Case No. ARB(AF)/97/1, Award 2 September 2000; *ADF Group v. United States*, ICSID Case No. ARB(AF)/00/1, Award, 9 January 2003; *International Thunderbird Gaming Corp. v. Mexico*, Award, 26 January 2006.. It should be noted that the NAFTA Free Trade Commission issued an interpretative note in 2001 stating that the concepts of 'fair and equitable treatment' and 'full protection and security' do not require treatment in addition to or beyond that which is required by minimum standard under customary international law. *www.dfait-maeci.gc.ca*.

42 ICSID Arbitration Award, May 2009, available at *http://www.state.gov/documents/organisation/110307.pdf*.

of this approach. Glamis, a Canadian mining company, claimed that newly enacted Californian regulations requiring mining companies to backfill and grade their excavations, plus Federal government delays in issuing mining approvals, among other things, breached the fair and equitable treatment obligations in NAFTA Article 1105. The tribunal undertook a close examination of the 'fair and equitable' doctrine and its evolution under customary international law. At the end, it dismissed Glamis' case, finding that none of California's actions nor those of the US federal government crossed the requisite threshold.

A number of previous NAFTA awards had found that the standard was not static but had evolved over time and, as stated in *ADF v. United States*, was 'constantly in a process of development'.[43] The *Glamis* award took a different approach. It noted that there was no disagreement between the parties that the requirement of fair and equitable treatment in NAFTA Article 1105 incorporated the customary international law minimum standard.[44] However, as stated by the tribunal,

> The question thus becomes: what does this customary international law minimum standard of treatment require of a State Party vis-à-vis investors of another State Party? Is it the same as that established in 1926 in *Neer v. Mexico*? Or has the Claimant proven that the standard has 'evolved'? If it has evolved, what evidence of custom has Claimant provided to the Tribunal to determine its current scope?[45]

Embarking on its examination, the Tribunal noted that, '[t]he customary international law minimum standard of treatment is just that, a minimum standard. It is meant to serve as a floor, an absolute bottom, below which conduct is not accepted by the international community.'[46] After reviewing developments, the tribunal held that the claimant had not proven that the standard had changed since 1926 and, based on the *Neer* doctrine,[47] required a measure to be 'egregious and shocking', citing as examples a 'gross denial of justice, manifest arbitrariness, blatant unfairness, a complete lack of due process, evident discrimination, or a manifest lack of reasons'. As stated by the tribunal, '[t] the fundamentals of the Neer standard thus still apply today.'[48]

43 *ADF Group v. United States, supra*, para. 179. Other NAFTA investment awards under Chapter 11 also make reference to the 'evolutionary character of international law'. See also: *Mondev International v. United States*, ICSID Case No. ARB(AF)/99/2, Award, 11 October 2002, para. 116. Interestingly, while both the *ADF* and *Mondev* awards accepted the evolutionary theory, both dismissed the claims as not having shown that governmental actions crossed the required threshold.

44 The NAFTA Free Trade Commission (made up of trade ministers of the three governments) had issued an earlier binding note of interpretation on 31 July 2001, stating that 'Article 1105(1) prescribes the customary international law minimum standard of treatment of aliens as the minimum standard of treatment to be afforded to investments of investors of another Party'.

45 *Glamis Gold v. United States, supra*, Award, para. 600.

46 *Ibid*., para. 615.

47 *Neer v. Mexico*, 4 Rep. Int'l Arb. Awards 60 (15 October 1926).

48 *Glamis Gold v. United States, supra*, Award, para. 616.

5.3 Arbitration awards under other BITs/FIPAs

A word should be said about investment awards under other bilateral investment treaties. While there are several that accept the 'objective' international law minimum standard,[49] others apply an autonomous and subjective standard under the treaty itself. For example, in *Tecmed v Mexico*[50], an award under an investment treaty between Spain and Mexico, the tribunal applied an autonomous treaty standard in accordance with the ordinary meaning of the words in their context, as opposed to a incorporating an external, customary international law norm.

Other BIT and IIA awards vary in the articulation of the requisite standard, depending on the formulation in the treaty. While the choice of words is not always as precise as it could be, several awards apply an autonomous standard within the context of the treaty as opposed to struggling with identifying the applicable customary international law rule.[51]

The point of this examination is to show that energy and resource investors can draw some comfort from regional and bilateral investment agreements that provide defined (or 'absolute') standards protection, in contrast to the 'relative' standards inherent in the national-treatment and MFN rules. However, formulations in these treaties vary, and where the minimum international law standard has been incorporated, judging from *Glamis Gold* and a number of other NAFTA awards examined in this note, the very high bar of the *Neer* doctrine ('shocking and egregious') continues to apply.

The *Glamis* case is not the last word, of course. The award is confined to the NAFTA context and even within the NAFTA, awards are not precedents in the sense of stare decisis and future panels may disagree. That being said, governments may want to better define what they intend when the term 'in accordance with customary international law' is employed in these agreements.

6 Conclusions

This brief *tour d'horizon* of treaty rules affecting energy trade and investment outside the WTO context results in a number of issues for consideration in the post-Doha Round context.

1. Regional and bilateral trade agreements are proliferating outside the WTO Agreement. Many incorporate GATT and WTO Agreement-type rules and disciplines and assure open markets in the movement of energy goods, services and investments, even when energy is not singled out in these agreements for special treatment.

2. Even though these RTAs and FTAs typically incorporate multilaterally agreed norms and standards, some attention is warranted to analyzing their consistency, both in formulation and application, and the extent to which that they conform to the basic rules of the multilateral system.

49 *Fair and Equitable Treatment Standard in International Investment Law,* OECD, *supra*, p. 13, et seq.
50 *Técnicas Medioambientales Tecmed S.A. v. Mexico*, ICSID Case No. ARB(AF)/00/2, Award, 29 May 2003.
51 For example, *American Manufacturing and Trading v. Zaire,* ICSID Case No. ARB/93/1, Award, 21 February 1997.

3. In addition to RTAs and FTAs, bilateral investment protection agreements (variously called FIPAs, BITs, IIAs) are growing in number, with possibly as many as 2,500 worldwide. The prominence of these investment agreements, which are also outside of the WTO orbit, has implications for the energy sector and for cross-border capital flows into energy-related projects.
4. Recent investment arbitration awards under these agreements, which are ad hoc in nature, have dealt with the kind of minimum standard of behaviour required of host States and thereby has direct implications for the energy sector. These awards are not necessarily consistent, however.
5. This may warrant further analysis and the need for some kind of agreed criteria – perhaps through protocols or interpretative notes issued by the Parties to the particular RTAs or BIT/FIPAs – as to the kinds of state actions that will be deemed contrary to treaty obligations. These criteria, even by way of an illustrative list, could assist future panels in applying the 'fair and equitable' doctrine in concrete instances.

3. New Rules for the Environmental Imperative: Considerations for the Energy Sector and Interaction with WTO Rules

Ana Maria Kleymeyer[52]

This chapter addresses the international context and rules relating to climate change-the dominating environmental issue of the moment-with a focus on those that relate to trade and the energy sector. I will lay out the general nature and array of options for rules under debate in the ongoing global negotiations for a new agreement to address climate change. Considering the singularity of the international climate agreements in their scope and approaches to implementation, the chapter will attempt to sketch the context for these agreements and their evolution. It will further explore the interaction with other international agreements, in particular those that deal with trade rules within and beyond the WTO.

1 Introduction: a brief history of environmental agreements

Following decades of debates and growing scientific evidence, countries have forged a broad array of multilateral agreements in response to many of the world's environmental problems. These agreements cover issues as broad and varied as biodiversity, desertification, ozone depletion, endangered species, hazardous waste, and the use of transboundary waters, among others. Most are 'living' treaties that are subject to continued negotiation in order to strengthen and guarantee their effectiveness. They have had differing degrees of success in reaching their objectives, due primarily to the structuring of instruments, institutional arrangements, and available financial support for their implementation, as well as to their breadth of scope. Despite their substantive diversity, they have at least one thing in common-their anthropogenic causes. This common thread ties each, in its own way, to the human activities that affect them and, consequently, to the regulation of human behaviour necessary to prevent further harm.

The Rio Earth Summit in 1992 launched three seminal environmental treaties: The United Nations Framework Climate Change Convention (UNFCCC), the UN Convention on Biodiversity (CBD), and the Convention to Combat Desertification (CCD). The UNFCCC emerged in response to the First Assessment Report, published in 1989, of the Intergovernmental Panel on Climate Change (IPCC), the first intergovernmental scientific body tasked with evaluating the risks posed by climate change and their human causes.[53]

52 Senior Advisor, International Centre for Trade and Sustainable Development.

53 IPCC First Assessment Report 1989, available at *http://www.ipcc.ch/publications_and_data/publications_and_data_reports.htm#1* . The IPCC was created by the World Meteorological Organization (WMO) and the United Nations Environmental Program (UNEP).

Recent years have witnessed a steep rise in global concern about climate change as a result, primarily, of additional scientific information regarding its causes and projecting its impacts. From early controversy surrounding the science, the 2007 IPCC Fourth Assessment Report has since concluded that evidence of climate change is now 'unequivocal'.[54] Political leaders characterise the climate crisis as one the world's greatest challenges and as 'the preeminent geopolitical and economic issue of our era', while leading economists consider it the 'greatest market failure the world has ever seen'.[55]

2 Basic background on the climate agreements

The United Nations Framework Convention on Climate Change (UNFCCC) is the foundational treaty addressing climate change.[56] Its primary objective is to stabilise atmospheric concentrations of greenhouse gases (GHGs) in order to avoid 'dangerous anthropogenic interference' with the climate system. This objective has three guiding conditions. Global action to address climate change should: i) be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, ii) ensure that food production is not threatened, and iii) enable development to proceed in a sustainable manner.

The UNFCCC provides the primary overarching framework for international cooperation on climate change. Guided by its ultimate objective and principles, the Convention establishes commitments for parties in order to achieve emissions reductions and support adaptation to climate change.

In broad brushstrokes, the Convention holds that all countries shall contribute to addressing climate change, that developed countries shall take the lead and provide finance and technology to assist developing countries in their efforts to mitigate and adapt to climate change, and that developing countries have common but differentiated responsibilities based on their national circumstances.

The most noteworthy guiding principles of the Convention include: equity (full consideration of specific needs and special circumstances of developing country parties, especially the most vulnerable), acceptance that lack of full scientific certainty is not a basis to postpone action, the importance of cost-effectiveness of policies and measures, the right of parties to pursue their sustainable development, and due attention to avoiding unjustifiable discrimination or disguised restrictions on trade.

To this day, the Convention is considered by most of its members to represent an equitable framing of the problem and its global solutions, as it distinguishes between the responsibilities of developed and developing country parties. All parties are required to contribute to climate mitigation. But developed countries must do more,

54 Intergovernmental Panel on Climate Change, *Fourth Assessment Report, Climate Change 2007*.

55 Ban Ki-moon, UN Secretary General, Opening Statement at the United Nations Climate Change Summit, 23 September 2009; Energy and Climate Declaration, Major Economies Forum at the Group of Eight Summit, L'Aquila, Italy, July 2009; Stern Review: The Economics of Climate Change, Summary of Conclusions, at page viii, available at: *http://www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm*

56 United Nations Framework Convention on Climate Change, entry into force 1994, available at *http://unfccc.int/resource/docs/convkp/conveng.pdf*

in terms of both mitigation and support for developing countries' mitigation and adaptation efforts through provision of financing and technology. Developing countries, 'in accordance with their common but differentiated responsibilities and respective capabilities', have obligations that are tempered by their national circumstances resulting in a lesser degree of historic and economic responsibility. This issue, as straightforward as it may seem, is the fulcrum of much controversy in climate debates. The rapid increase of emissions from the largest economies among the developing countries, coupled with a clear message from the IPCC that developing countries must also curb their emissions in order to avoid tipping points for abrupt climate change, beg the question of how and how much developing countries will mitigate while, as granted by the Convention, continuing to sustainably develop. As developing countries' development objectives are considered in the determination of their contribution to global efforts, parties struggle over how to articulate new solutions that maximise efforts as they somehow allocate political and, especially, financial responsibility.

Principles related to policies and measures and regard for trade impacts have gained attention in recent discussions at the national and international levels as countries explore new additional approaches to mitigate nationally. This issue is further discussed below.

The UNFCCC has several institutions that addressing the array of issues related to climate change, including its Subsidiary Body for Scientific and Technical Assessment (SBSTA) and its Subsidiary Body for Implementation (SBI). The 'SB's cover issues from finance to forests and craft decisions for approval at the annual Conference of the Parties (COP).

The Convention also establishes the Annexes that define groups of countries based on economic development factors, as follows:

1. Annex I countries are industrialised nations, including most countries in the Organisation of Economic Cooperation and Development (OECD) plus Eastern and Central Europe and Russia, also known as Economies in Transition (EIT).
2. 'Non-Annex I' countries include all developing nations.
3. Annex II countries are those OECD countries which have financial-, technology-, and capacity-building commitments for support to developing countries under the Convention, above and beyond the EITs.

The UNFCCC is a framework to *encourage* global action on climate change. It does not, however, set out specific measures, targets, or mechanisms to do so. Within three years of the Convention's entry into force, therefore, nations adopted the Kyoto Protocol (KP) to provide greater specificity on emissions reduction *commitments* for industrialised nations (Annex I Parties).[57] The Protocol entered into force in 2005.

Under the KP, Annex I Parties agreed to an average of 5.2% overall reduction, within the first commitment period (2008-2012), of GHGs below 1990 levels. Current scientific calculations indicate that this target is far below what is necessary to stabilise the climate system.

57 See the Kyoto Protocol to the United Nations Convention on Climate Change, available at *http://unfccc.int/resource/docs/convkp/kpeng.pdf*. The parties to the Kyoto Protocol also formally adopted the 'rulebook' of the 1997 Kyoto Protocol, the so-called 'Marrakesh accords', which sets the framework for implementation of the Protocol.

The Kyoto Protocol also introduced 3 market-based 'flexibility mechanisms', which generated the current multi-billion dollar carbon market.[58] Although countries with commitments under the KP must meet their targets primarily through national measures, the 3 mechanisms (Clean Development Mechanism, Joint Implementation, and Emissions Trading Schemes) allow those countries to purchase reductions in developing countries and countries in transition, or to establish carbon-trading schemes.[59] The mechanisms generate carbon credits (also known as carbon 'offsets') that may be purchased by Annex I countries seeking to fulfill their commitments. Notably, projects based on reduced emissions from the energy sector make up a significant portion of these markets.

The rules, institutions, and instruments that currently exist to address climate change suffer from shortcomings in implementation due in part to the lack of financing and other supporting mechanisms, lack of enforceability, limited scope, and the relatively few years the agreements have been in force. Current negotiations to strengthen the existing treaties and develop a new complementary agreement are underway.

3 Ongoing negotiations

In 2005, parties initiated two sets of discussions to address future approaches to climate change. The first was the Ad-hoc Working Group on the Kyoto Protocol (AWG-KP) – a negotiating process mandated within the Protocol itself to consider further commitments for the future of the KP following the close of the first commitment period.

Parties to the KP are engaged in negotiations for a second commitment period for the Protocol.[60] These negotiations, under the Ad-Hoc Working Group on Further Commitments for Annex I Parties to the Kyoto Protocol (AWG-KP), address mitigation potentials and ranges, means to achieve mitigation objectives, and consideration of further commitments by Annex I Parties. The negotiations have made negligible progress. The group expects conclusions on these issues at the 15th Conference of the Parties in Copenhagen this December. Notably, the past few meetings have been marred with tension, with the spokesperson for the Group of 77 and China walking out in the middle of one recent negotiation in protest of what was perceived as attempts by developed countries to terminate the Protocol.

A second discussion called the Convention 'Dialogue' was established to informally address long-term global cooperation on climate change. The end of the

58 The global carbon market was worth around $118 billion in 2008, rising 84 percent from the previous year due to higher trading volumes and prices. Data from New Carbon Finance.

59 For more information on the Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading Schemes (ETS), see *http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php*

60 Notably, the current multilateral negotiations that will culminate in Copenhagen are often referred to in the media as the 'Post-Kyoto' discussions, implying that the Kyoto Protocol may expire after its first period. The reference to 'Post-Kyoto' is considered erroneous by many parties, as discussions on the second commitment period are underway. Several parties have expressed their desire to fuse the KP with the new agreement, thus phasing it out, while other parties strongly oppose this option

Dialogue in December 2008 coincided with a new decision called the 'Bali Action Plan,' which established the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA). This working group was tasked with crafting a new global agreement for climate change at the COP in Copenhagen.

The main objective of the Bali Action Plan and the agreement it will eventually generate is to enhance the implementation of the Convention. The driving force behind the decision for a new agreement was the release of the IPCC Fourth Assessment Report, which brought into clear focus the need to bring the US and developing countries on board in a more meaningful way, since the Kyoto Protocol alone would not suffice.

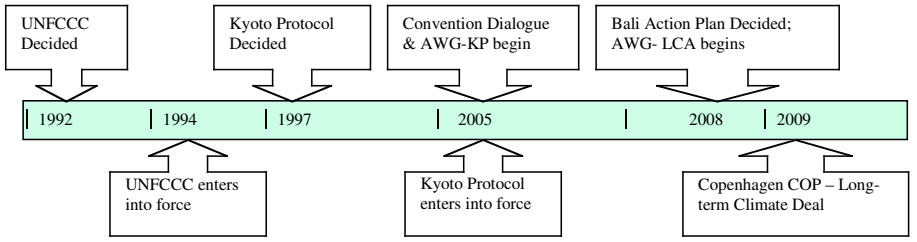
Negotiations under the AWG-LCA address five elements of the Bali Action Plan (BAP):

- a shared vision for long-term cooperative action, including a long-term global goal,
- enhanced national/international action on mitigation,
- enhanced action on adaptation,
- enhanced action on technology development and transfer to support action on mitigation and adaptation, and
- enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

The form of the future agreement is yet undefined. It could be anything from a simple 'decision' to a full-blown treaty. This depends primarily on politics as well as on negotiators' ability to narrow down the current draft text.

The AWG-LCA and the AWG-KP are scheduled to conclude in Copenhagen this December. The question remains whether these two tracks – like parallel lines – will remain as two separate but complementary processes or will converge in Copenhagen as a single new international agreement. This simple question of form is at the heart of one of the most heated debates in the negotiations. Either way, the real challenge is to put in place the operational mechanisms – on finance, technology, adaptation, and various approaches to mitigation – required to implement legally binding obligations that have been in place for 15 years, but that have remained largely unfulfilled.

Recent statements by global leaders at the United Nations Climate Change Summit lead some to believe that, rather than a comprehensive and equitable global agreement, Copenhagen may produce an agreement reflecting some form of 'global federalism' on climate change, with a global agreement that reinforces pledges countries make at the national level without creating international binding commitments. This approach reflects the US position that seeks an agreement including nationally set and enforced commitments but no legally binding or internationally enforceable targets for reductions in greenhouse gas emissions. Other countries are pushing for a stronger international agreement that reflects ambitious commitments by developed countries, matched by definitive support on financing and technology to ensure that developing countries can maximise their mitigation efforts and adequately adapt to the inevitable impacts of climate change.



4 How can and does the trade regime address climate change?

Recognition of the inter-relatedness of climate change and trade within the climate negotiations exists and is growing. The multilateral, regional, and bilateral trade systems affect climate change – both in terms of the sources of and the solution to, because the materials and energy used to produce globally traded goods and their transport to consumers is a significant part of global GHG emissions. Climate change will also impact global trade because of shifts in agricultural production, economic restructuring, and changes in production and consumption patterns, among many other factors.[61] The changes required in global consumption and production to mitigate climate change cannot occur without changes in global trade patterns.[62] The concern among trade and climate negotiators alike is that trade-related approaches to reducing GHG emissions could impact global competitiveness, which for developing countries, in particular, poses a potential obstacle to economic development.

The relationship between climate and trade has, in the past, been characterised by avoidance, rather than collaboration. The climate regime has avoided the use of trade measures for implementing its objectives or as a compliance tool, unlike other environmental agreements.[63] At the same time, the WTO's Doha Round has raised the topic of climate change in the context of potential action on liberalisation of trade in environmental goods and services (EGS), yet little advancement has been made on the issue.

The trade regime has an array of options to support climate mitigation and resiliency. Experts monitoring the trade-climate linkages both encourage synergies between the regimes and underline the importance of carefully defining areas of collaboration and the appropriate forum for implementation.[64] One idea under evaluation by trade experts is the possible identification of flexibilities within the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) to assist with diffusion and further development of low-carbon technologies.

A number of additional areas exist for further consideration and evaluation where trade rules may be relevant to measures aimed at mitigating climate change. These include: i) the general prohibition against border quotas, ii) the general non-discrimination principle, consisting of the most-favoured-nation and

61 L. Weischer, *et al* 'Climate and Trade Policies in a Post-2012 World' UNEP/adam, August 2009.
62 *Ibid*, pg 2.
63 Two examples are The Montreal Protocol for the Protection of the Ozone Layer and the Basel Convention on the Control of Transboundary Movements of Waste and their Disposal.
64 F. Zelli, 'Searching for Docking Points: Prospects for Issue-Linking between the World Trade Organization and the United Nations Climate Regime' UNEP/adam, 2009.

national-treatment principles, iii) further rules on subsidies or rules on technical regulations and standards that may not be more restrictive than necessary to fulfill a legitimate objective, iv) specific rules for sanitary and phytosanitary measures which are relevant for agricultural products, v) disciplines relevant to trade in services, imposing general obligations such as most-favoured-nation treatment, as well as vi) further obligations in sectors where individual members have undertaken specific commitments.[65] Additionally, some evaluation has taken place exploring ways to leverage financing and investment for climate change mitigation and adaptation activities through the trade regime.[66] The Committee on Technical Barriers to Trade and the Committee on Trade and Environment are two WTO forums where such issues could receive additional evaluation and consideration as countries pursue areas of mutual benefit to trade and climate regimes.

5 How do the climate rules and negotiations address trade?

As mentioned above, the climate regime has generally avoided interaction or overlap with trade issues, except in several precise areas. Article 3.5 of the UNFCCC and Article 2.3 of the Kyoto Protocol provide that measures taken to combat climate change should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade and should be implemented so as to minimise adverse effects, including on international trade, and social, environmental and economic impacts on other parties. Article 3.5 of the Convention further emphasises the cooperation of parties to promote a supportive and *open international economic system* that would lead to sustainable economic growth and development for all. In this sense, the Convention promotes goals that are compatible with those espoused by the WTO.

Article 3.14 of the KP asks that parties implement their commitments in a way that minimises the adverse social, environmental, and economic impacts on developing-country parties. An implementing decision exists for this Article (Decision 31/CMP.1) and sets out a work plan to addresses the removal of subsidies and barriers to trade in this regard. Consequently, AWG-KP discussions recently addressed the benefits and potential adverse effects of various kinds of actions with a view to determining which might be warranted, and in what circumstances. They included: policies and measures leading to changes in technologies, switching from international to local sourcing, the adoption of standards, and tariffs, taxes and subsidies or other trade-distorting policies.[67] In principle, this work plan and its ensuing documents, workshops and debates could lead to further decision on this issue under the KP.

65 See Climate change and the potential relevance of WTO rules, *www.wto.org*

66 See UNFCCC Investment and financial flows relevant to the development of an effective and appropriate international response to Climate Change at *http://unfccc.int/cooperation_and_support/financial_mechanism/ items/4053.php*.

67 The Climate Secretariat was tasked with producing an information note that addresses carbon taxes and levies, subsidies, border carbon tax adjustments, cap-and-trade schemes, standards, and labelling, among others. The information note provides a good analysis of potential impacts on developing countries from measures taken by developed countries. The paper is available at FCCC/KP/AWG/2009/INF.3

The issue of intellectual property rights (IPR) has received continued attention on the discussion relating to transfer of technology for climate change. The current text contains a section on 'measures to address intellectual property rights'. The text specifies a number of concrete measures intended to leverage the IP regime so as to encourage development of climate-friendly technologies and facilitate demonstration, diffusion, and transfer of climate technologies to developing countries. One such measure requested by developing countries is compulsory licensing for patented environmental technologies. This approach, under which countries may authorise the use of a patent without the consent of the patent holder, usually on the basis of a public interest, is permissible under the WTO TRIPS Agreement and has been used by a number of countries to address specific public health concerns.

Another proposal on the table is patent pooling through, for example, the creation of a Global Technology Pool that promotes access to the patent-protected technology in the pool and ensures support on the associated know-how and trade secrets. Other suggested measures include: preferential or differential pricing for environmentally sound technologies (ESTs), innovative IPR sharing arrangements of development and deployment of ESTs, limited- or reduced-time patents, financial support through a technology fund that covers costs for developing countries, a possible Declaration on IPRs and ESTs for climate change, the creation of technology-excellence centers in developing countries to support capacity-building, and the creation of an Executive Body on Technology functioning under the UN Climate Change Convention that would include an expert advisory group to assess barriers and make recommendations for action.

A topic of some controversy because of its explicit appearance in the in US' draft national climate legislation is the use of unilateral trade measures such as border tax measures (BTMs).[68] The issue has generated significant discussion and controversy and will likely be a point of contention through Copenhagen. India and China, supported by dozens of developing country parties, have in turn asked for explicit reference in two areas of the draft negotiating text that would prevent developed countries from using 'any form of unilateral measures including countervailing border measures, against goods and services imported from developing countries on grounds of protection and stabilisation of the climate.' They specifically cite the violation of UNFCCC Article 3, among others.

Another area of discussion relating to trade is the issue of agriculture under 'cooperative sectoral approaches and sector-specific actions'. Agriculture accounts for 14% of GHG emissions. The impacts of climate change on the agriculture sector are also predicted to be great. In a few cases, these impacts could be positive, but in most – as a result of increased floods, droughts, and even the expansion of biofuel production – global food security could be considerably threatened. In the negotiations, the issue unifies interests across developed and developing country

68 'It is the sense of the Senate that this Act will contain a trade title that will include a border measure that is consistent with our international obligations and designed to work in conjunction with provisions that allocate allowances to energy-intensive and trade-exposed industries.' *Clean Energy Jobs and American Power Act,* Draft introduced by Senators John Kerry and Barbara Boxer, September 20, 2009, Sec. 756. International Trade.

lines, but also heightens sensitivities about potential trade impacts. A short paragraph on the issue stresses development priorities but also emphasises the need to ensure activities in the sector do not 'result in barriers to or distortion of the international trade system of goods and products of the agricultural sector' – a clear reference to potential sectoral targets, carbon labeling, carbon 'footprinting', BTMs, or other national approaches that could impact global trade competitiveness.

6 Energy and climate in the Convention, protocol, and beyond

The energy sector, including energy use and production, accounts for over 50% of global GHGs.[69] Technology and policy advances in this sector are therefore the focus of many countries' climate strategies. Additional international rules and mechanisms, both within and beyond the UNFCCC, are critical for maximizing the potential reductions of this sector and for accessing necessary financing to make changes across the globe. Current instruments are limited in their scope and applicability.

Notably, many countries are forging ahead with emissions-reducing approaches in their energy sectors, building confidence that much more may be possible through further national and international measures. The US, which signed but never ratified the Kyoto Protocol, has shown a 9% decrease in emissions over the last 2 years, due in large part to changes in the energy sector responding to escalating oil prices and the global crisis. This shift prompted one climate expert to state that the US could 'far surpass' its 15-20% mid-term reduction targets under debate in its new national climate legislation.[70] China, despite its continued construction of a new coal-fired energy plants, last year produced 300,000 megawatts of wind-powered energy and by next year will blow past the US to become the world's number one producer of wind energy. India is also likely to overcome its coal addiction with the rapid expansion of extensive and highly efficient solar thermal power plants.

The financial and investment needs to address climate change, particularly as regards energy production and use, are astronomical. The International Energy Agency estimates that limiting GHG concentrations to 450 ppm CO_2eq requires US$550 billion to be invested in clean energy from now to 2030. Despite efforts under the UNFCCC processes to harness public finance and develop public policies to raise more, most financial flows to this sector will need to come from leveraging the private sector. The good news is that there appears to be interest and strong inclinations as in 2007, the private sector invested nearly US$150 billion of new money in clean-energy technologies in response to these new policy and financial incentives. At the same time, there is an urgent need for new market-based instruments and innovative financial mechanisms to attract and drive direct investment towards lower-carbon and climate-resilient technologies and practices.

The UNFCCC preamble underlines the need of developing countries to increase their energy consumption; to achieve sustainable development, their energy

69 Although figures vary slight from source to source, this breaks down roughly to 26% for energy supply, 13% for transport, 8% for commercial and private building, and 19% for industry. The latter four categories all comprise energy-use emissions, leading to the sum of over 50% of all GHG emissions.

70 L. Brown, 'On Energy We're Finally Walking the Walk,' *Washington Post*, 20 Sept 2009.

consumption will need to grow. It also emphasises the possibilities for achieving greater energy efficiency, especially through the application of technologies on economically and socially beneficial terms.[71]

UNFCCC Article 4.1(c) underlines the need for all parties to promote and cooperate on technology development, diffusion, and transfer in all sectors, including energy, transport, industry, agriculture, forestry, and waste. Articles 4.8(h) and 4.10 of the Convention provide special consideration for the needs of countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products. Consideration, in this sense, means financing, technology, and other support that will minimise adverse effects on these countries caused by measures taken to mitigate climate change.

The Kyoto Protocol lists in its Annex A the sources and economic sectors that contribute to greenhouse gas emissions and demarcates where action on mitigation is recommended. Notably, the energy sector can be broadly or narrowly interpreted depending on whether the action under consideration relates to energy production, consumption, and/or efficiency. For example, separate sector categories exist for transport, manufacturing industries, and construction, etc.

Under the Kyoto Protocol, Article 2(a) requires Annex 1 countries, in pursuing their quantified limitation reductions, to implement or elaborate policies and measures that will enhance energy efficiency in relevant sectors of the national economy. Notably, this Article allows parties to do so while taking into consideration their particular national circumstances-a flexibility clause that allows for ample interpretation of this provision.

Article 10 requires all countries to formulate, implement, publish, and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change, with special reference to the energy sector.

It is relevant to note that while Annex 1 Parties have reporting requirements under the Protocol and these reports are made public, the Protocol has limited compliance enforcement (no sanctions, limited implementation review, or other such mechanisms) in the event a country does not carry out their commitments. In the event of failure to reach their Kyoto *targets*, however, the consequences are a 50% additional to their target in the second commitment period. There is a compliance committee that meets regularly and evaluates specific cases and makes recommendations to the COP.

The AWG-LCA draft text that is intended as the basis for an agreement in Copenhagen reflects proposals by parties but does not yet reflect any consensus. Numerous references are made in the text to enhancing implementation of the Convention specifically within the energy sector. These proposals address the four pillars of the BAP. Examples of current proposals on the table include: Cooperative actions on energy research and development, national actions to enhance energy efficiency and development of renewable energies, a global fund to support a global-feed-in-tariff programme, renewable energy targets, strategies and plans, and a number of parties have suggested establishing national or international energy-

71 UNFCCC Preamble.

efficiency targets. The text includes language on initiatives, facilities, partnerships, and new financing for research and development for energy production and efficiency, including a proposed 'energy-efficiency bond mechanism to provide interest-free loans for financing development of these technologies. Then there is the delicate issue of adaptation support to countries whose economies are highly dependent on income generated from fossil fuel and associated energy-intensive products. It is most likely that a mention of the energy sector will appear in the Copenhagen agreement, while parties postpone any details relating to specific treatment of mitigation in energy production and consumption to a subsequent negotiating process.

As global negotiations continue to struggle forward and countries sculpt their national policies, the task may seem both daunting and insurmountable. Glimmers of optimism and ingenuity shine through the nebulous discussions and skepticism and shed some light on the path forward. One such spark that attempts to emphasise the message that climate change does not have to be a zero-sum game insists:

> The world does not need to choose between averting climate change and promoting growth and development. Changes in energy technologies and in the structure of economies have created opportunities to decouple growth from greenhouse gas emissions.[72]

Copenhagen may or may not produce an international agreement that has the political strength, financial means, and institutional capability to tackle climate change at the global level. The significant role of the trade regime and the energy sector in its causes and potential solutions to the climate crisis is a critical area for focus in international discussions and also at the national level. The current rules and instruments for addressing climate change through trade and the energy sector provide some basis for global cooperation, but much more is needed – particularly coherent and cooperative support from global forums such as the WTO and the International Energy Agency. Furthermore, national and regional initiatives are a steady way forward. Countries and companies should not slow these efforts while they wait for a global agreement to solidify. The financial, environmental and social benefits of early and continued action underline this imperative.

72 *The Stern Review: The Economics of Climate Change*, at p. viii.

4. EC Experience in Creating an Internal Energy Market: Lessons for the WTO

Nikolay Mizulin[73]

1 Introduction

The debate in the WTO concerning the status of energy is reminiscent of a similar debate in the European Community (EC). The lack of direct reference to energy in the EC Treaty resulted in years of uncertainty as to whether internal market and competition rules apply. This uncertainty was resolved by litigation and subsequently by adoption of a detailed and all-encompassing legal framework for trade in energy in the EC. This chapter briefly reviews the developments in the EC and then broadly outlines similarities with the WTO.

2 Treatment of energy in the EC

Like the General Agreement on Tariffs in Trade (GATT), the EC Treaty[74] does not have specific rules dealing with the energy sector.[75] As a result, it was unclear for quite some time whether its key integration provisions apply, in particular: Articles 28 and 29 prohibiting quantitative restrictions on imports and exports of goods; Article 31 regulating operations of state monopolies of a commercial character, and Articles 81 and 82 prohibiting anti-competitive arrangements and abuse of a dominant position, as well as exceptions to these rules: Article 30 justifying, under certain conditions, prohibitions and restrictions on imports and exports, and Article 86 providing an exemption from the anti-trust rules for undertakings entrusted with the operation of the services of general economic interest.

Omission of direct references to energy in the EC Treaty gave rise to two conflicting interpretations. The first one was that the Treaty authors did not think it necessary to create separate disciplines aimed at energy and thus that it should be treated as goods and services in other sectors, i.e., being fully subject to the EC Treaty.[76] The other interpretation drew on the close interrelation between the Member states and utilities

73 Counsel, Hogan & Hartson LLP. Views and opinions expressed in this paper are personal and cannot be attributed either to Hogan & Hartson LLP or its clients.

74 The Treaty establishing the European Community.

75 Outside of the EC Treaty, however, two specific instruments governed nuclear and coal industries: the 1957 European Atomic Energy Community Treaty and the 1951 European Coal and Steel Community Treaty.

76 C. D. Ehlermann, The Role of the European Commission as Regard National Energy Policies, 1994, 12 *Journal of Energy Natural Resources* L 342.

at the time and suggested that the EC Treaty intentionally omits an energy chapter in order to allow Member states sole authority in that area. A practical consequence of these divergent interpretations was that for many years the application of EC Treaty provisions to the energy sector, and network industries in particular, was virtually non-existent.[77]

As a response to economic realities (oil crisis), pro-integration leadership of the European Commission, and the agreed policy of establishing a single fully operational internal market, the end of the 1980s and the 1990s witnessed a major change as far as treatment of energy under the EC Treaty is concerned. The European Commission, in several administrative and judicial proceedings, demonstrated to the Member states that it was ready to fully apply the EC Treaty to energy and that in principle it can rely directly on its existing powers under the Treaty to remove a number of existing barriers to the internal energy market.

Having made this threat, however, the European Commission proposed not to tackle the subject with enforcement and litigation, but rather by suggesting that further energy-specific legislation should be adopted by Member states upon a proposal from the Commission. Thus Council Directive 90/377/EEC of 29 June 1990 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users, Council Directive 90/547/EEC of 29 October 1990 on the transit of electricity through transmission grids, and Council Directive 91/296/EEC of 31 May 1991 on the transit of natural gas through grids were adopted. Building upon this success, the European Commission proposed several more directives that have been agreed upon and implemented in the Member states, concerning key issues in the network energy industries, such as negotiated and then regulated third-party access to the grids and pipelines. 2009 witnessed a culmination of these efforts with the adoption of the third energy package of directives. The package aims to improve competitiveness and efficiency in the European electricity and gas markets by unbundling generation and supply from transmission networks of gas and electricity and enhancing the independence of national energy regulators.[78]

This push for an internal energy market involved debate on three contentious issues that are relevant for the purpose of the emerging discussion in the WTO. First, the EC established that gas and electricity are goods. Second, the issue arose as to whether state monopolies on import of energy are measures equivalent to

77 P. Cameron, *Competition in Energy Markets, Law and Regulation in the European Union*, (2002), page 41.

78 Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators, OJ L 211, 14.8.2009, p.1; Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003, OJ 211, 14.8.2009, p.15; Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005, OJ L 211, 14.8.2009, p.36; Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211, 14.8.2009, p.55; Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, OJ L 211, 14.8.2009, p.94.

quantitative restrictions. The third issue was whether the security-of-supply considerations can serve as an excuse to derogate from the Treaty's rules on the freedom of movement of goods.

2.1 Nature of energy

EC rules applicable to goods cover all types of imports and exports of goods and products. The range of goods, within the meaning of the Treaty, refers to products which can be valued in money and which are capable, as such, of being the basis of commercial transactions.[79]

The issue of whether electricity is a good and thus whether it falls under the EC trade and competition law provisions has been addressed by the Court of Justice of the European Communities (Court of Justice) on several occasions.[80] Each time the Court of Justice confirmed that electricity is a good.

In *Commission v Italy* the Italian Government argued that electricity displays much greater similarity to the category of 'services' than to that of 'goods'. According to it, electricity was a non-storable, incorporeal substance and has no economic existence as such, in that its utility is only determined by its possible applications. Imports and exports of electricity are merely aspects of the management of the electricity network which, by their nature, fall within the category of 'services'.[81] The Court of Justice disagreed and ruled that electricity is a good. In doing so it relied essentially on the fact that electricity is regarded as a good under the Community's tariff nomenclature (Code CN 27.16).[82] The Advocate General in that case noted that the involvement of services without which a thing cannot be used does not mean that the thing can no longer be described as a 'good' if, in spite of everything, that thing corresponds to the primary and principal purpose pursued by the contracting parties. In that connection, notwithstanding the special characteristics of electricity, that form of energy may be, and is in practice, the subject of commercial transactions in which the contracting parties (for example, the distributor and the final consumer) regard it not only as something which remains entirely independent from the various activities needed, after its production, in order to transmit, distribute, and consume it, but also as something which is more important than those activities.

Less controversial is the treatment of natural gas as a good; all parties consented to the application of goods disciplines to it.[83]

2.2 State monopolies on import of energy

Article 28 of the EC Treaty provides that quantitative restrictions on imports and all measures having equivalent effect shall be prohibited between Member states. The

79 Case 7/68 *Commission v Italy* [1968] ECR 425.
80 Case C-393/92 *Almelo v Energiebedrijf Ijsselmij* [1994] ECR I-1477; Cases C-159/94 *Commission v France* [1997] ECR I-5815; C-158/94 *Commission v Italy* [1997] ECR I-5789; C-157/94 *Commission v The Netherlands* [1997] ECR I-5699.
81 C-158/94 *Commission v Italy* [1997] ECR I-5789.
82 *Id.*, paras. 14 – 19
83 Case C-159/94 *Commission v France* [1997] ECR I-5815.

term 'measure having equivalent effect' was interpreted in practice as being much broader in scope than a quantitative restriction.[84] In *Dassonville*, the Court of Justice set out an interpretation on the meaning and scope of measures of equivalent effect and stressed that the most important element determining whether a national measure falls under Article 28 is its effect.[85] Article 28 applies not only to national measures which discriminate against imported goods, but also to those which seem to apply equally to both domestic and imported goods but are de facto more burdensome for imports (this particular burden stems from the fact that the imported goods are in fact required to comply with two sets of rules: one laid down by the Member state of manufacture, and the other by the Member state of importation).[86]

In *Commission of the European Communities v Kingdom of the Netherlands, Italian Republic, French Republic and Kingdom of Spain*,[87] the Commission argued that the exclusive rights in the defendant states to import electricity and (in the case of France) natural gas may create a barrier to trade in the Community and *may* therefore be measures having effects equivalent to quantitative restrictions on imports for the purpose of Article 28 of the Treaty because they prevent producers in other Member states from selling electricity or natural gas to persons in the defendant states other than those vested with the contested rights, and they prevent undertakings in the defendant states (for example, distributors) and (in the case of Italy, France and Spain) consumers from choosing a supplier of electricity or natural gas who is established in another Member state.

The Court did not address the issue. However, the Advocate General agreed with the Commission, stating that measures which are capable of hindering, directly or indirectly, actually or potentially, intra-Community trade include any national provision or practice which results in imports being channeled in such a way that only certain traders can carry them out, whereas others are prevented from doing so. In his opinion, he relied on the Court's very wide interpretation of the term 'measures having effects equivalent to quantitative restrictions in the Dassonville judgment.[88]

2.3 Security of supply

The EU is significantly dependent on external supplies of energy. For that reason, a question arose early on as to whether measures derogating from the trade disciplines of the EC Treaty could be used to ensure a security of supply by fostering the development of the local energy industry in a Member state. In legal terms, that

84 Commission Staff Working Document, Free Movement of Goods – Guide to the application of Treaty provisions governing Free Movement of Goods (Articles 28-30 EC), SEC(2009) 673 final, Brussels, 12.5.2009, p. 13.

85 'All trading rules enacted by Member States which are capable of hindering, directly or indirectly, actually or potentially, intra-Community trade are to be considered as measures having an effect equivalent to quantitative restrictions'. Case 8/74 *Dassonville* [1974] ECR 837.

86 Commission Staff Working Document, Free Movement of Goods – Guide to the application of Treaty provisions governing Free Movement of Goods (Articles 28-30 EC), SEC(2009) 673 final, Brussels, 12.5.2009, p. 14.

87 Cases C-159/94 *Commission v France* [1997] ECR I-5815; C-158/94 *Commission v Italy* [1997] ECR I-5789; C-157/94 *Commission v The Netherlands* [1997] ECR I-5699.

88 Case C-159/94 *Commission v France*, opinion of the Advocate General, paras. 52-65.

required justification of those restrictions on grounds of 'public security' for the purposes of Article 30 of the Treaty, as measures taken to ensure the supply of electricity and natural gas.[89]

The issue was first resolved in *Campus Oil*.[90] The question was whether national provisions requiring importers of petroleum products to obtain their supplies, up to a certain percentage, from a state corporation operating a refinery in Ireland, at prices fixed by the competent Ministry, were compatible with the Treaty. After finding that the national rules constituted a measure having an effect equivalent to a quantitative restriction on imports, the Court went on to consider whether the reasons for the rules constituted grounds of 'public security'. The Court accepted that 'petroleum products... are of fundamental importance for a country's existence since not only its economy but above all its institutions, its essential public services and even the survival of its inhabitants depend on them', and 'an interruption of supplies of petroleum products, with the resultant dangers for the country's existence, could therefore seriously affect the public security that Article 30 allows States to protect'.

3 Lessons for the WTO

The WTO does not have competition rules, and it will not have them in the near future. Nor does the organisation aim to create a single, integrated market on a global scale. Nevertheless, as was the case in the EU, there is an increasing demand for disciplines on trade in energy from the membership.[91] Another similarity with the EU is that the energy-silent WTO agreements in fact provide scope for a challenge to trade restrictions in the energy sector.

First, it looks increasingly likely that a WTO Panel will consider gas and electricity as goods, with a result that GATT provisions will be fully applicable to them.[92] In a recent dispute concerning *China – Restrictions on Audiovisual Products the Panel* found that motion pictures are goods, relying essentially on the approach to classifying motion pictures as goods in the Harmonised System.[93] Second, the key issue in the energy sector, particularly as far as electricity and gas are concerned, is access to the transmission networks.[94] It is a common understanding for the moment that the WTO agreements deal with tariff and non-tariff barriers, while restrictive business

89 Article 30 provides: 'The provisions of Articles 28 and 29 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of public morality, public policy or public security; the protection of health and life of humans, animals or plants; the protection of national treasures possessing artistic, historic or archaeological value; or the protection of industrial and commercial property. Such prohibitions or restrictions shall not, however, constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States.'

90 Case 72/83 Campus Oil Ltd v Minister for Industry and Energy [1984] ECR 2727.

91 See, e.g., Council for Trade in Services – Special Session – Communication from the United States – Initial Offer, TN/S/O/USA/REV/1, 09.04.2003.

92 Mireille Cossy, Energy Transport and Transit in the WTO, published in this book.

93 Panel Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products,* WT/DS363/R, paras. 7.524-7.527.

94 Thomas Waelde, Access to Energy Networks: a Precondition for Cross-border Energy and Energy Services Trade, a discussion paper/first draft for 23-25 July 2001 UNCTAD experts meeting on energy services.

practices, such as vertical foreclosure of transmission and distribution networks fall outside of the scope of WTO Agreements.[95] It is also argued that no provision of international law, including those of the WTO agreements, requires third-party access to transmission facilities.[96] That said, a question remains if, by analogy with the EU, a monopoly on importation or transmission can be considered a quantitative restriction prohibited by Article XI of the GATT and thus whether access to the network should be provided for imported goods in order for importation to occur. While under the GATT the fact that goods are imported through state trading operations does not mean *per se* that imports are being restricted, a possibility is left open that the operation of the state trading entity results in a restriction.[97] Furthermore, the Panel on *Korea – Various Measures on Beef* noted that where a state trading enterprise possesses an import monopoly and a distribution monopoly, any restriction it imposes on the distribution of imported products will lead to a restriction on importation of the particular product over which it has a monopoly contrary to Article XI.[98]

Similarly, the recent *Colombia – Ports of Entry* Panel interpreted, for the first time, GATT Article V dealing with transit. The Panel clearly adopted an extensive interpretation of that provision by ruling in particular that Article V:6 extends most-favored-nation obligations to Members whose territory is the ultimate destination of the good in transit, thus rejecting Colombia's argument that Article V only contains obligations related to 'freedom of transit'. According to this Panel, 'products that are transported from their place of origin which pass through any other Member country on the route to their final destination must be treated no less favourably than had those same products been transported from their place of origin to their final

95 Energy services – Background Note by the Secretariat, S/C/W/52, 9 September 1998, Council for Trade in Services, para. 37.

96 Thomas Waelde, Access to Energy Networks: a Precondition for Cross-border Energy and Energy Services Trade, a discussion paper/first draft for 23-25 July 2001 UNCTAD experts meeting on energy services.

97 Panel Report, *India – Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products,* WT/DS90/R, adopted 22 September 1999, as upheld by Appellate Body Report WT/DS90/AB/R, DSR 1999:V, 1799, paras. 5.134 – 5.135: 'In analyzing the US claim, we note that violations of Article XI:1 can result from restrictions made effective through state trading operations. This is made very clear in the Note Ad Articles XI, XII, XIII, XIV and XVIII, which provides that 'Throughout Article XI, XII; XIII; XIV; and XVIII, the terms 'import restrictions' or 'export restrictions' include restrictions made effective through state-trading operations.' It should be noted however, that the mere fact that imports are effected through state trading enterprises would not in itself constitute a restriction. Rather, for a restriction to be found to exist, it should be shown that the operation of this state trading entity is such as to result in a restriction. As noted above, the United States has shown in some instances that there have been zero imports of products reserved to state trading enterprises by India. We note, however, that canalisation per se will not necessarily result in the imposition of quantitative restrictions within the meaning of Article XI:1, since an absence of importation of a given product may not always be the result of the imposition of a prohibitive quantitative restriction. For instance, the absence of importation of snow ploughs into a tropical island cannot be taken as sufficient evidence of the existence of import restrictions, even if the right to import those products is granted to an entity with exclusive or special privileges.'

98 Panel Report, *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef*, WT/DS161/R, WT/DS169/R, adopted 10 January 2001, as modified by Appellate Body Report WT/DS161/AB/R, WT/DS169/AB/R, DSR 2001:I, 59, para. 751.

destination without ever passing through that other Member's territory'.[99] If other Panels follow the same extensive approach to the interpretation of Article V, it is possible that fixed infrastructure, such as pipelines and grids will be found to be subject to it.[100]

For these reasons, it is not unimaginable that the same phenomenon may occur in the WTO, as it did in the EC, whereas legal challenges will create an incentive for future negotiations of a General Agreement on Trade in Energy (GATE).

In certain respects, the negotiated approach to energy trade may turn out to be in the best interest of the energy-producing and transit countries as it provides for an opportunity to create the language that specifically addresses energy issues.

For example, Article V currently requires that transit only be subject to reasonable charges for transportation, commensurate with administrative expenses entailed by transit or with the cost of services rendered. The Panel on *Mexico – Telecoms* interpreted a similar language in Mexico's Reference Paper that required Mexico to ensure interconnection 'at cost-oriented rates that are ... reasonable, having regard to economic feasibility.' The Panel found that Mexico's use of long-term incremental cost methodologies is consistent with the required cost-oriented rates. The Panel then also ruled that the qualifier 'having regard to economic feasibility,' serves to underline that the major supplier is entitled to rates that allow to make a reasonable rate of return.[101] The question therefore becomes whether a transmission operator is entitled to set a transit charge allowing for a reasonable rate of return in the absence of reference to 'economic feasibility' under Article V.

Another question is whether derogations from Articles V and XI can be justified based on security-of-supply considerations. The relative ease with which quantitative restrictions were found in the EC to be covered by Article 28 of the EC Treaty may not least be explained by the existence of the security-of-supply escape clause. However, under the WTO rules, it is not clear whether restrictions on trade in energy, such as setting a quota on the level of imports, can be justified by security-of-supply considerations. While energy was historically considered to be outside of the scope of the WTO due to Article XXI national security exceptions,[102] nothing in that provision appears to provide for the security-of-supply justification.

The EU experience shows that these questions can be answered either by litigation or negotiations-or more precisely, by negotiations resulting from litigation. Therefore, a policy question the WTO needs to consider is whether it is worth wasting time and energy on litigation if only negotiations can give a comprehensive response to the need for the discipline on trade in energy.

99 Panel Report, *Colombia – Indicative Prices and Restrictions on Ports of Entry*, WT/DS366/R, Para. 7.478.

100 Note also that the only exclusion directly mentioned by Article V of the GATT is aircraft in transit. Mireille Cossy, Energy Transport and Transit in the WTO, published in this book.

101 Panel Report, *Mexico – Measures Affecting Telecommunications Services*, WT/DS204/R, adopted 1 June 2004, DSR 2004:IV, 1537, paras. 7.169-185.

102 Energy services – Background Note by the Secretariat, S/C/W/52, 9 September 1998, Council for Trade in Services, para. 31.

Floor Discussion of Part I

Question from a member of the audience (Brazilian mission)
Energy can be clean or dirty and it can be a good or service. How is GATT going to treat the energy inside a good? For example, steel that is dirty or clean? How to deal with non-discrimination among nations and non-discrimination among imported and national goods? I know about the wording in the WTO articles, but energy is not explicitly included. Can we deal with this?

Professor Gabrielle Marceau:
This is a tough question and almost takes us back to the issue of 'process and production methods' (PPMs) in environment. It also highlights the fact that the classical GATT/WTO framework has a mutually exclusive distinction between goods and services. In the WTO, we have different rules in goods and services. We know that both rules can apply to a similar setting, but they are supposed to be always mutually exclusive. If we think of electricity, this is not so easy. That is the problem of energy and why we need a definition or some agreement. How to handle the energy that is within a product? Traditionally in GATT, and I think it is still roughly true in the WTO, two products are like if they compete with each other. All rules rely on this premise. All the non-discrimination rules depend on this premise. Is a pen that is energy efficient like a pen that is not? Traditionally in GATT/WTO products were not like if they were physically different. If they are like, they must receive the same treatment. This question is fundamental to the energy debate. If you cannot detect energy in a product or differentiate products based on how they were made, the products in question would then probably compete with each other. If they compete, they are the same and you cannot treat them differently from a regulatory perspective. Some people would argue that they are not the same. At the moment, the answer is if the products sufficiently compete in a market they are like and must be treated the same. However, this can also lead you to GATT article XX exceptions.

Lawrence L. Herman
The PPM issue is very controversial, and my view is that we will focus on the competitiveness of products as a function of likeness and whether the PPM affects this likeness test

Question from a member of the audience (IISD)
We are discussing gaps and holes in current GATT/WTO rules with regard to energy, be that a good or a service. Is the fact that energy and the use of energy have consequences for greenhouse gas emissions not further complicating issues? How would you deal with emissions trading?

Professor Gabrielle Marceau
The general view is that emission trading schemes (ETS) can be seen as financial services and there would thus need to be specific commitments under GATS. The specific commitments depend on whether a country agreed to subject a sector to discipline. ETS is an area where you can have an enormous clash with regional trade agreements. The U.S. is setting up an ETS and wants to link it to a part of Canada, so

regional markets would be created. And the fragile GATT article XIV will not be that helpful in tackling these complex issues.

Lawrence L. Herman
ETS is a very important issue, and one of the big challenges. Regional trading is developing and it is going to be a challenge ensuring that credits can be traded across borders. It is something that certainly needs to be addressed.

Ana Maria Kleymeyer
I cannot say how the ETS will be dealt with in the WTO, because the certified emissions reductions could be considered a product or a service. Under the current negotiations, the question of a global market for climate change is one of the leading issues. We are likely to see a much larger global market for climate change than today. It is also likely for it to be unified. Both Mexico and India have already taken steps to set up a kind of national carbon market. Why is this interesting and important to developing countries as well as to developed countries? It is the best way to get financing and technology into the country. The CDM is the only source of financing and technology, and it is the most promising for flows of technology and investment to developing countries.

Question from member of the audience (UNECE Food and Timber Section)
In the timber and wood sector, the issue of energy is very prominent. It concerns wood energy. Can we avoid a debate on life cycle analysis of products?

Professor Gabrielle Marceau
How long can we avoid life cycle analysis? This is an issue that should be considered by Member-States. The secretariat has no authority to put a point on the negotiating agenda. One of the interesting issues of invoking GATT Article XX is: what is the value of a life cycle analysis argument to justify a differentiated treatment? Is it evidence of environment concern? Good faith?

Ana Maria Kleymeyer
At the moment, life cycle analysis is not a big issue in the climate negotiations. I am tempted to say that it will be a part of the technical and scientific analysis under a climate change agreement.

Question from a member of the audience (CTSD)
Prof. Marceau mentioned the development of rules on government procurement in the energy sector. Under services, there are also energy services, how would you see the sort of linking of the rules of government procurement in energy services with the government procurement in energy as goods. Would there be some relation? Also, not all WTO members are Member of the WTO's Government Procurement Agreement (GPA).

Professor Gabrielle Marceau
There is a provision in the GATS saying that government procurement of services is to be negotiated, but not very much is being done in this area. The GATS

commitments arise from the GATS multilateral agreement. Parallel to the multilateral agreements, the government procurement agreement only binds the governments that have accepted it. The GPA covers goods and services, and the question is how do you match the two? There is no answer to this. Even if one manages to not have anything happening under the GATS, the GPA goes ahead but binds only the states that are signatory to this voluntary agreement. However, new acceding countries are usually obliged or strongly recommended to join the GPA.

Question from a member of the audience

In Border Tax Adjustments (BTA), what are the discussions on who gets the collected money? Which is the entity that should collect the money and what should it do with these resources? How would the answer to these questions influence the WTO consistency of the BTA? Another question on export restrictions, GATT Article XI prohibits export restrictions and quotas, but not taxes. However, the distinction between these is not always clear. If the tax is so high that the export is impossible, the difference between these two concepts is blurred.

Professor Gabrielle Marceau

BTA is a sensitive topic. GATT article XX can also play a role in this discussion. This article imposes the condition that countries where the same conditions prevail should be treated the same. This analysis includes the level of development of each Member-State. One argument is that if the money collected is reinvested in the environment and climate change combat, it would be clear that there is a concern for the environment. This would support a good faith allegation and that the country cares about the environment, and that polluting at home or abroad would be the same from the perspective of this country. These are not the only conditions of GATT article XX, but the way one deals with the money that is collected and how one copes with it could be relevant. In the US - Byrd Amendment dispute, it was said that two remedies for the same thing (imposing anti-dumping duties and transferring the money collected to import competing industries) is not good. Could this have an impact if the money is used just for protection?

Regarding GATT Article XI, I agree that export quotas are prohibited. However, there is nothing on export taxes. There is a proposal at the moment by Japan to have a rule on export taxes, but countries like Argentina considerably use export taxes. Could very high export taxes be equated to an export quota? The economists would say yes and it is an argument that can be made, but legally there is no provision on export taxes. The general understanding is that the WTO does not regulate export taxes.

Lawrence L. Herman

With regards to GATT article XI, it seems that this article is broad enough to capture export taxes when they become restrictive. The wording is potentially broad enough to deal with the taxation issues.

Ana Maria Kleymeyer

I do not know where the money goes, but the current U.S. Senate draft legislation is very vague about the BTA, and it simply says that the legislation considers that there

will be some sort of BTA. The assumption is that this question will be dealt with in committees when the details of the BTA are laid out. In the U.S. legislation there is more discussion on carbon markets and where will the money go. Certain percentage of allowances will be put aside to fund climate activities in the U.S. and to finance adaptation in developing countries.

Professor Joost Pauwelyn
What really binds all questions together so far is what should be done about legal provisions that were written a long time ago and without the energy sector in mind. Whether we should give them an evolutionary meaning or negotiate new rules, within or outside the WTO. When it comes to energy incorporated in a product, for example, consider trade in aluminum: one needs so much energy to produce aluminum that aluminum can be regarded as 'canned energy' and trade in aluminum as, essentially, trade in energy. If so, why not look at the energy in aluminum as an input or 'article from which the imported product has been manufactured or produced' in the sense of GATT Article II:2(a) which permits for BAT? If one gives evolutionary meaning to the notion of 'article' in this provision, one could capture energy within a product. The same may happen in respect of life cycle analysis and ETS. Is it possible to trade the allowance permit? Is this piece of paper seen as a tradable good? Traditionally, the answer would be negative, but perhaps with a creative look one could cover it under existing rules. The alternative approach is to stick to original design and intentions and not to adjust existing rules unless and until new energy-specific rules are agreed upon.

Lawrence L. Herman
Joost Pauwelyn's comment on the evolutionary development of rules is very important. There has been no concerted effort in the energy sector to pinpoint where certain evolutionary thinking might be worthwhile. The identification of these issues and gaps should be done in a comprehensive way, or at least include a systematic identification of where rules are not fully satisfactory. .

Professor Gabrielle Marceau
The difficulty with an evolutionary interpretation approach is that it is usually associated with WTO dispute settlement, and this solution is less appropriate than having Members-States and industries deciding these issues.

Question from a member of the audience (WTI Advisors)
Thinking of evolutionary concepts, it strikes me that when we discuss BTA and PPMs, we should remember that these notions are based on the destination principle. In other words, at the end consumers are the ones that will pay the price. Defining the consumer as polluter is something China has brought up in the context of Copenhagen. That could be a concept that could resolve a lot of problems, even historical justice issues and population issues to make sure the externality is internalized in the consumption. As far as traceability, GATT article III and PPMs are concerned, 15 years from now we will probably be able to trace the carbon in products. It is not that difficult, and once we can do it in a certain manner, the risk of discrimination is diminished. Maybe a consumer pays principle could do the trick. It has been proposed to come up with a

plurilateral agreement to address 90% of the issues and move ahead. Is this possibly an option?

Professor Gabrielle Marceau
There are WTO plurilateral agreements, but in the WTO a consensus is needed to have a plurilateral agreement and this will certainly not be easy.

Question from the member of audience
It is necessary to clarify issues of energy taxation of products in border measures cases. The current discussions focus on the identification of certain criteria, such as energy intensity, emission intensity and trade intensity. These factors will then be used to see which sector or industry is eligible to profit from free allocation.

Question from a member of the audience (Economics International)
Green subsidies as part of the WTO Subsidies Agreement are on their way out, but would it be possible to use this as part of the solution for the energy sector? Switzerland had a vote on energy subsidies about 10 years ago, which was turned down. If it had been accepted, could it have created problems with the WTO?

Professor Gabrielle Marceau
The green subsidy provision established that the green subsidies that were in the Subsidies (SCM) Agreement were going to disappear by 2000 unless there was a positive consensus to keep them, and developing countries refused the extension of green subsidies. They are still mentioned, but are no longer applicable. I do not know the Swiss subsidy on energy, but the WTO rules are simple: certain subsidies are prohibited, other subsidies are not illegal but it will depend on their impact, including any adverse effect on other WTO Member-States.

Question from a member of the audience (UNEP)
Could a country invoke GATT article XX to justify restrictive measures against a polluting product. Could this complete the analysis? Given the current WTO jurisprudence, do you think they would be able to comply with WTO rules given the exceptions? What is the likelihood or usefulness of a possible WTO energy round? Would it be a likely event?

Professor Gabrielle Marceau
GATT article XX can be invoked to justify a violation of basic GATT rules, but they are conditioned. One needs to prove that the measure was adopted for the environment. Another set of criteria comes from the chapeau of article XX which is basically a good faith test. You should not treat different countries in the same conditions differently. What does it mean? I believe that it includes a consideration of level of development, but is has never been checked. In U.S. - Shrimp, the U.S. had to take into account the specific exporters of shrimp. One must evaluate the right level of the products, the origin, the level of development, if the money is properly used, and the specific exporter.

Question from a member of the audience (OECD Trade and Agriculture Directorate)
Concerning life cycle assessment, certainly 15 years from now the situation will probably be better than today, but the point is that there are regulations that are being put into place now and each country adopts a different measure. There are different boundaries in agriculture, and all can go ahead on the assumption that data is good, but research has shown that this is not the case.

Question from a member of the audience (Chinese mission)
Are WTO rules relevant when a country imposes carbon taxes? What implications will this have on the climate change and the proposed carbon tax adjustment?

Question from a member of the audience (CTEI)
Regarding the Copenhagen Conference and beyond, is it feasible that something will be decided on trade measures?

Ana Maria Kleymeyer
When taking into consideration different carbon tax legislations, my understanding is that the BTA proposed by France is currently permissible under WTO rules. And this is driving the Indian and Chinese delegation to including more specific language in the new negotiation text at Copenhagen that would dissuade countries from taking preventive measures. The language clarifies that there would be a violation of the UNFCCC rules. Developing countries are looking for more legal support to protect them from these types of measures. However, it is not clear whether this will stay in the text.

Professor Gabrielle Marceau
Concerning the BTA by France and Germany, one should always keep in mind that the EU is a Union so they first have to convince the other EU Members. Legally, it is possible to imagine such a carbon tax BTA system, but whether this BTA would in practice win a challenge under the WTO dispute settlement system is a different issue.

Part II

Import, Export and Production Restrictions on Energy Goods & Services

5. Background to WTO Rules and Production/Trade Restrictions in the Field of Energy

Daniel Crosby[103]

1 Overview

In order to discuss the application of the WTO Agreements in the context of energy and the environment, we should first define the scope of the relevant WTO rules and commitments. We must also understand the process and politics of how the various rules and commitments are undertaken.

At the outset, we must acknowledge that the scope of the WTO Agreements is limited. For example, WTO rules do not speak to most aspects of investment, competition, labour and immigration policies, or exploitation of national natural resources, not to mention control over national borders and citizenship-even though these topics can affect trade. Even in the many areas covered by the WTO Agreements, Members may implement measures inconsistent with the rules under exceptions for public morals, health, environmental protection, and national security.

The scope of the WTO Agreements and the application of existing rules and commitments, including on energy and the environment, does not satisfy the diverse interests of the WTO Membership. The introduction of new rules requires the consensus of all Members (in the form of support or silence). Under such a rule-making system, stakeholders must obtain broad agreement on new rights and obligations so as to avoid alienating supporters and undermining consensus. In addition, the meaning of existing rules can be 'clarified and improved' through multilateral agreement or interpreted through dispute settlement proceedings. Improved multilateral market-access commitments affecting energy and the environment can only be obtained through WTO multilateral negotiations.

2 Production restrictions

No WTO rules apply to Members' decisions on whether or not to produce natural resources, including water, agricultural products, timber, ores, and energy resources like coal, oil, and natural gas. Arguments have been made that decisions to regulate natural resource production could be considered 'export restrictions' under Article XI of the General Agreement on Tariffs and Trade (1947), which prohibits quantitative export restrictions. However, most Members consider that the exploitation of natural

103 Partner, Budin & Partners, Geneva.

resources is reserved permanently and exclusively to nations' internal sovereignty and remains outside the scope of the WTO Agreements.

The Organization of Petroleum Exporting Countries (OPEC) comes to mind in this context because its mission is

> to coordinate and unify the petroleum policies of Member Countries and ensure the stabilisation of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital to those investing in the petroleum industry.[104]

OPEC pursues this goal by recommending crude oil production targets for its member countries. The pertinent question for WTO purposes is: whether decisions concerning whether and at what rate to produce natural resources should be considered de facto quantitative restrictions on exportation. If this was the case, there would be huge implications for other natural resources (like water and forestry products) which are more accessible, tradable, and renewable.

When Members have considered this issue in the trade context outside of the WTO, they have introduced legal certainty and reassured the public that even the most advanced international trade and investment agreements will not intrude on natural resource sovereignty.

The Energy Charter Treaty (ECT) is the most ambitious treaty concerning investment, trade and transit of energy. ECT Article 18.3, Sovereignty over Energy Resources, unequivocally confirms the parties' State sovereignty over energy resources:

> Each state continues to hold in particular the rights to decide the geographical areas within its Area to be made available for exploration and development of its energy resources, [and] *the optimisation of their recovery and the rate at which they may be depleted or otherwise exploited[*.] (Emphasis added.)

Although in 1994 North American Free Trade Agreement (NAFTA) broke new ground in setting high standards for economic integration, the parties confirmed that since water was not considered to be a good or product subject to international trade rules, the NAFTA had no implications for natural water resources.

In view of natural resource sovereignty issues, WTO Members should consider whether the clear affirmation of sovereignty principles in the WTO context would create confidence and facilitate multilateral discussions on energy-related issues.

3 Business effects of existing policies and trade barriers

Import and export barriers 'distort' international trade in goods and services, and therefore affect business opportunities, conditions of competition and investment decisions.

Although the WTO agenda has been broadened to address increasingly complex 'behind the border' issues, stakeholders must not neglect tariffs as the most fundamental barriers to international trade. New WTO bindings on non-agricultural

104 *http://www.opec.org/home/* (visited 3 September 2009).

market access (or NAMA) may in some cases create new trade flows, but in all cases increase the level of security and predictability of international trade. Although some WTO Members base negotiating requests on 'new trade flows,' the realistic target in most cases is the reduction of bound rates toward applied tariff rates of 'trade security.' While the business community would certainly like to enjoy new trading opportunities, they also understand the intrinsic security of WTO bindings.

In the case of primary and downstream energy products, applied tariffs are low, but bound rates remain high, or even completely unbound, in some important sectors. The Doha Round includes plan to reduce tariffs on 'environmental goods.' The trouble is, Members cannot decide what goods are environmental… And, notwithstanding the continuing importance of tariff negotiations, non-tariff measures are an increased source of trade distortion and therefore trade friction.

With respect to energy services, a strong case can be made for commitments under the General Agreement for Trade in Services (GATS) reflecting existing levels of openness. This is especially the case of environmental services, where Members have even more reason to make commitments that would support competition and the development of increasingly efficient services. However, as in the case of goods trade, many Members have concerns over 'sovereignty' issues related to GATS commitments. Institutional efforts need to be undertaken to address such fears and to encourage Members to make commitments without concerns about maintaining national resource sovereignty.

4 Trading alternative and conventional energy products

Since 'alternative' energy competes against 'traditional' energy, established interests can be expected to protect their markets from new competitors. Governments therefore face requests to maintain tariff protection, to classify imports in categories with high tariffs, and to introduce technical regulations that impose burdens in 'alternative' products.

Currently, the most important 'alternative' energy products take the form of renewable 'biofuel' products including biodiesel, bioethanol and biomass products. These products face high tariffs, unfavorable tariffs classifications (that result in higher tariffs), distortions caused by national subsidy programs, and regulations that require conformance with technical regulations and sanitary and phytosanitary requirements. In addition to the legal and regulatory restrictions in place, infrastructure limitations need to be overcome by companies engaging in the 'alternative' areas of trade.

Traditional energy products also face their share of trade barriers, including unbound tariffs or bindings at high rates, and internal tax policies. Differential rates of internal taxation apply among 'traditional' energy products, like oil and coal (mostly favouring the latter), and between 'renewable' and 'traditional' energy sources (favouring the former). In addition, most countries apply high internal taxes to traditional energy products whether or not they produce such products at all.

Some Members apply export tariffs on energy products that in effect maintain prices in their domestic markets below international market prices. Export taxes are legal and in the view of this fact most countries remain outside of the WTO 'bargain.'

However, some Members nevertheless attempt to obtain commitments on export duties in the context of WTO accession negotiations and in the Doha Round.

As concerns wholesale and retail trade in fuels, the GATS system specifically provides for commitments on these services, but actual market-access and national-treatment obligations depend on specific commitments undertaken by individual Members. Members' schedules of specific services commitments should be studied to confirm where market opportunities exist and where further engagement is needed. However, even where Members have not undertaken specific commitments, the most-favoured-nation (MFN) principle requires equal treatment of all trading partners. Therefore, Member state practice should also be reviewed to consider where the operation of the MFN principle creates market opportunities.

6. Production, Management, OPEC and the WTO

Ibibia L. Worika[105]

1 Introduction

In pursuing its principal aim of 'co-ordination and unification of the petroleum policies' of its 'Member Countries and the determination of the best means for safeguarding their interests, individually and collectively' OPEC has pledged in Article 2 C of its Statute that:

> 'Due regard shall be given at all times to the interests of the producing nations and to the necessity of securing a steady income to the producing countries, an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on their capital to those investing in the petroleum industry.'

Beginning from the period when the seven majors dominated the international oil market and unilaterally reduced posted prices for crude, which amongst others triggered the formation of OPEC, through the turbulent 1970s, swinging 80s and near collapse of the late 1990s, no one can deny that oil markets have had a checkered history, experiencing wide price swings in recent years. The international oil market has become characterised by a curious combination of long-term as well as intra-day price volatility, sources of grave concern to oil exporting countries, oil importing countries as well as those investing in the petroleum sector. OPEC MCs aim to stabilise the international oil marret for the benefit of producers and consumers.

Yet, OPEC MCs' production management policy has been criticised as contravening GATT/WTO rules against export restriction prohibited under Article XI (1) of the GATT. This chapter sets out with a brief overview of OPEC and the WTO, followed by another brief discussion on OPEC MCs' production management policies and the WTO rules on this issue. The concluding segment is a summary of the major findings with a recommendation.

2 OPEC and the World Trade Organization

OPEC is a permanent inter-governmental organisation comprising 12 oil producing and exporting countries spread across Latin America, Africa and Middle East.

105 General Legal Counsel, OPEC. The views expressed in this note are exclusively the personal views of the author and do not necessarily reflect the views of OPEC and/or its Member Countries, individually or collectively.

The WTO is a multilateral organisation that oversees and encourages free trade in goods and services between its member countries, comprising 153 nations all of whom have accepted a number of agreements that open up their domestic markets to imports from other member countries by reducing barriers and protections such as tariffs (i.e., taxes on goods brought into a country from outside). Table 1 attempts to comparative summarise of the main characteristics of OPEC and the WTO.

This comparison has led many to contend that these two organisations are not compatible. OPEC is, however, not a member of the WTO, even though it has applied to be an observer at various organs of the WTO, such as the Committee on Trade and Environment (CTE) and the Committee on Trade and Development (COMTD). However, eight (8) OPEC member countries are also members of the WTO and the other four (4) are in the process of accession (see Table 2 below).

Table 6.1 OPEC and WTO – comparisons

Modus Operandi	OPEC	WTO
Mission	Coordinates and unifies the petroleum policies of Member Countries and ensures the stabilisation of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and fair return on capital to those investing in the petroleum industry	Raising the standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services.
Methodology	Implements production management policy with a view to stabilizing the international oil market.	Promotes competition, discourage governmental impediments to the free flow of trade across borders through the prohibition of trade-distorting subsidies, quantitative restrictions on both imports and exports and the encouragement of reciprocal reduction and/or elimination of import tarifs.
Enforcing	Good faith of individual member countries and absence of any dispute resolution system.	Policy surveillance through members' self-notification and the Trade Policy Review Mechanism (TPRM), a strong system of dispute settlement and fear of ultimate retaliation by other member countries

Table 6.2 OPEC member countries' WTO membership status

OPEC Member Countries	WTO Membership Status	Date of membership
Angola	Member	23 September 1996
Algeria	Observer	-
Ecuador	Member	1 January 1996
Iran	Observer	-
Iraq	Observer	-
Libya	Observer	-
Kuwait	Member	1 January 1995
Nigeria	Member	1 January 1995
Qatar	Member	13 January 1996
Saudi Arabia	Member	11 December 2005
United Arab Emirate	Member	10 April 1996
Venezuela	Member	1 January 1995

2 Opec production management and WTO rule on export restriction

2.1 WTO rule on export restriction

The contention is that 'OPEC's production management policy is a disguised restriction on international trade violating the prohibition on quantitative export restrictions under Article XI of the General Agreement on Tariffs and Trade (GATT).' Article XI (1) of the GATT, provides:

> No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.

While it is obvious that 'restrictions made effective through quotas or other measures' is prohibited under the provision of Article XI (1), OPEC MCs' production management policy with respect to oil in situ is not synonymous with export prohibitions or restrictions that could violate Article XI (1).

2.2 Production management v. export restriction

OPEC MCs do not use government-mandated export restrictions, but rather production management policy. There is a substantive distinction between export restrictions, which are prohibited in GATT Article XI, and production management policy implemented by OPEC MCs.

Admittedly, from the early 1970s to the mid of 1980s, OPEC MCs attempted to set crude oil prices. From 2000 to the early 2005, OPEC also attempted to apply a price band. In each instance, their efforts were overtaken by the vagaries and vicissitudes of the international oil market. But, none of these mechanisms amounted to an 'export restriction'. Since the early 2005 till present day, OPEC MCs have used production management as their chosen policy to pursue stability and harmony in

the oil market for the benefit of oil producers, consumers as well as those investing in the petroleum industry. To this end, OPEC MCs forecast developments and respond to market fundamentals by either lowering their respective crude oil production or increasing production depending on their combined reading of market fundamentals. It is, therefore, imprecise to contend that OPEC MCs production management policies are synonymous with production restrictions, let alone export restrictions. It is even much more doubtful whether GATT/WTO jurisprudence provides any basis for any WTO member to force OPEC MCs either jointly or severally to increase oil production. Such a finding by the WTO would lead to the absurdity that any measure taken by a country that prevents an industry from producing at maximum capacity may constitute an export restriction.

OPEC MCs' production management policy and its implication on crude oil prices must be distinguished from the issue of changes in the prices of oil products, such as gasoline or heating oil. It is elementary learning in petroleum policy and economics that, myriad complex and interrelated factors influence the prices paid by end-consumers for oil products to which OPEC's production management policy is only remotely connected. Refinery bottlenecks, geopolitical upheavals, unexpected rates of economic growth and lately, the impact of financial markets in varying degrees impact on the final products' prices. In some countries, taxes comprise 70% of the final price paid by consumers, such that even a major change in the price of crude might have only a minor impact on consumer prices.

2.3 Oil as a product

Oil has two unique characteristics; it is relatively inelastic and therefore subject to price volatility. It is also a finite (exhaustible) natural resource. Clearly, this makes commercialised oil different from other (manufactured or grown) commodities. In virtually all countries in the world, oil in its natural state is owned by the nation state or regional entities within the nation state, not by private individuals. Given the sovereign character of oil's ownership as a natural resource, its treatment in international trade law should reflect such sovereign control.

While some international publicists contend that the principle of permanent sovereignty over natural resources (PSNR) has been evolving along with globalisation, no one would deny that a state has sovereignty over its natural resources. The principle of PSNR is, perhaps, one of the possible examples for jus cogens or peremptory norms of international law on the same level as the principle on which the prohibition of apartheid-type racial discrimination is prohibited. The ICJ has ruled that the principle of PSNR is a principle of customary international law. It entails the right to freely use, control and dispose natural resources, inherent in the quality of statehood as part and parcel of territorial sovereignty-that is, the power of a state to exercise supreme authority over all persons and things within its territory. Moreover, sovereignty over natural resources, which is very essential to economic independence, implies complete freedom of action for a state in determining the use of these resources, and in the case of OPEC MCs, the freedom to determine the rate at which an exhaustible natural resource (oil) is produced. Consequently, it is also essential to distinguish between the right of a state to decide on what to produce and its rights to decide on what to do with a product.

It is also necessary to recognise the difference between oil in commerce (i.e., oil already extracted and stored in a manner suitable for transportation and export to the market) and oil in its natural state (i.e., oil in situ, still in the ground). Oil, in its natural state, is not covered by the GATT or any other trade agreement. Oil not yet extracted from its natural state, refined, and traded does not qualify as a 'product' or 'good'. It is important to bear in mind from the outset that, OPEC production management policies apply to only oil in situ. Once oil is produced, relevant trade rules may apply.

2.4 Oil as an exhaustible natural resource

That oil is an exhaustible natural resource goes without saying. OPEC MCs production management policy recognises that oil is a non-renewable source of income on which their economies overly depend and should, therefore, not be exclusively consumed by one generation. The Algerian Regulation Fund, Angola's Fundo Soberano Angolano (FSA) or Sovereign Wealth Fund, Iran's Oil Stabilization Fund, Kuwait's Investment Authority, Libyan Investment Authority, Nigeria's Excess Crude Account and Saudi Arabia's Public Investment Authority just to mention these are demonstrative of the desire to manage oil and oil revenues in such a manner as to satisfy the needs of present generation without compromising the ability of future generations to meet their own needs.

OPEC MCs production management policy is designed, in part, to prevent shortages of oil and oil revenues essential to them. It is important to bear in mind that, their oil production management policy is not intended to treat consuming WTO members differently, since once produced, oil is equally available to all foreign countries at the prevailing market price. Furthermore, OPEC MCs' measures do not constitute a 'disguised' restriction on international trade, nor do they constitute arbitrary or unjustified discrimination among countries where the same conditions prevail. OPEC MCs have been unequivocal about the fact that their production management policy is in response to market fluctuations in order to maintain price stability.

2.5 Oil as a security interest

The fact that crude oil is a major foreign exchange earner for OPEC Member Countries cannot be overemphasised. In other words, high oil price volatility has grave consequences to the economies of OPEC MCs (as well as all other countries). If uncontrolled, this could lead to economic as well as political instability in producing and consuming countries. It is ironical that whereas 'energy security' a euphemism for reliable supply of energy generally, and oil, in particular, at reasonable and stable prices for major consuming countries has become accepted dogma, the nexus between economic prosperity and political stability for producing/exporting countries whose economies are gingerly dependent on oil has not been much appreciated.

Yet, the hard but realistic view is that, OPEC MCs' production management is a policy designed to protect their essential security interests given their heavy dependence on oil revenues with the prospect that an oil glut could threaten their

economic development interests. In other words, economic interests are tantamount to security interests.

2.6 Oil as a basic commodity for developing countries

Article XXXVIII empowers WTO members to take action, including through international arrangements, to provide improved and acceptable conditions of access to world markets for primary products of particular interest to less-developed contracting parties and to devise measures to stabilise and improve conditions of world markets in these products including measures designed to attain stable, equitable and remunerative prices for exports of such products. Since the goal of GATT Article XXXVIII is to promote international arrangements that create more favorable trade terms for developing countries that produce primary products, certain measures to regulate international trade may be an intergovernmental commodity agreement designed to ensure more favorable markets for oil through the stabilisation of world oil prices, of particular interest to less-developed countries. However, since current OPEC MC policies apply to crude oil in situ, these policies do not relate to 'commodities' covered by GATT Article XXXVIII. This could be relevant to other policies in the future, however.

3 Conclusion

Oil prices volatility is inimical for oil exporting countries in planning annual national budgets and longer-term infrastructure investments. Exceptionally low prices discourage investment in the upstream sector, exacerbate economic consequences for exporting countries, and force cuts in domestic social services, and hinder efforts to diversify their economies. Excessively high prices may provoke a collapse in global oil demand and widespread fuel substitution. Similarly, wide oil price swings create difficulties in planning future capacities at all levels of the petroleum industry: production, transportation, refining and distribution, acting a disincentive to investments.

Furthermore, oil price volatility causes corresponding problems for oil consuming countries in planning infrastructure and also in managing their economies as it may trigger inflation and deflation by ultimately depressing demand. This could create instability in monetary and fiscal policies, while trade balances and currency exchange rates could be negatively impacted. Consistently high oil prices can cause political unrest in consuming countries, while creating difficulty in paying for imported energy in producing and exporting countries. Conversely, consistently low oil prices can cause political unrest in producing countries, whose economies are largely dependent on income from oil.

Recent events in global financial markets are quite revealing of the fundamental flaw in an unfettered market, which could be unruly absent suitable and effective regulatory intervention. The global energy (oil) market is no different. Acknowledgment of this hard but realistic fact coupled with the political will to chart a balanced trajectory for stabilizing the international oil market through appropriate mechanisms within the WTO that involve taking into consideration the legitimate

concerns of oil producing and exporting countries that are members of the WTO is sorely needed. The recent Doha Draft Modalities for Agriculture, which provides room for commodity-dependent developing countries to secure their interests under intergovernmental commodity agreements of which only producing countries of the concerned commodities are Members as part of the general exceptions to the provisions of Article XX(h) should, perhaps, provide a lamp to our feet and a light to our path forward.

7. The Liberalisation of Environmental Goods and Services (EGS) Trade and the Need for a Distinct EGS Agreement

Thaddeus J. Burns[106]

1 Introduction

As nations throughout the world become more focused on reducing carbon emissions and increasing the amount of energy produced from renewable sources, global trade in these environmental goods and services (EGS) will play a critical role. In anticipation of December's United Nations Framework Convention on Climate Change (UNFCCC) meeting in Copenhagen, countries are debating goals for carbon emission reduction as well as the means to achieve these goals. Furthermore, governments are in the process of enacting policies that are intended to facilitate the adoption of clean energy technologies. Ultimately these incentives will achieve the greatest deployment of low-emission technologies when they make investment in such projects profitable compared with alternatives. Measures that increase the cost or slow the implementation of clean energy projects therefore actually exacerbate an existing financial disadvantage faced by such projects and inhibit the realisation of the fundamental policy goals governments are pursuing. Yet, many WTO member states continue to retain or are planning to enact trade-restricting barriers and tariffs for cleaner energy EGS. This amounts to simultaneously taking one step forward and one step backwards.

Amid the worst and farthest-reaching global recession since the Great Depression, the deployment of renewable energy, energy efficiency, carbon capture and storage, and other environmental goods and services creates an opportunity to stimulate domestic economies and global commerce through the creation of new industries. Economic growth and greenhouse gas (GHG) reduction can be achieved simultaneously, but only with sound policies that promote trade and remove onerous restrictions.

To seize the momentum and provide a trade-related contribution to fight climate change, it is time for governments to make a firm commitment to reducing the costs they impose on EGS. An environmental goods and services agreement (EGSA) modelled on the Information Technology Agreements offers a vehicle for such a contribution. An EGSA would demonstrate practical resolve on trade-related environmental issues, while also creating progress on general trade liberalisation. Some may argue that a free-standing EGSA would undermine the Doha Round, but it makes little sense to delay action on climate-change-related cost reduction.

The Doha Round is critical for further liberalisation of the global economy and will

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significantly benefit emerging economies. However, a distinct EGSA would allow for discussions on environmentally sound trade to continue without being hampered by other issues that currently lack support among WTO members.

This paper will focus on low-emission energy products, particularly wind turbines (with some facts on other low-emission technologies), to provide examples of trade restrictive tariffs and non-tariff barriers being imposed by governments.

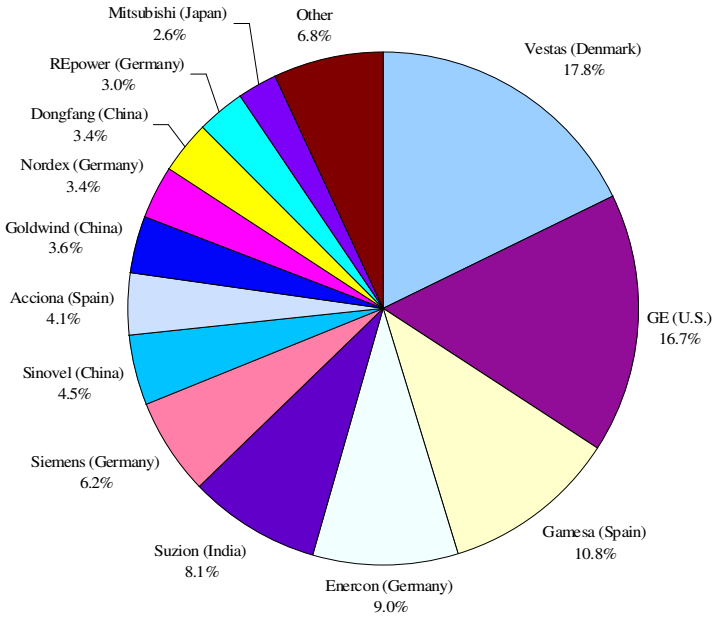
2 Tariffs

According to the U.S. International Trade Commission (USITC), five nations (Denmark, Germany, India, Japan and Spain) exported a combined 91% of wind turbines in 2008. Illustrated in the graph below, more than 93% of wind turbine production is concentrated among firms based in seven nations: Denmark, U.S., Spain, Germany, India, China and Japan.

The concentration of wind turbine production reflects the benefits of economies of scale and learning inherent in the manufacture of sophisticated, technology-intensive products. This does not mean wind turbine production will not expand to additional countries-in fact, such expansion is occurring. However it does indicate how counterproductive it is to maintain or create tariff barriers.

As of July 2009, a majority of WTO member states still impose tariffs on wind turbines, solar panels and large gas turbines (> 5 MW). For wind turbines, tariffs are

Figure 7.1 Major wind turbine manufacturers market share in 2008, by OEM



Source: USITC, 'Wind Turbines: Industry & Trade Summary,' June 2009. p. 3

levied by nearly 60% (91 of 153) of the countries, with a mean tariff of 7.4%. Solar panels have a tariff in nearly 43% (65 of 153) of the countries, with a mean tariff of 8.8%. Large gas turbines face tariffs in more than 55% of the countries (85 of 153), with a mean tariff of 6.6%. With manufacturers fighting to reduce costs and make low-emission energy competitive with less environmentally friendly alternatives, it is difficult to justify the government imposition of these additional tariff costs. The tables below are sample schedules of applied tariffs on these three classes of EGS.

Table 7.1 Applied wind turbine tariffs in 2009

Brazil	14.0%
Mexico	10.0%
China	8.0%
S. Korea	8.0%
India	7.5%
Russia	5.0%
U.A.E.	5.0%
U.E.	2.7%
U.S.	1.3%

Source: World Trade Organization, 'Tariff Download Facility.' HS Code: 850231. Accessed online, 24 September 2009.

Table 7.2 Applied solar panel tariffs in 2009

Russia	20.0%
India	15.5%
U.A.E.	5.0%
Columbia	5.0%
Brazil	3.8%

Source: World Trade Organization, 'Tariff Download Facility.' HS Code: 854140. Accessed online, 24 September 2009.

Table 7.3 Applied large gas turbine tariffs (> 5MW) in 2009

Nigeria	10.0%
Russia	10.0%
India	7.5%
S. Korea	6.3%
Canada	4.8%
E.U.	4.1%
China	3.0%
U.S.	1.3%

Source: World Trade Organization, 'Tariff Download Facility.' HS Code: 841182 Accessed online, 24 September 2009.

Brazil recently raised its applied tariff on certain wind turbines (< 2 MW) from 0% to 14% in advance of a major auction process for a wind farm project. Originally, the government sought to ban the importation of these turbines but shelved those plans after recognizing that such action would breach its WTO obligations.

The rapidly growing volume of EGS trade means that the total value of tariffs imposed is becoming quite significant. In 2008 trade in wind turbines and wind turbine parts reached nearly $6.6 billion, from $1.4 billion in 2003. The removal of these and other EGS-related tariffs by a critical mass of countries would send a strong signal: WTO nations are ready to address climate change and the increased need for cleaner energy, while remaining committed to the liberalisation of global trade.

3 Non-tariff barriers

In addition to tariffs, non-tariff barriers (NTBs) can serve as impediments to trade and are often even more destructive to greenhouse gas reduction goals and worldwide economic recovery than traditional tariffs. These barriers can take several forms: import bans, local content regulations, preferential contract bidding for domestic firms, restrictive technical standards, and government procurement restrictions, among others. Amid the global recession, many nations have instituted new NTBs. The table below highlights three recent NTBs in China, Canada and the U.S.

Table 7.4 Recent global NTBs

Country	NTB type
China	Government procurement; preferential contract bidding; 'Buy Chinese'
Canada	Local content restrictions; Quebec and Ontario
U.S.	Government procurement; 'Buy American'

Source: News releases and legislative records.

3.1 China

China represents both a great opportunity, because of the country's need to find alternatives to traditional coal-fired power, and a competitive challenge in the field of environmentally friendly power generation products. The Chinese government announced a $586 billion stimulus package in November 2008 to shore up the nation's economy, but included a government procurement restriction. Dubbed the 'Buy Chinese' policy, the stimulus mandated that 'government investment projects should buy domestically made products unless they cannot be obtained in reasonable commercial conditions in China.' At the same time, China has designated 'Independent Innovation Products' and provides special procurement preferences for those products.

In June 2009, no foreign-owned wind turbine supplier was selected in a $7 billion wind turbine competition. Fundamental factors such as life cycle cost and investment rate of return were not considered in the evaluation process. According to the Chinese Wind Energy Association, only 24% of newly installed capacity in 2008 was sourced from abroad.

3.2 Canada

The Canadian province of Quebec applied a local content requirement for wind turbines in 2007, and Ontario may replicate the policy this year. The Quebec policy mandates that at least 60% of wind turbine development costs must be incurred locally in Quebec. In addition to being a difficult metric to track, concentrating development costs in a single province may lead to increased energy prices due to the reduced pool of suppliers and engineers.

Ontario passed its Green Energy Act in June 2009 and one of the provisions that is currently being finalised is the local content restriction. Foreign governments and corporations have requested it be limited to 10-15%, but some politicians in Ontario have called for a 60% level, analogous to Quebec. Analysts have already said that a stringent local content restriction can harm the economy of Canada's largest wind-power-producing province and increase overall energy costs for end-users.

3.3 US

'Buy American' provisions were included in the American Recovery and Reinvestment Act of 2009. Although the final legislation exempted 'relevant manufactured goods [that] are not produced in the United States in sufficient and reasonably available quantities,' and required the U.S. to abide by its international trade obligations, Buy American provisions remained in the law. The stimulus earmarked $43 billion for green technology and thus the policies affecting its investment are quite significant.

These non-tariff barriers serve as a major impediment to the proliferation of cleaner energy technologies. Governments may experience some short-term benefits in these forms of protectionism, but ultimately these policies will increase the cost of adopting low-emissions technologies. An EGSA that effectively addresses these NTBs would be greatly beneficial in allowing countries to access these cleaner energy technologies in a more efficient and economic manner.[107]

Paragraph 31 of the Doha Declaration gives negotiators the ability to: 'enhance the mutual supportiveness of trade and environment…to seek (iii.) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.' The WTO Secretariat then followed up with a list of 480 goods and services that would fall under the classification. However, disagreement over a variety of other trade issues caused the Doha Round negotiations to be suspended in July 2008 without consensus on an EGSA.

A later study by the United Nations Conference on Trade and Development (UNCTAD) classified EGS in a different way. It concluded that breaking down EGS in to three categories would be easiest: equipment, services and resources. The U.S., E.U., Canada and Japan responded to the UNCTAD report in April 2007 with a proposal that listed 153 goods and services as EGS under the UNCTAD system. The World Bank Group and U.N. Energy released a joint report shortly afterwards that proposed other ideas for an EGSA. The Asia-Pacific Economic Cooperation (APEC) also suggested further discussions on an EGSA after noting that trade liberalisation would 'advance the climate and security goals' of member countries. In November 2007, a joint E.U.

107 EGSA history and development.

– U.S. proposal called for tariff and non-tariff barrier reductions on EGS and laid the foundation for an EGSA distinct from WTO Doha Round negotiations. This progress was continued in July 2008 at the G-8 Summit in Japan. The G-8 memorandum read in part:

> Efforts in the WTO negotiations to eliminate tariffs and non-tariff barriers to environmental goods and services should be enhanced with a view to disseminating clean technology and skills. Additionally, consideration should be given to the reduction or elimination of trade barriers on a voluntary basis on goods and services directly linked to addressing climate change.

Despite disagreement over other Doha Round issues, many plutilateral organisations have supported the idea of a distinct EGSA that would help countries achieve their renewable energy and carbon reduction goals. The Doha Round contains many valuable provisions, but it does not make sense to wait for progress on an EGSA. Serious discussions should commence with as many WTO members as possible to ensure that a broad consensus can be achieved.

4 Conclusion

Tariffs and trade barriers represent discretionary government policies that increase the cost of environmentally friendly goods and services, thereby deterring their application. This in turn reduces nations' abilities to address GHG emissions and increase cleaner energy sources. The enactment of these policy measures further widens the cost spread between traditional and cleaner energy.

Countries should strongly consider the adoption of a distinct EGSA outside of the Doha Round. An EGSA would have the benefit of not being mired in the more controversial trade issues that lack broad support. The long-term goal of an EGSA should be universal WTO member participation in removing both tariffs and non-tariff barriers for an agreed list of goods and services. The path to realizing that goal may involve interim agreements in the interest of demonstrating progress and removing barriers as rapidly as possible. For instance, an initial agreement might eliminate tariff barriers only, be limited to an already agreed upon product list (for instance, the list developed by the World Bank in 2007) and be adopted by a subset of WTO members accounting for most current trade in these products. Subsequently, additional countries could sign on to the agreement, more products could be added and coverage could be extended to services and non-tariff barriers.

8. The Challenges of Trading Alternative Energy

Géraldine Kutas[108]

For many years, Brazil has been the only country with a well established policy to promote the use of biofuels, and especially ethanol. The origin of ethanol production in this country goes back to in the 70s when the Proalcool program was developed by the government in response to the two oil shocks. However, at the beginning of the 2000s, more countries developed an interest in producing and using biofuels and the production of these renewable alternative fuels increased considerably-from 15 billion liters in 1990 to 79 billion liters in 2008, of which 84% are ethanol. Two main factors explain why the demand for biofuels started to boom. The first factor is the rising interest of developed countries in using ethanol as an additive to regular gasoline as a way to reduce their dependence on fossil fuels for transportation and also aid in the protection of the environment by reducing CO_2 emissions; while the second factor is the introduction of flex-fuel vehicles FFV (cars that can run on 100% ethanol, 100% gasoline or any mix of the two fuels) in the Brazilian market in 2003, another significant contribution to the growth in ethanol production. These vehicles proved to be very popular and today 90% of the sales of new cars are FFV in Brazil. This way, ethanol is used in two different ways in Brazil: blended into regular gasoline at a mandatory rate fluctuating between 20 and 25% and/or directly in the tank of FFV. Thanks to this, the country has already managed to replace 50% of its gasoline consumption with renewable ethanol.

Over the last decade, several countries have passed legislations to promote biofuels. In 2006, the United States (U.S.) adopted the Renewable Fuels Standard (RFS) that mandates the consumption of 136 billion liters of biofuels by the year 2022. Two years later the European Union (EU) approved a directive on the promotion of renewable energy sources to incorporate at least 10% of renewable energy in the transport sector in 2020. This regulation replaces Directive EC 2003/30 that established a non-binding target of 5.75% for biofuels consumption in 2010. In Asia, the use of renewable biofuels is also encouraged in some countries. A mandatory 10% biofuels blend is in force in five Chinese provinces as well as in the largest cities of five additional provinces and a 3% ethanol blend is allowed in Japan. Other Asian producing countries, such as Thailand, Philippines and Indonesia are also promoting larger-scale biofuels programs. Various countries in Africa are promoting the production and use of biofuels as well.

However, despite the enthusiasm of many countries for biofuels, the international

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market remains small and volatile. Approximately 10% of the ethanol world production is traded and this share did not increase in recent years although production is booming. Brazil, as the world pioneer in the production of ethanol, remains the largest exporter, with 5.1 billion liters exported in 2008 to more than 40 countries, although the exports are still concentrated in two markets: the US and the EU. Nonetheless, exports are heavily dependent on unpredictable windows of opportunities and, up until now, ethanol has been unsuccessful in becoming a global commodity, mainly due to the increasing tariff and non-tariff barriers that this product is facing in the majority of the big markets.

1 Tariff barriers

From a customs classification perspective, all biofuels do not enjoy a similar treatment. While biodiesel is treated as a chemical product and is classified in heading 3824, ethanol is considered an agricultural product and is classified in heading 2207. This differentiation results in an asymmetry of tariffs applied to biofuels, with biodiesel benefiting from relatively low tariffs in the majority of the big markets and ethanol facing very high import duties as shown in Table 8.1.

Table 8.1 Bound tariffs for biofuels

	Ethanol (tariff in ad-valorem equivalent)	Biodiesel (tariff in ad-valorem equivalent)
European Union	42.9%	6.5%
United States	46%	1.9%
Japan	27.2%	3.9%
China	30%	9%

Note: Tariffs on ethanol imports are usually specific or compounded tariffs. They have been converted into ad-valorem equivalents according to the methodology agreed upon in 2006 in the framework of the Doha Round negotiations.

Sources: WTO tariff database and USITC.

High tariff barriers constitute the main obstacle to the trade of ethanol, which is the main source of renewable energy that is traded internationally. As any alternative fuel currently available on the market, the production costs of ethanol are often higher than the ones of oil production. Brazil is the only country where ethanol is competitive at 4050 US$ per barrel. As such, the high tariffs imposed on ethanol-that do not apply to oil products-make imported ethanol uncompetitive with respect to fossil alternatives in the majority of the consuming markets and, therefore, severely limit trade flows. Unfortunately, perspectives for tariff reductions do not look bright. At the Doha Round negotiations, the EU has already flagged its intention to classify ethanol as a sensitive product which means that the tariff reduction will be extremely limited. In regards to the U.S., the more restrictive component of its tariff is a secondary duty (54 cents per gallons) that has been continuously renewed by the U.S Congress over the last decades and that is not included in the U.S. bound tariff

schedule. This way, this duty will not be affected by the tariff cuts resulting from the Doha Round.

What is the logic behind a trade policy that taxes imports of clean, renewable fuels like sugarcane ethanol, but allows almost duty free access for dirty, non-renewable and price-volatile oil?

If major economies are serious about reducing their consumption of fossil energy in order to limit their CO_2 emissions, bioenergy and ethanol in particular cannot be considered as agricultural products anymore. A differentiation regarding the final use of the product must be established in order to change the tariff classification for bioenergy and set a lower tariff for this product. In the case of ethanol, this could be easily done since the specifications of the product are different depending on the end-use (fuel, industrial and beverage). Another way to solve this issue is to advance the discussions on environmental goods and services in order to include bioenergy products. Currently, only equipments to produce bioenergy are incorporated into this list.

2 Environmental requirements

High tariffs are currently the main challenge for bioenergy trade. However, new non-tariff barriers are emerging in different places of the world and their potential to limit trade in bioenergy is significant.

Some countries are conditioning the use of bioenergy in their market to the respect of specific sustainability criteria. The objective is to ensure that the production of bioenergy results in a real benefit in terms of CO_2 emissions avoided compared to fossil alternative, but also to guarantee that the production of bioenergy is not provoking irreversible damages to the environment. The EU took the lead in this aspect with the approval of the Directives EC 28/2009 and EC 30/2009 that make mandatory, for biofuels and bioliquids, the compliance with sustainability requirements including a minimum threshold for greenhouse gas emission (GHG) reduction and the designation of 'no-go' areas where feedstock used to produce biofuels cannot be grown. Although sustainability requirements are less strict, the U.S. are also discussing a revision of the legislation-the Renewable Fuel Standard-that establishes threshold for biofuels GHG emission reduction that includes emissions related to indirect land use changes. In parallel to these mandatory requirements, voluntary sustainability schemes proliferate and are increasingly required by large purchasing companies.

To what extent these sustainability requirements represent a challenge for the trade in alternative energy?

First of all, we need to underline that the non-compliance with the mandatory sustainability schemes do not, *per se*, prevent the entrance of these products in the to enter the EU or the U.S. markets. However, products that do not comply with the requirements will be excluded de facto from these markets since they will not be eligible to receive fiscal incentives (excise tax reduction compared to fossil fuels) or to count toward the emission reduction targets of these countries. Second, it has to be mentioned that sustainability criteria apply to both domestic production of bioenergy and imports. There is no discrimination, at least on paper.

Having said that, sustainability requirements present challenges from a trade perspective, it is interesting to note that neither the EU nor the U.S. have notified their draft or adopted legislations on sustainability requirements for biofuels to the TBT information system. The lack of transparency on how the sustainability standards are established constitutes a real challenge for foreign producers and therefore for trade, and can lead to discrimination.

Article XX of the GATT provides WTO members with autonomy to determine their own environmental objectives. Two exceptions to the GATT rules are of particular relevance to the protection of the environment: paragraphs (b) and (g). Pursuant to these two paragraphs, WTO members may adopt policy measures that are inconsistent with GATT disciplines, but necessary to protect human, animal or plant life or health (paragraph (b)), or relating to the conservation of exhaustible natural resources (paragraph (g)). However, the provisions of Article XX do not provide any guideline to assess whether human, animal or plant life or health need to be protected or not. No scientific or internationally accepted justification is required. While exhaustible natural resources are clearly established by international conventions and negative effects on health are well scientifically documented, no international conventions recommend to fully preserving all the forests and all the grasslands around the world as required in the EC directives. The absence of scientifically sound justification for prohibiting the use of some specific areas can lead to real discrimination, especially when these areas are located abroad. In fact, the 'no-go' areas designated in the EU legislation are types of land located in tropical countries but almost absent of the European territory (wooded land of native species, wetland and peatland, grasslands).

The same argument applies to the methodology used to calculate the emissions of biofuels due to indirect land use change. This is one of the most controversial issues currently under discussion in the scientific community where no consensus has emerged. However, both the U.S. and the EU have developed their own methodologies and are ready to include them in their legislations. While there is no doubt that CO_2 release derived from land-use changes is a risk for the environment since it contributes to climate change, the first step consists in proving whether these emissions exist, what their magnitude is and to what extent they can be attributed to biofuels. In the absence of scientifically robust methodologies that can prove the causes and the effects, this kind of standard opens the door to the adoption of arbitrary measures to discriminate against some products.

In fact, sustainability criteria intend to discriminate against products and not countries. But the discrimination clearly exists since equivalent products in terms of end-use – in this case fossil fuels – are free of requirements. In addition, sustainability criteria only apply to ethanol or vegetable oil (in the case of biodiesel) to be used as a fuel. Industrial use and food and beverage applications of these products are exempted from such requirements while their production has exactly the same impact on the environment than if used as a fuel.

Finally, the proliferation of sustainability criteria, mandatory or voluntary, is counterproductive. Governments, large multinationals and multi-stakeholder fora are developing their own requirements in isolation. As a result, producers face a multitude of criteria to comply with, which proves extremely costly and burdensome from an administrative point of view. International cooperation in this field is

absolutely necessary in order to harmonise the requirements and the implementation schemes aiming at the protection of the environment. Otherwise, markets for bioenergy will be extremely fragmented and bioenergy will never become a globally traded commodity. Moreover, some degree of national adaptation must be permitted. In the US-Shrimp case, the Appellate Body was of the view that rigidity and inflexibility in the application of the measure (e.g., by overlooking the conditions in other countries) constituted unjustifiable discrimination. Mandatory schemes, such as the EU directives, should provide some flexibility for national implementations in non-European countries.

3 Conclusion

Alternative energy, and especially ethanol, is not a globally traded commodity yet. The first condition for trade to develop is the existence of consuming markets, but markets are still limited to a few countries that rely on their own domestic production as a way to promote energy independence and to support rural areas. The existence of a market for alternative energy also relies heavily on the adoption of public policy to promote its use. First, because its production costs are often higher than for traditional fossil energy and second because the production of alternative energy is usually much more fragmented than the production of traditional fossil energies and their market power is totally asymmetric, especially when the later are also the main distributors of energy. Asymmetries of conditions also apply to trade. Tough conditions, such as high tariffs and sustainability requirements, are imposed on trade in alternative energy but are not required from traditional fossil competitors.

If the world community is serious about reducing its dependency on fossil energy and its CO_2 emissions, a level playing field for trade in alternative energy shall be sought rapidly.

Floor Discussion of Part II:

Question from a member of the audience (ODI)

From the presentations I infer that not much has been done in terms of trade and environment in the current round of negotiations, or rather not enough. In light of that, I would like to ask how to operationalize the trade and environmental talks in the WTO framework, which is the right framework in this respect. Three options: (i) starting a parallel negotiation now on trade and environment, a discussion which would run parallel to the Doha Development Agenda (DDA) but not really related to the happy conclusion of the DDA; (ii) stick to business as usual, try to mainstream trade and environmental negotiations within this current round and try to finish those off along with the DDA; or (iii) scrap the DDA and start again since in 2001 environment was not as important as it is now and try to start a new round of negotiations where trade and environment are at the core of the round. Another short question, you mentioned tariffs as a medium for wind turbines. How important are subsidies by government to stimulate this industry v-à-v these kinds of tariffs? Tariffs seem to be second order in terms of importance when compared to subsidies.

Flávio S. Damico

Negotiators claim that each round lasts longer than the previous one. Since the Uruguay Round lasted eight years, the validity term of this round is now about right. Perhaps with some additional effort we could get there. I am against the notion that we could scrap the huge effort that was put into this. We better try to consolidate what we have, close the deal and move on, after which, if needed, we can go ahead and start a new round of negotiations with a new mandate to address these different challenges. This notion that we could proceed with this fuite en avant without looking at those things and trying to find multilateral acceptable solutions is not in the best interest of the international community. This question also relates to the relationship between subsidies, tariffs and non-tariff barriers. All of these have an enormous effect on trade and environment. To decide on how we are going to handle them simultaneously is difficult. One of the main drivers of legislation and climate change has to do with the attractiveness to the industry of allowing subsidies to be generated or used by them in a way that could revamp their productivity level. We do not have solutions for all those things. My sense of the trade and environment negotiations in the WTO is that we actually may find some commercial outcomes that are meaningful. The most important result is still in systemic terms, to show that this organization is doing something that is mutually supportive to the international efforts by the international community. Why trade and environment negotiations are not moving forward? It is a chicken and egg issue. We have a major challenge that has to be dealt with in the Copenhagen process. It would give a clear indication of the commitment of the international community to the environment. In terms of institutional strengthening, it would be good that an outcome in the WTO would accompany an outcome in Copenhagen but this does not seem feasible. Moreover, the way countries have positioned themselves throughout this round indicates that people were not waiting for that to happen. It is possible to draw an analogy with agriculture, where there are two different ways of negotiating. The EC would undertake domestic reforms and bring it to the multilateral level, while the U.S.

would be less comfortable with that approach. It is not to be expected that we will have a definition of the U.S. approach in the short run. The legislation as developed in the EU is actually applicable to a marginal share of the land, while for other countries, in particular developing countries, producers would have to make very stringent self restrictions.

Thaddeus J. Burns
I select option number 1: a parallel discussion of environmental goods and services with the DDA. Certainly not business as usual, since (i) business leaders feel that the progress in the WTO is very slow. It would not be possible to say that you were able to push an agreement to liberalize trade in a certain area and this will be beneficial to the company. We have to avoid business as usual. (ii) With regard to climate change, there is great urgency. There is an opportunity to the trade community to make sure we come up with solutions to climate change. The sequential approach is not an option. We are strong supporters of the DDA, but we do not believe any discussion on environment should be waiting for the conclusion of this round. With respect to tariffs, the economic viability of wind as energy is very much a factor of what are the tariffs, what is the enabling environment they put into place to favor wind energy. Wind energy cannot function unless there is an enabling environment, i.e. national economic incentives to stimulate investment in technology and wind energy. They are just reaching the point of being economically viable. Even a small tariff with the technology that is just evolving makes a big difference. Countries, that have low tariffs, have experienced an enormous growth.

Question from a member of the audience (IISD)
We spoke about export restrictions in the context of the WTO and I welcome the intervention by Mr. Herman [Part I above] on the importance of investment agreements. The ECT also has investment provisions that very much mirror provisions of traditional investment treaties. How has OPEC looked at the investment framework? Some of the jurisprudence of investment treaties states clearly that export restrictions will be covered by investment treaties. This means that if we have a problem in the WTO with measures or remedies, it will be a different issue in the investment field, because of its different dispute settlement system. I am interested in comparing the two systems, because not just the ECT but also general investment treaties will cover export restrictions. How do these two relate? How does OPEC look at that since the countries have signed many investment treaties?

Daniel Crosby
I brought an excerpt of a report that was done by the U.S. state department that could provide a context to this question. This report addressed the issue of customary international law, which has been injected in the discussion regarding investment treaties, since there is either customary international law or specific standards in this context. None of these are specific to the issue of energy production. According to this report, customary international law governs the treatment in taking of foreign investment - and for this conference in respect to energy -, concluding that for industrialized societies, customary international law provides for prompt, adequate and effective compensation. In the developing world, the understanding is very

different, since they believe that customary international law provides countries with permanent sovereignty over their resources. It is an interesting debate, but in the context of this conference, it is probably overblown.

Ibibia Lucky Worika
According to your question, you believe that investment treaties will eventually incorporate export restrictions. OPEC does not have any official position on this issue. I entrust that in my private and personal opinion, OPEC member-countries do not adopt export restrictions. Thus, the issue whether agreements should cover this or not does not arise.

Question from a member of the audience (OECD)
I was intrigued by the presentation on the European sustainability standards on ethanol and that there was a provision on one of the 'no go' areas such as peat land. However, several European countries are themselves harvesting from peat land and using it for energy purposes. Can anyone shed some light on the coherence between these two policies?

Question from a member of the audience
What is your view on climate change policies actually working as an impediment to the Doha trade talks? The U.S. has just agreed to an 8-billion-dollar package for the paper industry, with an environmental label on it, and Canada has done something quite similar. This leads Brazilian industry to approach the government and request them not to agree to any tariff cuts in the Doha round. How serious should you take those trends and how should you address them? Do we have to talk about tariff cuts and address environmental issues separately? Another question concerns the buy-national provisions: Can you legally do something and if the WTO is too slow to address this, where would or should you address them?

Flávio S. Damico
In the area of paper, the huge level of subsidies that is being granted to the industry in the U.S. provokes actions throughout the planet in terms of all those competing industries. They feel that they cannot provide further market access when the playing field is so uneven by the huge amount of subsidies. We have to consider whether those subsidies are compatible with WTO rules or not and, in terms of the negotiations, I understand that the reaction of the Brazilian industry is more devoted to the fact that there are calls from specific sectors which would want a top-up.

Thaddeus J. Burns
Concerning WTO disciplines that are relevant to buy-national programmes, it is the WTO GPA. The problems are at the local level, so one should question whether those entities are bound by this agreement. And I think the answer is no. China has not acceded to the GPA. We need to look to the commitments that were made in the G20. This is a question of good policy and not of whether governments are abiding by their strict WTO obligations.

Question from a member of the audience

I share the statement that it is important that the organization shows that it is answering to some of the challenges that have been raised because of climate change. When we start discussing climate change and trade, we quickly get into the discussion of BTA. Many think that this is the main issue the WTO has to deal with, but it is not. There is a mandate to negotiate on environmental goods liberalization, reduction of tariffs and non tariff barriers. These are much more relevant contributions the WTO can do to help countries address climate change. I am interested in the local content requirements that have been pointed out as barriers to trade in environmental goods and technologies, because it is something that is already prohibited according to the WTO rules. Considering sustainability criteria of biofuels, the EU has defined them, but the answer to this apparent incoherence is that these criteria apply to biofuels, whether they count for 10% of renewable energy used in transport or not. It applies to both, domestic and imported products. The major issue is whether they count to the defined objective and not whether they are imported or not.

Question from a member of the audience

Will people ever see OPEC managing the price volatility that you mentioned in the markets on its own behalf?

Question from a member of the audience (UNCTAD)

The certification of biofuels was brought to our attention and the fact that through certification, good biofuels are separated from bad biofuels. Only certified biofuels or sustainable biofuels can count toward the utilization target and can benefit from fiscal incentives. This distinction and the certification process are therefore of a particular significance. It seems that we are coming back to the idea of a product differentiation based on the market, that is, that countries increasingly differentiate between products according to several criteria, including climate-change related criteria. Since this issue is not new to the WTO, would this not become a good opportunity to address the question and definition of like products?

Ibibia Lucky Worika

Imagine a situation in which OPEC did not exist at all. And all countries would have to regulate their own production so as to avoid excessive volatility. That does not suggest that OPEC is the only instrument that has to manage this issue. There are many traders in the field of oil and OPEC has nothing to do with the price definition of this product. OPEC, as an organization, does not produce oil. OPEC member-countries are the ones that produce oil and they are sovereign countries. They decide on how much oil they want to produce, since that is a right we cannot take away from them. In addition, there is no strict dispute settlement mechanism in OPEC, so if one country decides not to comply with the suggestions, there is nothing OPEC can do, that is, OPEC cannot force anyone to comply. However, if OPEC did not exist, perhaps this situation would be worse.

PART III

Transport and Transit

9. Energy Transport and Transit in the WTO

Mireille Cossy[109]

1 Introduction

The energy sector has become increasingly visible in the WTO. Industry reforms and technological developments have created room for private operators, which has allowed energy services to be identified as a negotiating topic in the Doha Development Agenda (DDA) negotiations. Several important energy-exporting or transit countries have recently acceded to the WTO (Saudi Arabia, Oman, Ukraine), and others (Algeria, Iran, Iraq, Kazakhstan, Libya, Russia, etc.) are currently negotiating their accession, bringing with them a substantial part of energy trade. Furthermore, the interaction between trade and climate change, biofuels, and concerns surrounding energy security have also raised the profile of energy-related issues in the WTO.

Existing WTO rules provide a basic framework for trade in energy goods and services. However, it is an incomplete puzzle, in particular when it comes to addressing the complexities of energy transport and transit.

One should first recall some key characteristics of the WTO system which have important consequences in the energy sector.

The WTO has different rules for trade in goods and trade in services. The distinction between trade in goods and trade in services is not always easy to apply in the energy sector and may lead to artificial determinations. It is at odds with everyday business reality (especially in the upstream hydrocarbon segment). This dichotomy between goods and services has consequences in the field of investment, for instance. While trade in service benefits from basic investment disciplines contained in the GATS, the TRIMS Agreement, which applies to trade in goods, does not protect investment per se. And, as we shall see, transport and transit are very much on this 'dividing line'.

The WTO system is largely based on 'don't', while 'do' would be necessary for regulating important segments of the energy industry. In other words, WTO disciplines primarily aim to prevent governments from discriminating among trading partners (most-favoured-nation treatment) or between foreign and national products (national treatment), from imposing import restrictions, or market-access restrictions

109 Counsellor, Trade in Services Division, WTO. Views and opinions expressed in this paper and during the Conference are personal and cannot be attributed to WTO Members or the WTO Secretariat. Thank you to Antonia Carzaniga and Gabrielle Marceau for their useful comments.

on services, etc. However, WTO rules obliging governments to act in order to prevent anti-competitive practices by monopolies and exclusive suppliers are very limited for the time being. The lack of 'positive' obligations, in particular with respect to access to and use of transport facilities, is a problem when it comes to applying WTO disciplines in the energy sector.

The WTO has more detailed and stringent rules for imports than for exports. On the other hand, countries are more often concerned with the fact that export restrictions (export prohibitions or export taxes) may prevent them from buying energy resources.

2 Transport of goods

Rules for the transport of energy goods are the same as for the transport of any other good in international trade. Generally speaking, WTO rules do not contain detailed rules regarding goods transport. Article III of the GATT (national treatment) stipulates that internal taxation and regulation affecting, among other things, distribution and transportation of goods cannot discriminate against imported products. Differential internal transportation charges are allowed if they are based exclusively on the economic operation of the means of transport and not on the nationality of the product (Article III:4).

The main transport-related obligation in the GATT is Article V on 'Freedom of Transit', which is based on the 1921 Barcelona Convention and Statute on Freedom of Transit. The importance of GATT Article V in international trade is inversely proportional to the interest this provision has attracted among WTO Members and scholars so far.

This provision establishes the principle of the freedom of transit for all goods, including energy goods, and contains a number of substantive legal obligations (most-favoured nation, prohibition to apply customs duties, etc). Article V is less detailed than the corresponding provision (Article 7) of the Energy Charter Treaty. For instance, it contains a very limited national-treatment obligation, does not entail disciplines regarding the construction of new facilities, and does not contain the specific dispute settlement provisions contained in ECT Article 7(6) and 7(7).

According to Article V, goods are in transit when the passage across a country 'is a portion of a journey beginning and terminating beyond the frontier' of the country across whose territory the traffic passes (Article V:1). This provision further establishes that 'there shall be freedom of transit through the territory of each contracting party, via the routes most convenient for international transit, for traffic in transit to or from the territory of other contracting parties. No distinction shall be made which is based on the flag of vessels, the place of origin, departure, entry, exit or destination, or on any circumstances relating to the ownership of goods, or vessels or of other means of transport' (Article V:2). Countries must not subject transit traffic to 'unnecessary delays or restrictions' and are not allowed to levy customs or transit duties. Transportation charges or charges commensurate with administrative expenses entailed by transit or with the cost of the services rendered may be levied. Charges and regulations imposed on traffic in transit must be 'reasonable', having regard to the conditions of traffic. Transit countries cannot discriminate among WTO

Members regarding traffic in transit.

Several comments should be made with respect to GATT Article V:

- Article V applies to energy goods, such as oil and gas, but also electricity (the majority view seems to consider that electricity is a good).
- There is a controversy as to whether Article V applies to fixed infrastructures, such as electricity grids and pipelines. Some argue that this provision applies to 'moving' modes of transport only. However, nothing in the text of Article V seems to support such a reading. It is true that fixed infrastructures, such as pipelines and power grids, are not themselves in transit. However, the goods they transport are in transit and, thus, are covered by Article V: they fall under the broad definition of 'traffic in transit' (para. 1), which obviates the need to spell out all possible modes of transport (which Article V does not do, but refers instead more generally to 'vessels' and 'other modes of transport'). In fact, the only mode of transport excluded from the scope of the transit obligation (aircraft in transit) is explicitly mentioned in paragraph 7 of Article V.
- Article V:5 contains a most-favoured-nation (MFN) obligation with respect to charges, regulations and formalities imposed on transit goods. It might be argued that Article V:2 entails a limited national-treatment obligation, i.e., requirements not to discriminate between foreign and national goods in transit. However, there is no requirement to treat goods in transit like goods destined for, or originating in, the domestic market.
- Article V is an inter-state obligation. It is unclear whether governments can be required to oblige energy companies to comply with GATT transit disciplines.[110]
- There has been little 'practical' experience with GATT Article V so far. Some disputes arose, in GATT and in the WTO, concerning the scope of this obligation, but they were settled between the parties concerned. This provision has only recently been applied in the dispute *Colombia – Indicative Prices and Restrictions on Ports of Entry*, and the Panel adopted a broad interpretation of the transit obligation.[111]
- The importance of GATT Article V is likely to grow in the years to come, particularly in relation to trade in energy products. For many countries, transit is directly linked to security of supply. In fact, this tendency is noticeable in the WTO.

Transit issues have been discussed in some recent accession negotiations. In this context, several Members have committed, in their Accession Report, that they 'would apply [their] laws and regulations governing transit operations and would act

110 Note that the Panel on *Korea – Various Measures on Beef* described the legal status of Article XVII:1(a) in the GATT framework in the following terms: 'Article XVII.1(a) establishes the general obligation on state trading enterprises to undertake their activities in accordance with the GATT principles of non-discrimination. *The Panel considers that this general principle of non-discrimination includes at least the provisions of Articles I and III of GATT.*' (Panel Report on *Korea – Various Measures on Beef*, WT/DS161 and -/169, emphasis added, finding not reviewed by the Appellate Body). The question arises whether this finding might be broadened to include other GATT obligations, such as Article V, or, at least, the non-discrimination obligations contained in Article V.

111 Panel Report on *Colombia – Indicative Prices and Restrictions on Ports*, WT/DS366/R, circulated on 27 April 2009.

in full conformity with the provisions of the WTO Agreement, in particular Article V of GATT 1994'.[112] Ukraine's Working Party Report contains a specific reference to energy: 'Ukraine would apply all its laws, regulations and other measures governing transit of goods (including energy), such as those governing charges for transportation of goods in transit, in conformity with the provisions of Article V of the GATT 1994 and other relevant provisions of the WTO Agreement'. These commitments should not impose additional substantive transit obligations to the Members concerned, though.

Under the 'trade facilitation' agenda of the DDA negotiations, Members have been discussing possible improvements and clarifications of the transit obligation contained in GATT Article V. Some of the proposals directly concern transit of energy goods. For instance, it has been proposed: (i) to spell out that Article V applies to fixed infrastructures, such as pipelines and electricity grids, (ii) to clarify that Members should undertake that enterprises with special privileges should act in a manner consistent with Article V, and (iii) to introduce a national-treatment obligation for goods in transit.

3 Energy transport services under the GATS

Since 1995, the General Agreement on Trade in Service (GATS) has applied basic GATT principles to international services transactions. The GATS had to 'invent' new concepts and disciplines in order to take into account the different nature of services trade. This agreement covers all services, including energy services, provided through four different modes of supply. With the commercial presence mode of supply, the GATS provides basic protection to investments by energy services providers. The broad scope of the GATS is compensated by a high degree of flexibility, in the sense that its main market-opening provisions, the market-access and national-treatment obligations, apply only in sectors where Members have undertaken so-called 'specific commitments' in their national schedules. Market access concerns essentially the absence of quota-type limitations; national treatment obliges to grant foreign services and services suppliers conditions of competition no less favourable than those offered to national services and service suppliers. In the absence of specific commitments, GATS obligations are limited: the most-favoured-nation treatment is the main obligation that Members have to apply in all sectors.

Energy services were not addressed as a distinct topic during the Uruguay Round. This is explained by the fact that, at the time, private operators had a limited role in the energy sector which was still largely in public hands. However, progressive unbundling of state-owned utilities and technological developments have created room for private operators, which, in turn, has raised the profile of energy services in WTO negotiations.

The nomenclatures most commonly used by WTO Members under the GATS[113] do

112 *Technical Note on the Accession Process*, Note by the Secretariat, WT/ACC/10/Rev.3, 28 November 2005.

113 This includes the Services Sectoral Classification List (MTN.GNS/W/120) and the 1991 UN Central Product Classification (CPC prov.). These nomenclatures are voluntary tools that Members can use to establish their schedules of commitments. They do not determine the scope of the GATS.

not contain a separate chapter for energy services. Nevertheless, energy-related activities are covered, either explicitly or subsumed under other sectors. Two important activities relating to energy transportation are:

- services incidental to energy distribution, which concerns in particular the transmission and distribution of gas and electricity,
- pipeline transportation of fuels, which includes transport of oil and gas by pipelines.

Other means of transport (road, rail, maritime) which are relevant for energy products are also listed, as well as bulk storage of oil and gas, which is a necessary complement to transport. Construction services of energy transport infrastructure (such as long distance and local pipelines, power lines) are classified under different headings.

Few Members have undertaken specific commitments regarding transport services of energy: 18 schedules record commitments on services incidental to energy distribution and 12 on pipelines transportation of fuels. Moreover, most of the Members which have undertaken specific commitments in these two sectors have acceded to the WTO during the last 10 years or so. There are various possible reasons why recently acceded Members are overrepresented when it comes to commitments in these two sectors: (i) the dynamic of accession negotiations, where countries must 'pay' their entry ticket to the WTO and undertake a much higher level of obligations than WTO Members, (ii) the fact that some countries which acceded recently to the WTO are important energy producers, and (iii) the increasing interest that energy-related issues are attracting in the WTO.

What kind of benefits can GATS-specific commitments bring to the industry? Generally speaking, GATS commitments contribute to more transparency and predictability regarding conditions for acceding markets. More specifically:

Commitments on cross-border trade (mode 1) have gained commercial importance as technological developments increasingly allow services to be supplied electronically (e.g., remote control of pipelines).

Commitments on commercial presence (mode 3) can address measures affecting energy services providers, such as nationality and residency requirements, or restrictions on foreign investment (limitations to foreign capital participation) and on the legal forms of doing business. Mode 3 commitments could also be undertaken when there is a monopoly, for instance in gas and electricity transmission and distribution services; in such cases, they could, for instance, grant the right to invest in an existing monopoly.

Commitments on the temporary movement of natural persons (mode 4) could, for instance, contribute to easing the intra-corporate transfers of technicians and managers working for energy services companies.

Who is a supplier of energy-transport services under the GATS? In practice, firms may transport their own fuels or transport energy goods owned by third parties. As a service is, by definition, provided to a third party, which is not the case when a company transports its own fuel or electricity, GATS would seem to cover only the latter category.

GATS-specific commitments on energy-transport services raise several interesting and complex questions concerning, for instance: (i) the scope of the activities covered, e.g., what is a pipeline transport service? What kind of activities are covered?

(ii) do rights of ways for the construction of pipelines represent market-access limitations within the meaning of GATS Article XVI? (iii) does a specific commitment on pipeline transportation imply a right to build new facilities? and (iv) issues related to concessions and government procurement. Similar questions arise in relation to electricity transmission and distribution services.

The GATS also contains basic disciplines regarding monopolies and business practices (Articles VIII and IX). Members must, *inter alia*, ensure that monopoly suppliers – whether privately- or publicly-owned – act, in the supply of the monopoly service, in a manner consistent with the MFN obligation and that Member's specific commitments. Moreover, monopoly suppliers acting outside the scope of their monopoly in a sector where a Member has undertaken GATS commitments must respect those commitments. However, these disciplines do not allow to address the main anti-competitive practices affecting energy transport networks, which concern access to and use of energy-transport facilities by third parties.

Even assuming that a large number of WTO Members undertakes liberal GATS commitments, evidence from the telecommunication sector suggests that this is not sufficient to guarantee effective conditions of competition for suppliers seeking to provide transportation services over networks. There are several important similarities between telecommunication and energy network industries: both are characterised by large incumbents which traditionally dominated a market and which often retain a dominant position after liberalisation, in particular over key infrastructure. In the GATS negotiations on basic telecommunications, it was considered that, while specific commitments and relevant GATS disciplines represented an important step in establishing a level playing field for service suppliers, they needed to be complemented by additional disciplines. A so-called Reference Paper was negotiated, which contains disciplines regarding interconnection, safeguards against anti-competitive practices, independent regulator, regulatory transparency, etc.[114] Such disciplines were undertaken on a voluntary basis in the form of additional commitments by WTO Members, and their application respects the most-favoured-nation treatment.

At the beginning of the services negotiations in 2000, some Members proposed to negotiate additional disciplines for energy services, modelled on the telecom Reference Paper, and which would address regulatory transparency, non-discriminatory third-party access to networks and grids, the need for an independent regulator, and requirements preventing certain anti-competitive practices. However, this negotiation never took off and energy-related disciplines are not likely to materialise during the DDA.

Nevertheless, Members have the possibility to undertake additional commitments on energy services, irrespective of whether a Reference Paper is negotiated. For the time being, there is only one case of additional commitments undertaken with respect to pipeline transportation. In its GATS schedule, Ukraine, which acceded recently to the WTO, '... commits itself to provide full transparency in the formulation, adoption and application of measures affecting access to and trade in services of pipeline transportation.' It further '... undertakes to ensure adherence to

114 The Reference Paper is found at *http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm*.

the principles of non-discriminatory treatment in access to and use of pipeline networks under its jurisdiction, within the technical capacities of these networks, with regard to the origin, destination or ownership of product transported, without imposing any unjustified delays, restrictions or charges, as well as without discriminatory pricing based on the differences in origin, destination or ownership.'[115]

The first part of Ukraine's additional commitment goes further than the GATS transparency disciplines contained in Article III. For instance, the requirement to provide full transparency in the 'formulation' of measures might imply an obligation to provide information while the measure is still in the preparation phase; the notification requirement of GATS Article III:3 is more general as it obliges Members to inform the Council for Trade in Services 'of the introduction' of any new measure which will 'significantly affect trade in services'. Moreover, in its additional commitment, Ukraine undertakes to provide information not only with respect to trade in services, but also with respect to measures affecting access to pipeline transportation.

The second sentence breaks new ground as it introduces a non-discriminatory third-party access obligation in Ukraine's schedule. The latter part of the second sentence seems to be borrowed from GATT Article V, while the references to 'non-discriminatory treatment in access to and use of pipeline networks under its jurisdiction, within the technical capacities of these networks' may be inspired by the Draft ECT Protocol on Transit.[116] From a WTO point of view, we are here on the dividing line between trade in goods and trade in services: obligations are included in a services schedule, but they appear to aim primarily at providing minimum access guarantees for the goods transported, rather than for the suppliers of pipeline transportation services.

Energy services are an important theme in the DDA services negotiations. In the initial stage of the discussions, a great deal of work was put into identifying and defining services along the energy chain. While no new classification of energy services has been formally endorsed by the WTO membership, this work has allowed establishment of checklists based on current classification instruments and identification of the various sectors and sub-sectors which are relevant for the energy industry.

When it comes to the market-access negotiations, energy-transportation services seem to remain a sensitive topic for WTO Members. Services incidental to energy distribution and pipelines transportation of fuels are on the sidelines of the negotiations, as evidenced by the fact that these two sectors were not included in the collective request on energy services. This omission indicates that most Members, including those having expressed 'offensive' interests with respect to energy services, are not ready to undertake GATS commitments for the time being. Offers in these two sectors are very sparse. Negotiations focus instead on upstream energy activities (exploration and mining), various professional (engineering) and business services

115 *Ukraine – Schedule of Specific Commitments*, GATS/SC/144, 10 March 2008.

116 Th. Wälde proposed to develop an 'Energy Transit Reference Paper' modelled on the WTO telecom Reference Paper to complement the disciplines contained in GATT Article V, thus already blurring the line between goods and services. See Th. Wälde and A. Gunst, International Energy Trade and Access to Energy Networks, *Journal of World Trade* 36(2): 191-218, 2002.

(consulting), construction and distribution/commercialisation services.

Negotiations on energy services also take place outside the WTO. It is interesting to note that, in the context of preferential trade agreements, a number of WTO Members have undertaken obligations on energy-transport services which go (much) further than their GATS commitments and even, in most cases, their DDA offers.[117] This may indicate that they have scope for more ambitious commitments under the GATS.

4 Conclusion

WTO rules provide some basic disciplines for energy transport and transit. These disciplines are incomplete and have rarely been tested in practice.

Article V establishes the principle of the freedom of transit for all goods and contains a number of substantive legal obligations. The scope of Article V is not devoid of controversies, in particular when it comes to transit of energy through fixed infrastructures. Moreover, this provision is less detailed than the corresponding provision of the Energy Charter Treaty. For instance, it contains a very limited national-treatment obligation and does not entail obligations with respect to construction of new facilities, which are some of the important elements included in Article 7 of the Energy Charter Treaty. However, the importance of GATT Article V for the transit of energy goods has contributed to a renewed interest among WTO Members. The DDA negotiations offer a good opportunity to clarify and strengthen these disciplines.

The GATS offers a legal framework for energy transport services. All Members must grant MFN treatment to energy transport services and service suppliers. Specific commitments under the GATS can provide, at a minimum, transparency and predictability to services suppliers. Mode 3 commitments on market access and national treatment offer basic guarantees to investors and can help to attract investment (some 10 years ago, the need to attract foreign investment prompted a number of Members to undertake specific commitments in the telecommunication sector). Pro-competitive disciplines, in particular non-discriminatory third-party access, would be useful to complement specific commitments on network-based industries.

The fact that WTO rules are different for goods and services is a source of ambiguity because it obliges to categorise a given activity as trade in goods or trade in services, which may prove difficult in the energy sector. Also, investment protection is rudimentary in the WTO system. While basic investment rules apply to trade in services, investments in the goods sector are not protected per se. The WTO does not contain rules regarding expropriation, and only governments can have access to the WTO's sophisticated dispute settlement system. In this regard, WTO rules go less far than the Energy Charter Treaty, bilateral investment treaties, and even some preferential trade agreements.

117 See M. Cossy, *The Liberalization of Energy Services: Are PTAs More Energetic Than the GATS?*, in 'Opening Markets for Trade in Services – Countries and Sectors in Bilateral and WTO Negotiations', J. Marchetti and M. Roy (eds.), WTO/Cambridge, 2008.

With 153 Members, the WTO offers a forum to discuss energy issues. The WTO is not a forum for framing energy policies, but it is a place where trade-related energy issues can be raised, negotiated, and, if necessary, litigated. While there is no sign that a WTO agreement on energy will emerge in a near future, WTO rules will likely develop incrementally through negotiations in order to address energy trade more comprehensively. Case-law may also contribute to the clarification of existing disciplines. In short, it is to be expected that energy will stay on the WTO agenda in the years to come.

10. Transportation and Transit of Energy and Multilateral Trade Rules: WTO and Energy Charter

Vladimir Rakhmanin[118]

1 WTO design and energy trade

The WTO rules that govern international trade are fully applicable to trade in energy and energy products. However, these rules were not specifically designed to tackle energy issues.[119] First, the traditional focus of GATT has been market access of domestic manufactured products abroad rather than access to foreign supplies. This difference stems from the fact that the manufactured products could normally be produced without limitations in many countries, due account being made to the theory of comparative advantage.[120] Such goods do not encounter natural endowment constraints as energy resources do. Hydrocarbons are finite resources that are unequally distributed around the world. Countries that possess such finite resources are usually driven in their decisions regarding development, exploration and sale of those resources by policy considerations that differ from traditional trade policy.[121]

Second, the most significant challenges related to dealing with energy trade stem from the fact that a significant part of international energy trade takes place through fixed infrastructure, built specifically for the purpose of carrying hydrocarbons[122] or electricity. WTO rules were not specifically designed to tackle issues arising when cross-border energy trade is conducted through pipelines and grids.

Construction of transportation pipelines and transmission grids requires substantial investments with high specificity, i.e., once constructed such transportation networks can only be used for transportation of specific energy products. Considering the physical limitations of fixed infrastructure, investment rules are necessary to ensure that additional networks can be constructed, should existing ones fail to provide necessary capacity.

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118 Deputy Secretary General, Energy Charter Secretariat.

119 Yulia Selivanova, 'Challenges of Multilateral Energy Trade Regulation: WTO and Energy Charter, What Should the WTO Agenda Be in a Post-Doha World?', EUI, Badia Fiesolana, 25-26 May 2009.

120 Id.

121 Id.

122 Generally, transportation of gas is much more complex than that of oil. It usually takes place via pipelines. This could explain why the share of natural gas traded internationally is much lower than that for oil. Although gas can be transported in liquefied form by vessels, this mode of transportation is not predominant and, despite technological developments, still quite expensive. 75% of gas is transported via pipelines and only 25% by sea in liquefied form.

2 Transit

The secure transit through the territory of other states is crucial for cross-border trade in energy. Energy transit is different from transit of most other goods – it is often grid bound and thus capacity restricted.[123] In transit of most goods (transported in vessels, trucks, or railway cars through a common carrier infrastructure) the issue of capacity constraints can be solved by queuing without adverse implications, as the goods can usually be easily stored. The time/capacity factor does not adversely affect the transit. Because energy transportation is capacity-restricted and energy is more difficult to store, the time aspect matters.

Energy transit normally requires the creation of infrastructure built specifically for this purpose. The volumes are programmed in this capacity on a long-term basis, since pipelines have limited use for transporting specific fuel and involve significant investments.[124] It may be physically impossible to provide transit due to lack of capacity, because pipeline investors plan for the volumes backed by long-term supply contracts. Energy volumes sold on the basis of such contracts guarantee repayment of banking loans and respective interest. It is unusual for financial institutions to invest in pipeline projects with a large amount of extra capacity. The freedom of energy transit is thus linked not just to the non-discriminatory use of existing infrastructure but to the possibility to create an additional transit capacity if needed.[125]

Although GATT Article V establishes a general rule of freedom of transit based on non-discrimination, it does not address issues that are crucial for energy flows, e.g., non-interruption of transit flow and non-impediment for building new infrastructure if available capacity is insufficient. For the latter, an effective investment framework is needed. Moreover, the energy sector is dominated by monopoly enterprises that control access to transport infrastructure. These companies can claim lack of capacity and charge transportation fees that by far exceed the cost of services rendered. It is not clear how their behaviour can be tackled under general WTO rules.

Although energy is covered by general WTO rules, these rules are not well designed to address the most acute problems related to energy transit and transportation.[126] There is no investment framework necessary for creation of transport infrastructure. The Energy Charter Treaty fills-to a certain extent-the gap in the multilateral framework with respect to energy, as it contains binding rules on energy trade, transit, and investment.

3 Energy Charter Treaty

The Energy Charter Treaty (ECT) is a major plurilateral energy-trade and investment agreement. Comprising 52 member states, it includes in its membership countries across the Eurasian continent from the EU, to the former Soviet Union republics, to

123 This is particularly true for gas, which is more difficult to transport and store than oil.
124 No excess capacity is normally being built without being backed by available supplies.
125 Yulia Selivanova, 'Challenges of Multilateral Energy Trade Regulation: WTO and Energy Charter, What Should the WTO Agenda Be in a Post-Doha World?', EUI, Badia Fiesolana, 25-26 May 2009.
126 Id.

Japan. Importance of the Energy Charter lies in the fact that its membership comprises both energy-producer and -consumer countries as well as transit states. Furthermore, the ECT includes among its members countries that are not yet WTO members. Finally, it is the only international treaty which sets legal norms specific to energy trade and investment. The presence of investment rules enforceable through a dispute settlement system makes the Energy Charter the only international energy investment treaty.

4 The ECT trade and transit framework

The ECT trade regime is based on the rules of the multilateral trade system. The non-derogation from the GATT and WTO rules is the cornerstone of the ECT. Moreover, the ECT extends WTO rules[127] for the energy sector to those Contracting Parties that are not yet members of the WTO. Through the 'GATT-by-reference' approach, the ECT made GATT rules applicable to energy trade relations between its Contracting Parties, at least one of which is not a WTO Member.[128]

Compared to general approach to transit in GATT, the ECT transit provisions contain several additional elements important for ensuring secure energy transit. The ECT provisions restate the principle of freedom of transit contained in GATT Article V, but they are more detailed and focused on energy-related transit issues.

Similarly to GATT Article V, ECT Article 7 obliges participating states to take the necessary measures to facilitate transit of energy, consistent with the principle of freedom of transit, and to secure established energy flows. In addition, the ECT transit regime contains disciplines that are absent in a more general GATT framework. For instance, the ECT members are prohibited from obstructing creation of new capacity if transit cannot be carried out through existing infrastructure due to lack of capacity.[129] Transit countries are also under an obligation not to interrupt or reduce existing transit flows, even if they have disputes with another country concerning this transit.[130] They also have to encourage relevant entities, such as companies operating transit networks, to cooperate in modernizing energy-transit facilities, developing and operating such facilities, establishing measures to mitigate the effects of interruptions in energy supply, and facilitating the interconnection of energy transport facilities.

During the ECT negotiations, it was felt that the general provisions on transit contained in GATT were not sufficiently detailed. This is especially true with respect to transit fees for access to transit pipelines.[131] More elaborate rules were thought to be needed in addition to GATT Article V to ensure transit on reasonable terms, based

127 Not all WTO rules are applicable under the ECT (See Annexes G and W). For instance, trade in energy services is covered only partially through the investment rules. GATS itself has not been incorporated in the ECT.

128 The ECT thus governs relations between WTO members and non-WTO members, as well as between non-WTO members. In relations between two ECT members that are also WTO Members, WTO rules apply.

129 Article 7(4) of the ECT.

130 Article 7(6) of the ECT.

131 The Energy Charter Treaty. A Reader's Guide. Energy Charter Secretariat (2002), p. 29.

on the balance between the sovereign interests of states and the need for security and stability of transit.[132] The Transit Protocol to the ECT, the negotiations of which are pending, would elaborate in more detail some specific aspects of energy transit, such as conditions for access to networks and methodologies for calculation of transit tariffs.

There is a special conciliation procedure intended for resolution of transit disputes.[133] In addition, there is a system of state-to-state dispute settlement which could be used to resolve various disputes arising out of matters covered by the Treaty, including transit. It became obvious, however (most notably during the gas crisis in winter of 2009 when supplies of Russian gas to Europe stopped), that a more expedient procedure for resolving crisis situations is needed. Furthermore, traditional arbitration procedures may do little to help solve operational problems often linked to transit disputes. The traditional arbitration is not speedy enough to be used in case of urgent transit disputes, when a whole country may be cut off from their gas supply in the middle of the winter.

5 The role of the ECT in regulation of energy trade

The Energy Charter Treaty has a unique role as the only energy-specific multilateral agreement that covers all major aspects of international energy turnover: trade, transit, investment, and energy efficiency. It could be argued that the ECT framework is less complete than desired and that more detailed rules on transit (emerging in the Transit Protocol), as well as more comprehensive investment rules, are needed. However, the value of the Treaty should not be underestimated.

The ECT is valuable when added to the existing general WTO framework that covers a much larger constituency. The investment framework and more elaborate transit rules are valuable features of the ECT that have not been negotiated in a detailed manner within the WTO. The cornerstone of the ECT is non-derogation from the WTO. Both ECT and WTO frameworks complement each other, creating synergies without unnecessary duplications.

Apart from the legal provisions, the Charter process plays an important role, contributing to the dialogue between different groups of players: consuming, producing, and transit countries at all stages of economic development. From this point of view, the ECT has a distinctive role – no other energy-related organisation provides a common platform for the development and implementation of binding disciplines among these different groups of stakeholders.

132 *Ibid*.
133 Article 7(7) of the ECT.

11. Natural Gas – The Problem Child of Energy Transport And Trade

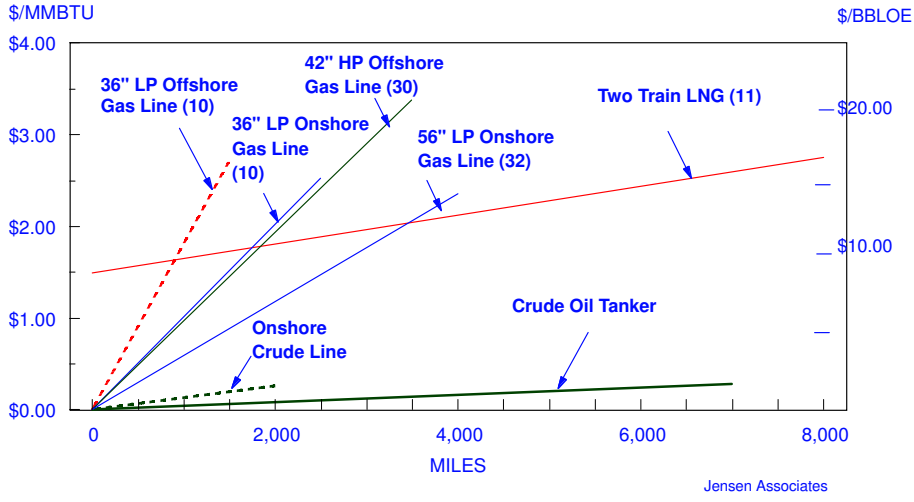
James T. Jensen[134]

1 Introduction

The low density of natural gas makes it more difficult to contain and to transport than oil. While it is almost always cheaper to transport oil in tankers than by pipeline, gas transportation economics are much more complex. Long distance gas pipelining is very costly and sensitive to economies of scale. Over longer distances, where marine movements are feasible, liquefied natural gas (LNG) tanker transport is more economic. The comparative economics of oil and gas transportation as a function of distance are illustrated in Figure 11.1.

While LNG tanker movements are becoming increasingly destination flexible, the inflexibility of pipeline links between gas sources and markets often creates third country transit problems. And these pipeline transit issues often inhibit the development of cost effective gas transportation systems. This is a growing problem as consuming markets increasingly seek more distant supply and some links do not lend themselves to marine transportation.

Figure 11.1 Illustrative costs (2002 perspective) of gas and oil transportation showing gas's higher costs and the effect of scale (gas delivery capability in BCM)



134 Jensen Associates and advisor to the Energy Charter Secretariat.

Perhaps the most obvious problem is Inland European access to Middle East and Central Asian supplies. One of the early examples of attempted European pipeline access to Middle East gas occurred in 1970. At the time, the Soviet Union was considering supplementing declining supplest in the Caucasus region with gas from its plentiful West Siberian supplies. Instead it negotiated a deal with Iran for deliveries of Iranian oil well gas to the Caucasus via the Iranian Gas Transport System (IGAT1), enabling the Soviet Union to divert West Siberian supply to Europe.

The fact that it was effectively a delivery of Iranian gas to Europe via exchange was not lost on European customers. In 1975, Germany, France and Austria signed contracts directly with Iran for deliveries by displacement through the Soviet Union via a new IGAT 2 system

In the fall of 1978, Iranian oil field workers went on strike signaling the start of the revolution. Gas production plummeted and the Caucasus, unable to offset the losses, had a very difficult winter. This effectively killed the concept of moving Middle East gas to Europe via displacement.

In 1975, the Soviet Union could accept Iranian supplies at its southern border and deliver them by displacement to what is now Slovakia on its western border. Such a movement would not be possible today since Russia does not share a border with either Iran of Slovakia. Instead the movement would involve transit of either Azerbaijan or Turkmenistan on the south and the Ukraine on the west. Thus the breakup of the Soviet Union and some Eastern European countries has complicated the transit problem.

2 The pipeline transit problem

The primary pipeline problems involve transit country issues. Transit countries usually have a monopoly on the least costly pipeline route and they may also be less concerned about supply than the destination country. They thus have a strong bargaining position in negotiations over transit rights.

The principal transit problem issues are Geopolitical issues with intervening countries; transit fees; tansit pipeline tariffs; and oftake problems.

2.1 Geopolitical issues with intervening countries

Often neighboring countries have political issues with one another. These have sometimes caused problems or in some cases thwarted proposed pipelines. Some examples of such problems:

- Iran/Pakistan/India
- Russia/Ukraine/Europe – 1990s, 2006, 2009
- Bolivia/Chile/LNG (a proposed LNG export plant on the Chilean coast)
- Eastern Russia/Mongolia/China

2.2 Transit fees for governments

These can be very difficult to negotiate. Payments to governments for transit rights can usually be in cash or in kind. If they are in kind and are at buyer's option, they may complicate supply planning for the destination country. Transit fees are usually fixed but may be a percentage of throughputs or tied to gas prices.

But there are often significant differences in levels depending on the relative bargaining positions of the parts. When we have no information in our analyses we usually use a default assumption of $0.02/MMBtu/100km. However, in 2008 negotiations, India bid $0.013, while Pakistan offered $0.051 in negotiations that ultimately failed. In 2009 Russia charged the Ukraine $0.043 and has proposed $0.073/$0.076.

2.3 Transit tariffs for pipelines

Tariffs are fees paid to the pipeline for transportation. They are commonly set on a 'cost of service' basis – permitting recovery of costs plus a reasonable return on investment. There are different styles – distance related, point to point, zonal, postage stamp or entry/exit. Costs will vary by size of line and by date of construction. And since all systems aggregate costs and assign them among customers, the potential for discrimination is large.

A goal of the Energy Charter Treaty (ECT) is to prevent the favouring of local markets over transit. But because of the complexity of tariff design and the potential for discrimination, it is a difficult task. In a recent study, the ECT found many examples of transit tariffs that were higher than domestic tariffs. Some of the examples included Austria, Belgium, Germany, Poland, Russia and Slovakia.

2.4 Transit country offtake issues

One issue is the possible preemption of flows by the transit country as has been the issue between Russia and the Ukraine in recent years. Russia has attempted to resolve its pricing disputes with the Ukraine by cutting off supplies. The Ukraine, has simply preempted volumes destined for others. There were resulting severe supply problems in Europe, especially in Romania and Bulgaria last winter.

Another issue is the 'first in line' supply claim. The Nabucco Pipeline proposal for transportation between the Caspian and Austria has had difficulty assembling enough supply for an economically viable project. Turkey, a transit country, wants gas for growth, but if the pipeline accedes to Turkey's requested needs it makes it more difficult to justify the line.

3 The challenge of providing pipelines between the Middle East/Caspian and Europe

The possibility of European pipeline access to the Middle East remains elusive. But it still involves transit of many countries, some of which pose significant geopolitical problems. And the costs are high, emphasizing the value of cost effective pipeline routing. The Nabucco route transits Turkey, Bulgaria, Romania and Hungary. The

Russian route transits Azerbaijan, Russia, the Ukraine and Slovakia.

One of the most difficult transit issues has been the periodic dispute between Russia and the Ukraine. Periodic Russian delivery curtailment to the Ukraine has disrupted deliveries to other European customers. To bypass the Ukraine, Russia built the Yamal line through Poland in 1997, and has proposed two new lines Nordstream from West Siberia via the Baltic and Southstream from the Caspian via the Black Sea.

Figure 11.2 The cost of transport avoidance comparison of hypothetical[1] European projects transiting or avoiding the Ukraine

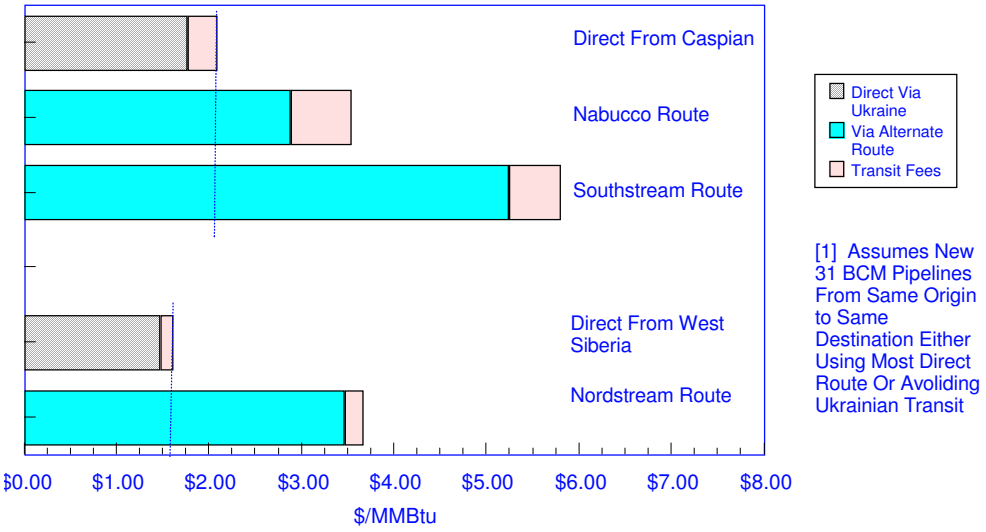
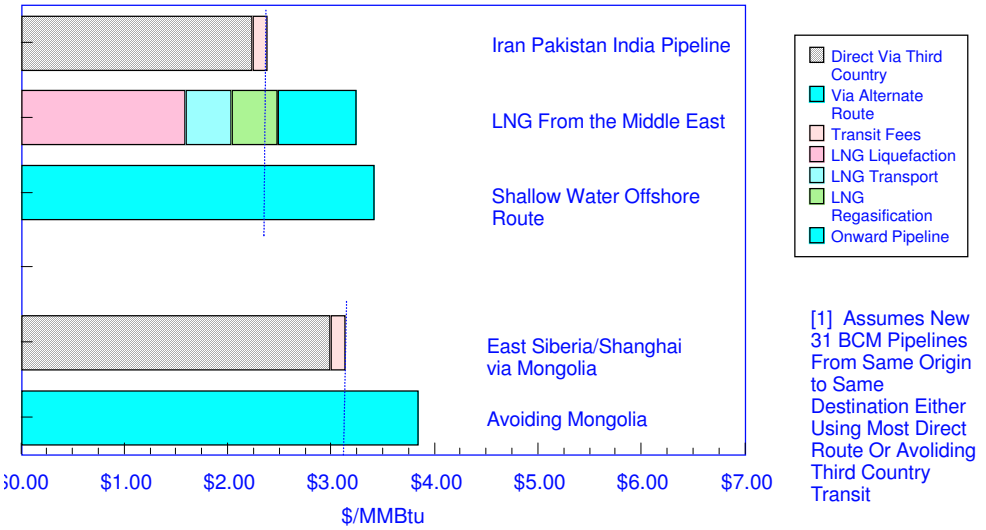


Figure 11.3 The cost of transport avoidance comparison of hypothetical[1] European projects transiting or avoiding a third country



Both are high pressure, marine lines (Southstream a deep water line) and thus expensive alternatives to direct Ukrainian transit. Southstream also competes with Nabucco, the EU's preferred route from the Caspian. Figure 2 illustrates the cost of transit avoidance for these alternative systems.

4 Other costly transit avoidance projects

Europe is not the only region with transit issues that potentially increase the costs of delivery to destination countries. The proposed Iran Pakistan India Pipeline was close to conclusion at one point, but it is now inactive. Although there have been deep water and shallow water lines that would bypass Pakistan, India has recently favored LNG.

And a direct line from Irkutsk (Kovykta) in Eastern Siberia to Shanghai transiting Mongolia has been shelved in favor of an all Russia/China alternative. The costs of transit avoidance of both Pakistan and Mongolia are illustrated in Figure 3.

5 Conclusion

The problem of negotiating third country pipeline transit has slowed the growth of pipeline trade and at times fostered more flexible LNG alternatives. It has also at times led to more costly gas transportation systems.

One agency tackling the problem has been the Energy Charter Treaty Secretariat, but the issue remains challenging. The transit issue would also appear to be a natural role for the World Trade Organization, given its charter to foster world trade, and a membership that includes a diverse group of countries.

12. Transport and Transit of Energy: Challenges in West Africa

Monica Senanu[135]

1 Introduction

Energy resources are sometimes remotely located from demand centers. Energy resources abound in some countries while other countries do not have enough. This energy imbalance across geographic regions and countries creates a need for transportation to get the energy to where it is most needed. The geographic distance between energy resources and demand centers requires the construction of physical infrastructure and market rules to facilitate trade for the benefit of all.

Energy transport is the movement of energy or energy materials from one country, the exporter, to the destination country, the importer, through one or more countries (transit countries). Making energy available where it is most needed enhances regional economic development through improving energy access, supply, security, reliability and quality and ultimately provides increased opportunity from trade.

The ease of energy transport and transit are affected by factors such as physical infrastructure capacity, investment, pricing, tariffs and subsidies, government regulation and sometimes political stability. Some of these factors may be interrelated. In this paper, I will discuss some of these factors with particular reference to electricity and natural gas transportation and transit from an industry perspective.

2 Challenges

2.1 Infrastructure

A robust interconnected transmission grid is a prerequisite for reliable electricity transport from generation sources to load centers. Similarly, pipelines of sufficient capacity are required for gas transport. In some regions of the world, adequate infrastructure for power and gas transport remains a challenge.

For example, some bordering countries in West Africa such as Liberia and Côte d'Ivoire have no interconnecting power transmission infrastructure for emergency or economy power transfer. Other countries have low interconnection capacity with limited reliability margins. Currently, the electricity sector in the West African Power Pool (WAPP) member states provide power supply to only about 30% of the

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population of about 250 million. The present electricity demand in the West African Sub-region is about 15,000 MW, but only about 6,500 MW is being met. While the shortfall in power supply is largely due to inadequate generation capacity, a significant portion is due to inadequate transmission capacity. While Nigeria has abundant natural gas resources to meet the demand of the sub-region, inadequate pipeline infrastructure and natural-gas-gathering facilities contribute to the inability to transport natural gas to countries in the region. The only gas pipeline in the region terminates in Ghana and has not yet achieved the free flow of natural gas. There are challenges that affect the financing and construction of infrastructure. These challenges include (i) non-uniform standards and (ii) technical operational differences.

2.1.1 Non-uniform standards

Different countries in the West African region have different transmission and distribution voltages. For example, Côte d'Ivoire operates its main transmission network at 225 kV while Ghana operates at 161 kV. To realise an efficient and least-cost interconnection between these two systems, an auto-transformer had to be installed, thus increasing the cost of the interconnection facility. Also, grid infrastructure planning is not done on a regional basis. Each country plans its energy infrastructure with a focus towards its internal needs. Past attempts to interconnect countries have sometimes been deadlocked because neighbouring countries could not reach compromises on differing standards. There are obvious benefits to region-wide planning. The establishment of WAPP sought to harmonise many of these differing standards. However, the WAPP accepts 225 kV and 330 kV as WAPP transmission voltages. For example, WAPP is constructing a 330 kV coastal interconnection line from Ghana through Togo and Benin to Nigeria. Additional 330kV lines are being planned to interconnect Ghana with Côte d'Ivoire, Burkina Faso and Mali. A 225 kV transmission network is being planned to link Côte d'Ivoire with Guinea through Liberia and Sierra Leone. Sierra Leone is developing a 161 kV transmission mission network as part of the Bumbuna Hydroelectric Power Generation Facility.

2.1.2 Technical and operational challenges

Technical and operational issues also limit the ability to transport power across borders. System stability issues constrain power-system operators from increasing transfer capability for economical power transfers. This is explained in part by inadequate interconnection capacity and also by large swings in Area Control Error (ACE).

For example, in 2007, there was a need for an emergency power purchase from Nigeria to mitigate supply shortfall in Togo, Benin, and Ghana, however, this could not be completed as a result of system stability issues.

2.1.3 Allocation of cross-border transmission costs and benefits

For network infrastructure, systems such as power transmission, cost allocation, and project-cost recovery are important issues that need to be well defined to encourage investment. It is difficult to identify beneficiaries to whom transmission infrastructure project costs must be allocated. In some cases, attempts have been

made to socialise project costs, but this has been met with protest from groups who believe they are not the beneficiaries. For example, utilities in the western regions of PJM Interconnection LLC in the US have successfully rebuffed attempts by PJM to socialise major transmission projects, arguing that their rate payers are not the beneficiaries of those projects. These challenges not only delay investment but sometimes prevent them.

The industry must address the cost-allocation issue and adopt a methodology that is fair and reasonable to allocate project cost especially in networked systems. The methodology must address difficult issues such as:

- the applicable discount rate,
- assumptions used to determine project benefits,
- the time frame to be used for measuring project benefits and costs
- cost/benefit ratio needed to justify project construction and cost allocation.

2.2 Investment climate

Investment in energy transport and transit infrastructure is often large with very long payback periods. Investors are very cautious of the business and financing risks. Investment is needed, not just to meet current demand, but to continuously meet increasing demand. Adequate and timely investment is therefore paramount. There are a number of factors that affect the ability to attract investment in support of energy transport and transit. These include political, economic, social, technological, and legal concerns.

Establishing and maintaining political stability is necessary for investment in energy transport and transit infrastructure. Many countries in Africa have enormous energy supply potential but investors have stayed away because of political instability. One such country is the Democratic Republic of Congo, which has enormous energy resources such as hydro, but investors are wary of political instability and have thus stayed away.

In some cases, challenges with maintaining law and order frustrate investment in energy transport and transit infrastructure. For example, one of the challenges facing the operation of the West African Gas Pipeline Project (WAGP) intended to supply gas from Nigeria to Benin, Togo and Ghana is vandalism. In February, 2009, bandits attacked the Gas Processing Plant in Nigeria, and forced the plant to shut down.

2.3 Opposition from environmental groups

Environmental groups have contributed significantly towards harmonizing the need for large scale energy projects and protecting the environment. Thus most projects require thorough environmental impact studies for approval. There are cases where environmental groups have forced project sponsors to examine viable alternatives. There are also cases where extreme elements of these groups frustrate, delay, and stop ‘good’ projects at all cost.

For example, construction of electric transmission lines are held up by lengthy permitting processes because of litigation from concerned local activists and

environmental groups. In many cases, these challenges delay projects for so long that financing dries up and the projects are abandoned. An example is the opposition to projects like Sunrise Powerlink Project (San Diego), a 1,000-MW transmission line that would transfer geothermal energy from California's Imperial Valley to the San Diego area.

2.4 Tariff/pricing

Tariff-setting is critical for attracting investment into the industry and catering for infrastructure development, maintenance, and expansion. Tariff-setting in some of the individual countries or institutions in West Africa has not always reflected the long-run marginal cost of production and transportation. Very often, economic or social circumstances have been articulated as necessitating subsidisation and/or lowering of actual costs relating in this context to transportation, but unfortunately taking the West African experience, governments have often not made good on their commitments to pay up the subsidised cost components when required. Current government regulations need to be changed to allow full-cost recovery of energy investment and eliminate subsidies.

2.5 Tariff – cross border trade

In cross-border trading, tariff-setting covers two main areas: transit and transportation. Transit tariff and transportation tariff are different concepts. Transit tariff reflects economic interest of a country, i.e., what is the cost for using the territory of a country for transit? Transportation tariff is established considering all expenses, profitability of operations, and payment of taxes. It is usual for a transit tariff for a similar service to exceed transportation tariff operating in the country.

There are currently different views on how we determine the cumulative tariff to be paid when energy is transported across borders. Should this be done by the 'postage stamp system' where a fixed tariff is set irrespective of the national/individual power utility infrastructural investments and the distance or the ‘pancake system’, where all costs involved are added as the product transits across borders. The latter, obviously, does not promote cross-border trade.

In West Africa, the WAPP will seek to provide the required regulatory reform and standards across West Africa to create a harmonised and homogenous system.

It is expected that this will reduce cost of transit and transport by eliminating repetitive (‘pancake’) transmission charges.

3 Conclusion

The issues discussed in this paper are by no means exhaustive, but they are, in my view, some of the key issues for consideration in our effort to achieve an effective and efficient energy transport and transit system.

Floor Discussion of Part III

Introductory remarks by Prof. Matthias Finger, Chairperson

Since the industrial revolution energy has always been consumed at a different place from where it was extracted/produced. Energy is always being transformed and in the process changes from a good (crude oil, coal, etc.) to a service (e.g., electricity service, energy service such as heat, light, etc.). This transformation takes place somewhere along the value chain and is thus related to transport and transit, i.e., at some point in the transport/transit, energy as a good becomes energy as a service.

The following elements have exacerbated the issue of transport/transit of energy:

- market opening, especially in Europe: consumers can now buy energy (electricity and gas) from anywhere
- technology: transport is made easier and can cover longer distances thanks to technological progress (e.g., supergrids, LNG)
- energy trading: trading becomes global, eventually contracts will have to be cleared and energy will have to be delivered
- climate change: favours renewables at a large scale (e.g., windfarms in Denmark, solar parks in Spain) which have to be delivered to the consumption centres; polluting productions can now be located at further distances thanks to transport/transit (raising the question of the efficiency of transport)
- the question of security of supply which makes even transit a strategic/geopolitical issue

The biggest experiment on energy transport/transit these days is Europe: but Europe does not have a trade approach to transport and transit. Rather the networks are so-to-speak expropriated from national governments and located at the European level. Access has then to be granted to the network

Question from a member of the audience (Energy Charter Secretariat)

Energy transit is different from transit of most other goods - it is often grid bound and thus capacity-restricted. Energy transit normally requires the creation of infrastructure built specifically for this purpose. The volumes are programmed in this capacity on a long-term basis since pipelines have limited use for transporting specific fuel and involve significant investments. It may physically be impossible to provide transit due to lack of capacity, because pipeline investors plan for the volumes backed by long-term supply contracts to guarantee repayment of banking loans. The pipelines are thus not typically built with large extra capacity. The freedom of energy transit is thus linked not just (and not so much) to the non-discriminatory use of existing infrastructure as to possibility to create an additional transit capacity if needed. For the latter an effective investment framework is needed.

Mireille Cossy

Regarding transit, problems related to lack of capacity, or to the fact that pipelines are often owned by private companies, have been raised in the trade facilitation discussions. GATT Article V does not contain any obligation with respect to construction of new facilities, contrary to Article 7 of the ECT. In railways transport,

there is also a problem of limited capacity, but this is not a reason to say that transportation by train falls outside the multilateral rules on transit. Huge investments are indeed needed since building pipelines and electricity grids is extremely costly, and investors need insurances regarding their return. The lack of a comprehensive investment regime in the WTO is a weakness. Interesting issues related to the right to build new facilities also arise in relation to GATS commitments on pipeline transportation and would need to be further explored.

Question a member of the audience (SECO)
One of the challenges facing the Doha Round is the possible congestion problems. How should this problem be phased? In the ECT and WTO there seems to be little said about it. Following the previous question, it is helpful to discuss the types of conceivable arrangements ranging from common carriers to monopoly owners and how third party access might work. Certain pipelines are now built using an open season process, and each can emerge in a different kind of market environment. Why, for example, is there is no common carrier gas pipeline in the EU?

Professor Matthias Finger
Access to infrastructure and non-discrimination explain how the EU has solved these problems because the infrastructure belongs to the EU as such. Consequently, legislation is done at the supranational level. In the case where we do not have an internal market, how are these problems addressed?

James T. Jensen
With respect to the issue of open access and third party access, when energy was liberalized in the U.S., there was a lot of surplus pipeline capacity and there was commodity competition for natural gas. Therefore, it was easy to liberalize both, trade in pipeline capacity and the commodity. Third party access works if there is surplus capacity since it allows you to trade. If this is not the case, no one will trade. If you have a limited number of pipelines and LNG terminals, you organize a bid to determine who will take the responsibility for that service. With a new pipeline or LNG terminal, it is the same: who will step forward and pay for that expansion? The three open access terminals in the U.S. are basically controlled by four major companies, who would not buy and sell it if you gave them a premium. It is a real advantage. In Spain, there are open access terminals, but the question everyone asks is, who will build the next terminal? It is not clear that it will be filled. If you fill it without commitments and want to go through with it, you will not get it done.

Vladimir Rakhmanin
Open access or third party access is not an easy issue to deal with. There are different conditions in different countries. If you have a super giant gas field, you look for long-term consumers and you will negotiate a pipeline just for that field. That is why we talk about a more comprehensive framework including investment and long term contracts. Consequently, the members of the ECT are debating what freedom of transit means: does it mean access to the same pipeline or the possibility of using another pipeline if this one is full? It is up to the members of the ECT or to the companies to respond. The model should not only be negotiated in a multilateral

framework. It should be discussed from the policy angle to understand what the countries are doing, where they are moving to. Mr. Finger asked what the different types of arrangements are and which one works better: different models work in different states. The open U.S. model, the EU market oriented one or the Russia/Norway long term contract based model. Russia is making a commitment to liberalize the gas market when the conditions are right. At this stage it is hard to promote one universal model for all situations.

Monica Senanu
To clarify the West African Gas Pipeline Project and the problem of vandalism, the pipeline that runs through Nigeria runs off shore and on shore. With regard to the on shore pipeline, people broke into the pipeline. However, this is only one of the challenges and one of the reasons for the delay of the project.

Question from a member of the audience (Graduate Institute)
Mr. Jensen spoke about how to set the transit rates and tariffs. Could the disciplines in Article V GATT not apply to those rates assuming they are set by a public authority? There is a reference in Article V GATT to costs commensurate with the service or that need to be reasonable. Could that be invoked by one WTO member against another?

Mireille Cossy
GATT Article V stipulates that a government cannot apply customs and transit duties on goods in transit, but can levy charges for transportation or charges commensurate with administrative expenses entailed by transit or with the cost of the service rendered. Hence, this provision would allow dealing with this type of situation. However, the problem is that in practice these fees are often imposed by private companies. And it is not clear to what extent GATT Article V could be invoked in cases where discriminatory or disproportionately high fees are imposed by powerful energy companies because WTO rules are inter-state obligations. Nevertheless, WTO rules are already developing in this sense. For example, GATS Article VIII addresses monopolies and obliges members to make sure that monopolies - public or private - comply with some basic rules. The rules do not apply directly to the monopolies, but they oblige members to ensure a particular behaviour from the economic operator. A big difference between the WTO, on the one hand, and, on the other hand, the ECT, BITs or even some preferential trade agreements, is that private investors do not have direct access to the WTO dispute settlement mechanism.

Question from a member of the audience (Mexican mission)
In case of a joint infrastructure project between a private party and the government, who would manage the project and what would the role of the WTO be in terms of fees?

Question from a member of the audience (Graduate Institute)
With regard to transit, and considering the main obstacles to reach a new deal on transit and the different institutions that could possibly address the question of transit, would the WTO be better placed to deal with it as compared, for example, to the ECT or vice versa? What is your view on institutional settings and how can they influence

the outcomes? Finally, are there any transit issues when it comes to trade in alternative energy?

Vladimir Rakhmanin
I believe that the ECT is the right and the most operational framework to deal with energy transit issues. The experience that was accumulated during these long talks within the ECT can lead to a larger probability of producing results.

James T. Jensen
With regard to the renewable energies, most of those alternative energy sources are transformed into electricity, so it is all about electricity. Transit fees are a payment made to cross the country, but there is no cost associated with them. The best solution is to increase transparency.

Professor Gabrielle Marceau
Responding to a comment made that 'all transit fees are illegal under WTO law, and although they are banned under the WTO, the organization lacks the strength to enforce it. There is no claimant to put it through.' In reality, not all fees are illegal. The charges must be reasonable as explained in GATT Article V. Therefore, they are not illegal *per se*.

Professor Matthias Finger
Transit fees are necessary; otherwise, it is not possible to operate. How we handle these fees in a regulatory framework in Europe is to define them in relation to costs. However, everyone has different costs so we are gradually moving to some sort of benchmarking. We are still at the stage of understanding the problem and its technology.

Question from a member of the audience (Graduate Institute)
It seems that the WTO and ECT rules apply to interstate relations, but buyers are often private companies. To what extent are rules needed that would also apply to private companies? To what extent would a system be needed for private companies to rely on international rules to provide for security in the market or to overcome investment issues?

Professor Matthias Finger
Considering the multitude of different actors, former state monopolies are active in the energy sector, but so are public-private partnerships, private companies and state companies. We need to address the issues of access and transit fees, but there is more to be understood about this topic.

Question from a member of the audience (Hogan Hartson)
Concerning the construction of new transit infrastructure, if one looks into the Ukraine accession commitments, there is a full market access commitment in gas transportation. If there is no full capacity there, anyone can invest. On another issue, more specifically on security of supply, to what extent and to which energy products does this concept apply? Can the security of supply be used as a pretext to interfere with the flow of energy goods and services?

Mireille Cossy
Concerning the construction of new transit facilities and GATS, one should not read too much into the additional commitments undertaken by Ukraine. It may be difficult to derive from it a right to build new capacity. With regards to the question on security of supply, one would have to look at the specific type of scenario envisaged.

Professor Matthias Finger
Perhaps in the case of Ukraine, one could argue that the gas is needed for international consumption rather than letting transit to somewhere els

Mireille Cossy
The issue could then be looked at from the point of view of a GATT exception. But when one considers GATT Article XX (g), it is questionable whether it would work, since the gas does not come from Ukraine.

Question from a member of the audience (CSEND)
Ten years ago, a group of countries was working on a terminology of the energy sector to define what it was, since at that time it was not clear what energy goods and services were all about. Are they still at this same stage? Has the group gotten larger? Have they finished with this first activity?

Mireille Cossy
Negotiations on energy services have started, despite the lack of uniform terminology. The services classification list contains 11 broad sectors, but there is no separate chapter for energy, since at the time energy was largely in public hands. Ten years ago, at the beginning of the new negotiations on services, the question arose whether we should identify energy services and introduce a specific chapter. A lot of work has taken place, which has shown that the existing classification instruments already encompass almost the whole chain of energy services. Discussions on classification have allowed trade specialists to get a better understanding of the energy sector and have facilitated negotiations. And it is important to keep in mind that the fact that there is no separate chapter does not mean that energy services fall outside of the GATS.

PART IV

Environmental Issues in the Trade and Energy Context

13. Implications of Climate Change Policies for Trade and Investment in Energy-Intensive Industries

Vincent Mages[136]

1 Short introduction to Lafarge and cement production

Lafarge began operations in 1833 in the south of France and has since developed to become, by the end of 2008, a company with €19 billion of sales in 79 countries through three business lines: cement, aggregates & concrete, gypsum. Today, emerging markets represent 46% of Lafarge's total sales and 63% of our cement activity. Lafarge ranks first in the cement industry.

In the cement manufacturing process, limestone is heated up to 1450 °C to produce clinker. The simplified formula is heated limestone ($CaCO_3$) resulting in reactive lime (CaO) and carbon dioxide (CO_2). Decarbonated additives are then mixed with clinker to produce cement. Carbon dioxide comes 60% from embedded carbon dioxide in the limestone, and 40% from the fossil fuels used in the combustion process. Energy represents 40% of our production costs.

Cement is then mixed with aggregates and water to produce concrete and mortar. Concrete and mortar are used as building materials for housing and infrastructure. Concrete has thermal inertia properties that make it a material of choice for energy-efficient buildings.

The demand for building products, including cement, will continue to grow, driven in particular by economic growth in developing economies and by the increase in urbanisation. Today, 50% of the world population lives in an urban environment and this figure will continue to rise, increasing the need for infrastructure and housing. The global demand for cement is likely to double by 2030.

Climate change is a key challenge for the cement industry (5% of total man-made emissions) and for Lafarge. We also strongly believe that cement and concrete will be part of the solution to mitigate growing energy consumption and CO_2 emissions in the building sector as well as to design, where necessary, adaptation to climate change.

Lafarge has been a pioneer in committing to CO_2 emission reductions, within the framework of its partnership with WWF and as early as 2001, with voluntary, public, and verified commitments:

- 20% in CO_2 per ton of cement emissions worldwide between 1990 and 2010
- 10% in absolute total emissions in industrialised countries between 1990 and

136 Climate Change Initiatives VP, Lafarge.

2010

We are confident we will achieve these commitments on time.

These commitments, together with other environmental, social, and governmental commitments constitute the 'Lafarge Sustainability Ambitions 2012' (see www.lafarge.com). In 2009, Lafarge was ranked third in the 'materials' sector by the Carbon Disclosure Project and is in the Carbon Disclosure Leadership Index (the top 50 companies overall).

2 Lafarge positions on climate changes policies

Lafarge supports the design and implementation of cap & trade schemes in developed countries (EU-ETS in Europe, under design in US and some other countries).

From governments and regulators, we expect that:

- Developed countries have similar objectives and equivalent time scales.
- These schemes are designed and monitored in the fairest and the most predictable ways allowing each sector and each company to dedicate its investments, its R&D and performance improvements towards emission reduction actions.
- These schemes do not create any distortion of competition between markets under CO_2 constraints and other markets. The necessary policy measures to prevent carbon leakage must be designed and implemented; we would support the border adjustment mechanisms or mechanisms aimed at including importers into these schemes if distortion of competition were to happen.
- The developed countries dedicate significant efforts to link their schemes and initiate comparable efforts in developing.

Lafarge expects that the UN-driven process will deliver, through the Copenhagen conference, an international policy framework enabling industry in general, and the cement sector in particular, to further develop their contribution to the fight against climate change at national levels without generating distortion of competition. In such a framework, all developed countries should commit to reduce their CO_2 emissions on a similar basis, more economically advanced developing economies should commit to implement a harmonised system of monitoring, measurement, and verification (MRV) of their CO_2 emissions by 2011, stabilise emissions growth in the medium term through nationally appropriate mitigation actions and thereafter, make a firm commitment to reduce absolute emissions, and least-developed countries should contribute to the global effort by implementing a harmonised MRV system by 2015 and defining sectoral CO_2-intensity-reductions targets in selected industries by 2012.

3 When climate policies interact with trade and investment issues

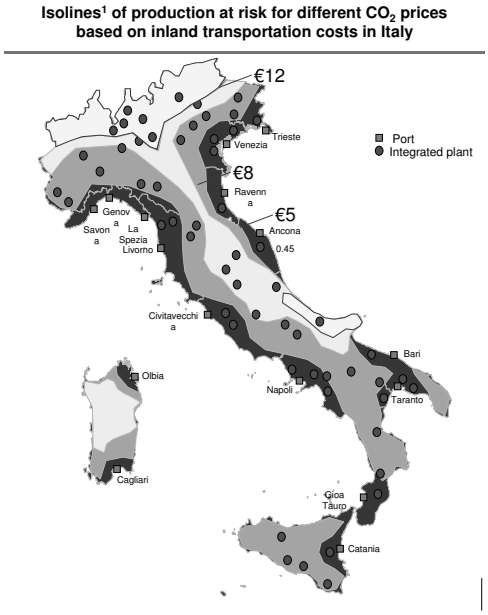
The issue of the climate-change policies' impacts on trade and investment has been largely documented at macro and micro levels.

In July 2009, the OECD Roundtable dedicated a full session to this issue with a

comprehensive supporting paper exploring the challenges and potential solutions:

> 'The arithmetic of competitiveness is simple, easily expressed and readily digested by a wide audience of taxpayers and workers concerned about job losses or lower incomes. If a firm faces higher costs in its home country it may struggle to compete, move offshore or lose its business to offshore companies, and jobs will be lost. This resonates with many constituents and cannot be refuted in its entirety. The case for making some adjustment at the border appears to be persuasive.
>
> 'The arithmetic of competitiveness is made more challenging for policy makers by emissions 'leakage'. If a firm loses business to foreign competitors or moves offshore then policy may not reduce emissions and emissions could even increase. As a result the effectiveness of climate policy can be called into question, at least in part.
>
> 'Policy makers have struggled to respond. The trade policy community has drawn attention to the risks such measures pose for the integrity-and liberalisation-of global trade rules. The climate policy community has responded to these issues by resorting to modelling exercises that, at the level of the economy as a whole, cast doubt on the scale of the problem. Neither response can decisively answer the particular concerns of an enterprise.'

Figure 13.1 100% of clinker production at risk with CO_2 price of €15/t (0% free allowances allocated)

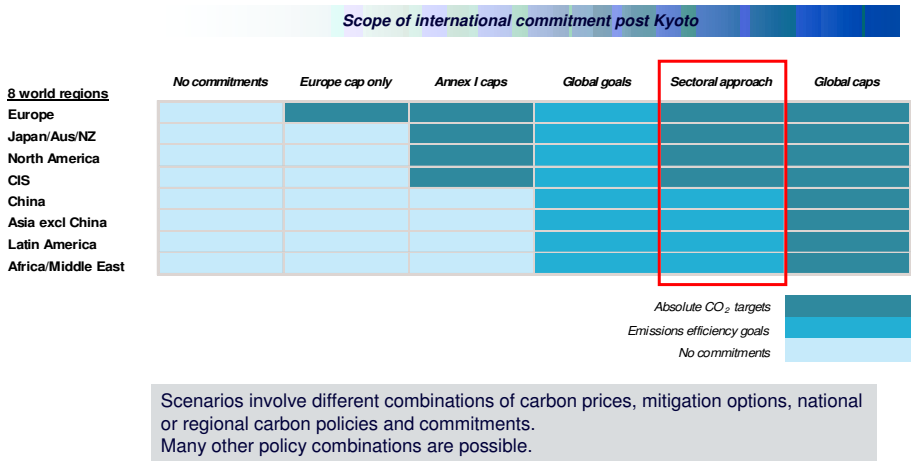


CO_2 prices (€/t)	Distance (km) from coast to isoline	% of total clinker production at risk
5	50	26
8	150	70
12	250	85
15	350	100

Notes: 1. For clinker from North Africa Taken into account the most important ports (in terms of clinker trading) according to the Shipping Statistics Yearbook 2007. Clinker production by plant estimated as average being a confidential information

Source: Italian Cement Association; Shipping Statistics Yearbook 2007

Figure 13.2 Policy scenarios evaluated



The figure below shows the competitiveness impact of pricing carbon for the cement industry in a country like Italy.

The Cement Sustainability Initiative, which Lafarge is currently co-chairing, undertook an economic- and policy-modelling project in 2008 and 2009, coupled with a series of stakeholder dialogues to better understand the potential benefits and pitfalls of different policy scenarios and their impacts on international trade.

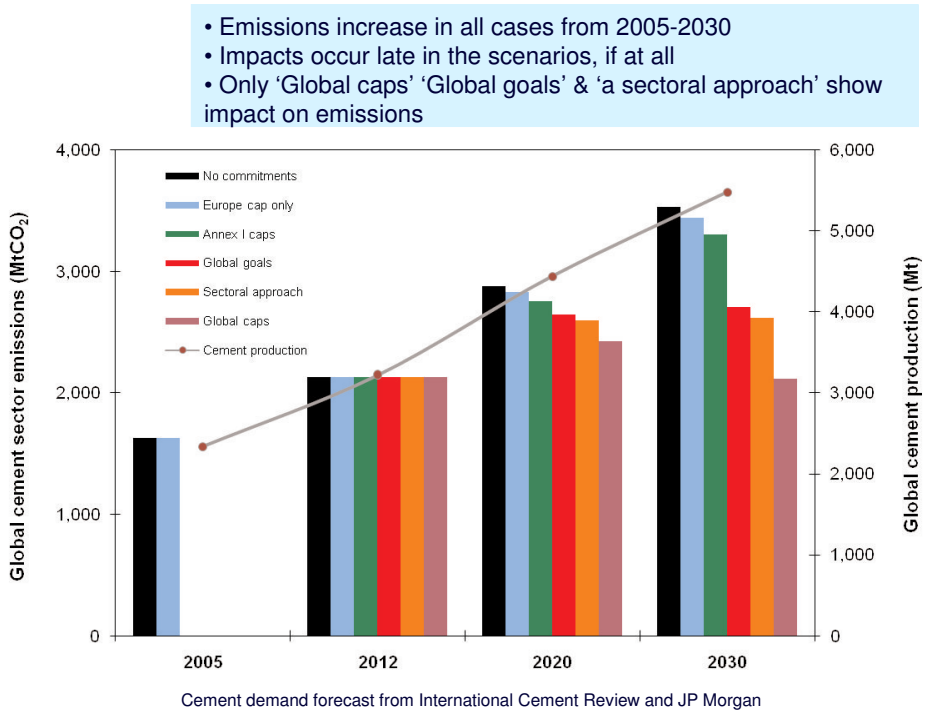
The CSI has worked with the international consultancy, ERM, to develop an economic model of the global cement business which helps when considering different business and policy scenarios. The model separates the world into eight different regions and calculates regional production and interactions between regions to meet the predicted global cement demand.[137] Model inputs, generally drawn from public information, describe the features of each region, including GDP growth rates, the energy performance, and the mix of cement-kiln technologies, costs, and materials availability. These are combined to meet the predicted global cement demand at minimum cost. The model results include calculated cement production, trade, and CO_2 emissions in each region over the period from 2005 to 2030.

Carbon policies and emission goals can be set across regions (and over time). The model incorporates the goals and costs associated with different carbon-management approaches into its analysis. Different policy scenarios (described in a separate note) are applied to calculate differences in carbon emissions as a result of different policies. In this way, the impacts of different carbon policy choices can be analyzed and compared on a consistent basis. For example, it is possible to see how changing cement demand is met by a dynamic combination of regional production, imports and exports. These comparisons can be used to help inform decision makers about the relative merits, costs, and impacts of different carbon- and trade-policy choices.

China plays a major role in the world's cement markets, currently producing nearly half of all cement. Data from China is difficult to collect and also is changing rapidly as the industry modernises and grows. To account for this uncertainty, we have

137 Based on data from the Global Cement Report (2007) and forecast analysis by JP Morgan.

Figure 13.3 Comparison of scenario outputs: CO_2 emmisions projections



included a number of sensitivity studies to address the different growth rates in Chinese cement demand and the mix of technologies used to meet this demand.

To ensure fair and accurate treatment of the many different variables involved in such a model, the CSI requested and received formal peer review of the model by several organisations, including:

- Lawrence Berkeley National Laboratories (USA)
- The International Energy Agency (Paris, France)
- Research Institute of Innovative Technology for the Earth (Japan)

A detailed set of specifications for the model and a summary of how the different model elements are assembled are available for those interested in further information.[138]

Model projections indicate that:

- Cement production, driven by growing demand, is expected to more than double by 2030.
- A sectoral approach, as a combination of cap & trade in developed countries and intensity (CO_2 per ton of product) goals in developing countries, could reduce cement-sector emissions significantly compared to business-as-usual.
- While regional differences exist, a sectoral approach with proper design of

138 See *www.wbcsdcement.org*.

national policies could significantly increase access to the major greenhouse gas mitigation levers available to the sector.

- With current cement-making technology, carbon capture and storage (CCS) will likely have a strong role in reducing the sector's emissions. Substantial public and private investment is required to make CCS commercially viable for the sector.
- Differentiated carbon policies cause potential trade distortions. They can be managed with one or a combination of tools including allowance allocation policies, border carbon adjustments and import/export tariffs and rebates.
- Exploiting the full potential of the sectoral approach requires supporting the participating countries' government policies which cover cement standards, building codes, and waste management practices among others.

4 Conclusion

As a result of this modeling exercise, it is clear that, in order to be efficient, global climate policies must include:

- Local measures to facilitate access to, and to incentivise the use of, all relevant drivers towards CO_2 emission reductions (biomass, decarbonated additives etc. in the cement sector).
- National or regional measures to deal with their impacts on trade and subsequently on investments, such as the inclusion of importers or border (export or import) adjustment mechanisms, at least for those sectors at risk of carbon leakage.

The current absence of trade consideration in the climate debate could present an obstacle to success in the upcoming implementation phase. As we are now entering into a transition period, characterised by differentiated climate policies with different level of stringency, industry, and particularly energy-intensive industries, need predictability in order to design and implement their investments while maintaining their competitiveness. The World Trade Organization has a role to play in this debate.

14. Tackling Climate Change and Competitiveness: The Relevance of WTO

Patrick Low[139]

1 Introduction

As a growing number of governments adopt constraints on CO_2 emissions arising from production processes, awareness mounts among affected industries of the cost implications of such measures. In a world where international agreement is lacking, both on appropriate climate change policies and on the relative degree of responsibility for action falling upon different countries, constraining climate change policies with varying competitiveness consequences will lead increasingly to industry-level pressure for relief. These pressures engage governments in a search for offsetting measures that reduce the competitiveness impact of internationally differentiated climate change policies. A further concern-linked to competitiveness-is that patterns of investment and trade will change under differentiated policy regimes such that the effectiveness of the environmental objective, in terms of reducing carbon emissions, will be compromised.

The rest of this chapter will: i) briefly outline some of the factors that make different industries more or less vulnerable to higher costs and the loss of competitiveness as a result of climate-change policy, ii) unbundle the two core elements of competitiveness concerns (investment and trade), iii) enumerate some of the different ways discussed in the literature of lessening competitiveness concerns, iv) consider the WTO implications of the elements identified in the previous section, and v) briefly conclude.

2 Factors affecting vulnerability to cost-related losses in international competitiveness under differentiated climate regimes

Costs arising from carbon-constraining policies raise very different degrees of concern among industries regarding competitiveness at the international level. At least one of the following industry characteristics will contribute to the strength of a possible competitiveness effect of differentiated carbon constraints: i) the industry is carbon-

139 Director, Economic Research and Statistics Division, WTO. The author is a member of the GATT Secretariat. The views expressed here are his own and should not be attributed to the WTO, its Members or the Secretariat.

intensive, ii) considerable scope exists within the industry for technology choices that exert a strong influence on the carbon content of production, iii) the industry can move relatively easily because its location is not strongly dependent on the input characteristics (e.g., their tradability), and iv) the industry's output is easily tradable. The higher the demand elasticity for a product, the more difficult it will be for an industry to pass on extra costs from carbon constraints to consumers and maintain profit levels. A high degree of trade within an industry will generally be associated with higher elasticity. Other factors that influence the scope for passing on costs (cost 'pass-through') include market structure and product substitutability. Cost pass-through appears to be more viable in oil refining and cement industries, while iron and steel, paper and pulp, and particularly aluminium, are more vulnerable in terms of having to absorb the costs of carbon-constraining policies (Reinauld 2008).

These differences in vulnerability related to cost factors impinging on competitiveness provide a challenge for policy design. Governments may be tempted to exempt the most vulnerable industries, or at least place more lenient carbon constraints upon them. Yet the same industries may be non-trivial parts of the climate change story. The resource allocation implications within the economy of such differentiation may be distorting not only in terms of climate-change policy, but also the basic structure of the economy. There is also an international dimension in terms of competitiveness and the location of industry if carbon-constraining policies are not applied equally to industries on the basis of their emissions.

3 The investment and trade dimensions of climate change policies

Concerns over the effects of climate-change policy on competitiveness relate both to factor and goods markets (Hufbauer et al. 2009). The first of these refers to the effects of carbon constraints on investment decisions. The costs of compliance with climate change policies may be significant enough among the range of determinants of investment location to tip the balance and shift an investment to a location with little or no carbon-constraint policy. This concern has been around for a long time and discussed in the past in terms of the migration of dirty industries. In the current debate, investment relocation is not just a matter of lost investment and job creation. It also means that emission controls will be lessened because firm location decisions give rise to what is referred to as carbon leakage-emissions in one place increase as those in another are reduced by carbon constraint policies. This correspondingly reduces the beneficial effects of the costs incurred to limit emissions. The case would be less compelling on environmental grounds were it not for the fact that the multiplication of GHGs in the atmosphere is a commons problem. In the case of local pollution problems, factors such as location-specific absorptive capacities in relation to negative environmental externalities would have to be considered.

The degree to which climate-change policy affects investment decisions is an empirical matter, and the evidence so far does not suggest that there has been a significant amount of carbon leakage. This may be because a lot of what has passed so far as carbon-constraining policy has not had much bite. As discussed below, several policies have been suggested for addressing carbon leakage, some of which have direct implications for WTO rules.

The second source of concern about international competitiveness arises in the goods market. It is often referred to in terms of the need for a 'level playing field'. The argument is simply that carbon-constrained output bears a cost that reduces competitiveness in relation to output from countries that do not have comparable carbon-constraint policies. The effects are felt in both the domestic market in relation to imports and in third markets on the export side. As noted above, the actual consequences on trade and competitiveness of different climate change policies will depend on a range of market-determined factors.

In the absence of international agreement on these matters, an argument sometimes made for unilateral policies aimed at reducing carbon leakage and levelling the playing field of competition is that the existence of such policies, or even a credible threat that they will exist in the future, might change the incentive structure facing governments that are reluctant to institute climate change policies. Not enough has been done in this direction so far to assess the effectiveness of the approach. But the political default is complicated since governments who interpret such unilateral action as a threat rather than an inducement might be reluctant to play along.

4 Some approaches for lessening competitiveness concerns

What follows is a listing of some of the policy approaches discussed in the literature for lessening competitiveness concerns. This is not intended as an exhaustive list of possibilities, and not all of them bear any relation to the rules of the trading system. The reason for broadening the discussion here beyond the interface between climate-change policy and trading rules is that the prospect of effective international cooperation on climate is likely to bear an inverse relationship to the degree of dependence placed by governments on trade measures as an instrument of climate-change policy. In political and policy terms, the most promising means of managing the interface between these two areas would be where governments agreed on their respective rights and obligations in the climate-change policy domain. Then the rules of the trading system would either be interpreted to accommodate the arrangements or be modified as necessary. The least-desirable outcome would be where agreement on cooperative climate-change policy eludes governments, and the unilateral use of trade measures to bolster climate policy turned the WTO's litigation system into a battleground (Pauwelyn, 2007). In the latter scenario, international cooperation would take a beating. Neither effective climate-change policy nor an effective trading system would be likely to result.

4.1 Negotiating for cooperation

Pre-commitment in regard to the disposition of rights and obligations in a post-Kyoto climate-change regime would require an agreed interpretation of the notion of 'common-but-differentiated' responsibilities. This would no doubt involve a temporal element in regard to obligations and certain transfer mechanisms from developed to developing countries. The arrangements could carry certain implications for WTO rules, in particular relating to subsidies and the regime for intellectual property rights.

Another approach to international cooperation in the first instance might be to rely upon a sectoral approach. Carbon-constrained and non-carbon-constrained countries could establish cooperative arrangements in relation to particular sectors, preferably those with the largest GHG emissions (Reinauld, 2008). A narrower focus of this nature may make it easier to tease out the different elements that would constitute a package.

4.2 A productivity approach: increasing technical efficiency

If firms were encouraged to emphasise improvements in technology as a means of reducing emissions-rather than cutting output or raising prices to adjust to carbon constraints-this could take pressure off competitiveness concerns (Houser et al., 2008). It may also contribute to a basis for managing access to climate-friendly technology.

4.3 Negotiating for better diffusion of climate-friendly technologies

Linked to this is the idea of reducing trade barriers to climate-friendly products, in order to lower their prices and make them more readily available. This has been referred to as the win-win climate change/trade policy nexus, yielding both the benefits of more open trade and better environmental performance. This, indeed, is part of the Doha Round negotiations, but difficulties have arisen with respect to the identification of climate-friendly products.

4.4 An input substitution approach: relying on less carbon-intensive inputs to production

Much has been written and said about the scope for substituting carbon-intensive with climate-friendly energy sources. This is a complicated and contentious issue. On the one hand there are those arguing for the elimination of subsidies on fossil fuels on the grounds that such subsidies can only exacerbate the climate change problem (unless carbon capture and storage technologies come onstream). On the other hand, subsidies to the production of biofuels have been criticised for being costly, of questionable benefit to the environment, and for distorting food markets. A further point of contention is whether nuclear energy represents an alternative solution, given safety and proliferation concerns as well as waste disposal issues. While this is not an easy area, it may be one where enhanced international cooperation could take some pressure off competitiveness concerns.

4.5 Lessening the cost of carbon constraining policies

Lessening the impact of carbon-constraining policies may amount to little more than reducing ambition in climate-change policy. One might take a temporal view of this and argue for a trade-off between the sustainability of a more gradual approach and the impracticality of excessive ambition. This argument goes to the heart of the climate-change debate over how long we have to act before unsustainability and/or irreversibility of key climatic assets set in. Stern (2006), for example, embraces a low

discount rate (very close to zero) and argues that decisive action is required as a matter of urgency. Nordhaus (2008) is more sanguine and opts for a discount rate closer to what the market reveals, implying a more gradual approach.[140] The debate is beset by enormous uncertainties about the pace and consequences of climate change, which scientists are striving to reduce. In the meantime, the swifter and stronger the action taken, the more challenging it will be for governments-in the absence of prior international agreement in relation to rights and obligations on climate-change policy-to manage the fallout arising from the tensions over carbon leakage and competitiveness in product markets.

4.6 Neutralizing competitiveness effects

If governments have been unable to reach agreement regarding their respective commitments on climate-change mitigation before national carbon-constraint policies begin to impose significant costs on industry, the resolution of competitiveness concerns may take the form of unilateral corrective actions. Such actions will only be effective from the perspective of the government imposing them if they exert an influence on trade and investment flows. The unilateral application of cost-neutralizing measures may involve trade actions that conflict with WTO obligations.

5 The WTO implications of managing competitiveness concerns

Literature is emerging[141] on the interface and potential clashes between climate change policies and the international trade regime.[142] As noted earlier, in an orderly world of international cooperation, governments would agree on how they needed to cooperate to manage climate change, and the WTO trade regime would make any necessary accommodations to ensure consistency in these related areas of cooperation. This sequence would seem to make sense in light of the reality that maximizing trade flows is not an end in itself-rather, trade is a means of fostering growth and development in conjunction with the attainment of a range of other public-policy objectives, including the management of climate change. The literature cited under footnote 2 above identifies a wide range of legal issues where climate change and trade rights and obligations might intersect. This 'melding' of the regimes would therefore seem an important step in establishing coherence in international governance arrangements.

This scenario relies on agreement among governments on the international climate change regime-that is, on a successor regime to the Kyoto Protocol, which

140 While the chosen discount rate reflects differing views about the value of the future in terms of the present, many other economic and scientific variables play a role in identifying preferred policy positions on dealing with climate change, as illustrated by integrated assessment models.

141 See, for example, Pauwelyn (2007), Bordoff (2008), Cosbey (2008), Tamiotti et al. (2009), Tamiotti and Kulacoglu (2009), Marceau (2009), Veel (2009), Hufbauer et al. (2009),

142 While the discussion here focuses on the WTO, there may also be issues within preferential trade agreements. More research is required on this question.

expires in 2012. The concern among many observers, however, is that if governments fail to reach agreement regarding their respective rights and obligations in the climate change field, this may place the WTO regime under severe strain. The strain will occur as governments move to defend their perceived rights in the face of trade measures which are aimed at managing competitiveness pressures that arise from the cost implications of varied carbon-constraint polices.

This chapter does not aspire to an exhaustive treatment of the interface between trade and climate-change policies,[143] nor does it offer interpretations of the WTO legal position in respect to possible measures taken in the name of climate-change policy and/or the defence of competitiveness that have an effect on trade. Instead, it merely identifies some of the main trade issues that could arise in the context of the competitiveness issue. The policy areas briefly mentioned include: i) border adjustments on imports and exports in respect to differential carbon constraint costs, ii) domestic and export subsidies, iii) standards, and iv) public policy exceptions.

5.1 Border adjustments for the carbon content of production

Much discussion has taken place about the WTO-consistency of adjusting border charges to equalize the production costs attributable to carbon emission controls. Domestic carbon-constrained producers will typically have paid a carbon tax or used emission permits that imply a cost which could be expressed as a tax equivalent.[144] The competitiveness concerns arising from these taxes relate to imports as well as exports to other markets. Exporters of like products to the market concerned may have paid less or nothing at all by way of charges on emissions-hence the demand for a neutralizing charge on imports. Current WTO rules contemplate indirect charges on imports, in accordance with the destination principle of taxation. Legal analysts differ on the question of whether or not adjustments can apply on taxes on inputs into production that are not physically incorporated in the product concerned.

On the export side, where producers wish to neutralize carbon-constraint costs in third markets, there appears to be less questioning of the legality of remissions or rebates on domestic taxes upon exportation when inputs are not physically incorporated. The calculation of such adjustments on inputs is complicated and fairly data-intensive. It is necessary to know the technical coefficients of production and the prices of all traded inputs in relation to the final price of the product concerned. In the case of adjustments on imported products as opposed to exports, an additional question would be, who would make the calculations? Would it be realistic to expect the authorities in the exporting country to do so? Moreover, such adjustments on competing imports would need to net out carbon-constraining policies applied by the exporting country-which could take many different forms-and the calculations would become even more complicated. It would seem, then, that even if there were to be agreement on the appropriate policy for border adjustments on imports and exports, the details of such calculations would offer fertile ground for further dispute.

143 For a listing of the relevant policy areas, see the note by Gabrielle Marceau prepared for this conference.

144 The incidence of the tax equivalent associated with emission permits will depend on circumstances, including whether the user of the permit had to pay for it as opposed to receiving a free allocation.

5.2 Domestic and export subsidies

Subsidies obviously have a role in supporting abatement through emission reductions and adaptation. They can take many forms and affect relative prices-and therefore competitiveness-in international trade. The WTO's subsidy rules involve prohibition in certain cases (e.g., export subsidies on manufacturers in the case of most WTO Members), and in others a right of action either though legal challenge or the use of countervailing measures against subsidised products. Subsidies outside the prohibited category may be challenged legally when they are considered to have adverse effects on exports to the market of the subsidizing country or on the conditions of competition in other markets (including that of the complainant). Countervailing duties may be imposed on subsidised products when the subsidies can be shown to cause injury to domestic industry. The tension, once again, is between rules intended to preserve a balance of rights and obligations in the trade field and public policies that aim to address climate change.

5.3 Standards

The WTO rules on standards cover mandatory and voluntary standards and conformity-assessment procedures. They seek to guarantee non-discrimination in the use of standards and standard-related procedures and to ensure that they do not constitute an unnecessary obstacle to trade. The WTO rules also emphasise the desirability of harmonisation of standards and conformity-assessment procedures and encourage the use of international standards. Standards and conformity assessment procedures are clearly relevant to energy efficiency issues and a range of policies aimed at mitigating climate change (both emission abatement and adaptation). In the absence of clear interpretations and understanding in relation to the design and use of standards, disputes may arise at the interface between perceptions of legitimate public policy and trading rights.

5.4 The public-policy override

The WTO has general exceptions provisions that allow trade restrictions that would otherwise be inconsistent with mainstream obligations. Among these public-policy provisions is one that permits trade restrictions in order to protect human, animal, and plant life or health (Article XX(b)) and another to conserve exhaustible natural resources. Such measures must be non-discriminatory in both the MFN and national-treatment sense, and they must not restrict trade beyond the degree necessary to achieve the stated public policy objective. These strictures aim to ensure that a measure does not embody arbitrary or unjustifiable discrimination, or constitute a disguised restriction on trade. The risk here is that national interpretations of a legitimate use of the public policy override might be interpreted as unfair or opportunistic by trading partners, leading to a trade dispute in the WTO.

6 Conclusion

Two conditions are necessary to avoid a clash between climate-change policy and trade policy. The first is agreement among governments on their respective rights and obligations in an international regime to manage climate change. The second is adequate interpretative flexibility in the WTO to accommodate prior understandings about the trade consequences of public policies aimed at mitigating climate change. A third desirable condition for ensuring policy harmony would be to rely as little as possible on trade policy as a rectification or enforcement mechanism where cooperation in the primary policy area-climate-change policy-has eluded governments.

The more internationalised a post-Kyoto Protocol climate change regime, the greater the likelihood that pre-commitment can be forged on rights and obligations and how these impinge on the trade regime. The clearer the message in climate-change policy, the easier it becomes an accommodative role for the WTO. If cooperation proves elusive in the sphere of climate-change management, the WTO's dispute settlement system could become the battleground where governments will take their differences on climate-change policy. Such an eventuality could put unsustainable pressure on the trading system, leading to a loss in gains from trade as well as ineffectual climate-change policy. It would therefore seem incumbent upon governments to recognise the links and the risks and to work hard for coherence in both policy domains.

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15. Are Current Trade Rules Sufficient for Regulating Trade in Emissions Permits?

Liz Bossley[145]

1 Summary

- The international market in emissions permits is a key component of the climate change mitigation strategy of the Kyoto Protocol.
- The Kyoto Protocol and the national emissions trading schemes that have developed in response to it do not dictate how the permit market should operate or the form that emissions contracts should take.
- The contracts and derivative instruments in emissions permits have evolved very rapidly and require close monitoring to ensure that abuses, such as the criminal evasion of VAT witnessed in the European market, are picked up quickly and dealt with by the appropriate regulatory or legal authorities.
- Emissions regulators are themselves key actors in the emissions market. They determine the supply and demand fundamentals of the market and are direct participants through government auctioning of allowances.
- Emissions regulatory authorities should be subject to the same oversight by financial regulators and subject to the same high standards of market behaviour as the private sector.

2 The role of trade in cap-and-trade

In order to answer the question posed by this chapter, first let us remind ourselves of the mechanics of the cap-and-trade concept that underpins the Kyoto Protocol, from which the bulk of the current trade in emissions permits flows.

A Central Authority (in the case of the Kyoto Protocol, this is the body of the UN Framework Convention on Climate Change, or UNFCCC), sets a limit on the permitted level of greenhouse gas emissions ('cap').

The Central Authority either sets this cap or allocates permits ('allowances') that bestow the right to emit greenhouse gases (GHGs) below current or expected emissions levels. Allowances are either given for free or sold by auction. The emitter, faced with a shortage of allowances, can then:

145 CEO, Consilience Energy Advisory Group Ltd

- cut its production;
- invest in cleaner technology:
  - domestically,
  - overseas[146], or
- buy sufficient allowances to cover its shortfall of allowances compared with its actual emissions level.

The Kyoto Protocol relies on the ability of markets to function efficiently to enable countries and companies to trade allowances and establish the international price of carbon. A clear carbon allowance price will allow emitters to choose which of the three options mentioned above-cut, invest or buy – is the most economically efficient for them.

The body of the UNFCCC can congratulate itself that, regardless of what else may have gone right or wrong in its climate-change mitigation effort, we now have a functioning carbon market that is beginning to send a price signal to investors. This allows an investor to draw up its internal carbon abatement curve and find the point at which different carbon-reducing investments are cheaper than simply buying allowances in the market to comply with legislation.

So a high international allowance price is essential to the success of the Kyoto Protocol's objective of reducing GHGs by providing a stimulus to greater investment in clean technology.

Unfortunately, the price signal the market is currently transmitting is too low to incentivise investment in many new low-carbon technologies, such as carbon capture and storage. But that is a consequence of caps being set too high; it is not the fault of the market. In an efficient market, when there is an over-supply of any commodity, its price falls. So the carbon market is operating efficiently. If the Copenhagen conference in December produces low carbon caps for a wider range of countries, then there is a rapidly maturing market ready and able to deliver a price signal that will galvanise investment in carbon-reducing technologies.

3 The market in emissions allowances or permits

The UNFCCC did *not* legislate how carbon allowances should trade. The Kyoto Protocol made no provision for the establishment of regulated exchanges to trade carbon allowances. It did not suggest a contractual framework for the emissions trade. It placed no ceilings or floors on the price at which allowances may trade. Most traders would agree that this was a wise decision. Regulators are not good at markets. The people best able to design contracts and trading instruments are the parties who have a vested interest in doing so-the companies who have to comply with the legislation and will have to buy or sell the allowances.

The Kyoto Protocol created this new commodity called the emissions allowance. Each allowance bestows the right to emit 1 tonne of CO_2 equivalent. As anticipated, the financial-services industry took up the challenge defined by their trading behaviour to develop a suite of contractual and financial instruments which allow

146 The overseas investment option refers to the Kyoto 'project' mechanisms: Joint Implementation ('JI') and the Clean Development Mechanism ('CDM').

companies to buy and sell allowances to comply with legislation, to manage their emissions price risk, and to underwrite the economics of carbon-reducing investments. Within a few short years we have seen the development of:

- physical contracts,
- forward contracts,
- futures and other exchange-traded contracts, and
- derivatives (swaps and options).

4 The role of regulators in cap-and-trade

In any market, the financial regulatory authorities have a significant role to play-not in determining how the market trades, but in preventing market abuse such as price-fixing or the exercise of monopoly power, or criminal practices such as money-laundering. The GHG emissions market is no different. Already we have seen apparent criminal behaviour involving a VAT scam in the European emissions market, which has resulted in arrests and prosecutions. This market must be subject to the same scrutiny as any other commodity market.

But the biggest potential abusers of the emissions market are regulators themselves, i.e., the government bodies who determine and administer the creation and allocation of emissions allowances.

The emissions market is arguably a market in regulatory risk. No one would be trading emissions allowances if there were not regulations and legislation obliging countries and companies to reduce their greenhouse gas emissions. The supply and demand fundamentals of this market are determined by emissions regulators and the caps and deadlines that they set. They have a responsibility to manage the release of price-sensitive information as does the private sector.

Europe learned this lesson the hard way when data concerning the over-supply of allowances in the first phase of the European emissions trading scheme (EU ETS) was leaked in May 2006. There were big winners and losers in the market as the news spread patchily to market participants. There is no suggestion that the leaks were anything other than well-intentioned clumsiness, but the impact was the same as deliberate abuse. Had this occurred in the private sector, financial regulatory authorities would doubtless have investigated thoroughly.

5 Government auctions

It was noted above that the Kyoto Protocol did not attempt to design the market in which carbon allowances will trade. As new national emissions trading schemes emerge around the world, in most cases emissions regulatory authorities are leaving it up to market participants to decide for themselves how and where to trade and what contractual framework they will use.

The notable exception to this rule is government auctioning of allowances. This occurs when an emissions regulator is required to place a large allocation of

allowances into the hands of the private sector and uses a public auctioning mechanism to achieve the necessary transfer. This makes the emissions regulator itself a significant market actor, who in an ideal world would be subject to oversight by a financial regulator.

The concept of an auction typically places limits on when and where the sale takes place and the quantity sold during the auction process, and it may also place limits on the type or number of buyers entitled to bid. There is also an implicit requirement on behalf of the seller to offer advance notice of the timetable for the sale and quantity to be sold. Commercial firms would rarely choose to put themselves in that position.

There is nothing intrinsically wrong with government auctioning of emissions allowances, but governments generally are not best placed to assess the credit status of a wide range of potential bidders. This drives them to pre-qualify a limited number of financially secure bidders and rely on them to trade the allowances they buy at auction in the secondary market. In effect, regulators erect a barrier to a large number of buyers who might otherwise wish to participate in the auction. To ensure that the 'price markup' charged by pre-qualified intermediaries remains competitive, the government auctioning body should be required to make every effort to qualify as many bidders as possible.

European member states announce in advance how many allowances they will be selling and on what day. They even coordinate auction dates to ensure that they are not all selling on the same day. There is obviously no malicious intent to manipulate prices in this coordination, but if industrial firms behaved in the same way, they would be investigated for price collusion.

6 Conclusion

In response to the question, 'are current trade rules sufficient for regulating trade in emissions permits?' the answer is almost certainly no.

This market has evolved quickly, but it is still in its infancy. It is a market of an 'artificial' commodity created by legislation. While the legislation is still being written, market regulators must be vigilant to spot imperfections that may lead to abuse.

Because governments are themselves a key component of the market, both in determining the supply and demand fundamentals and as direct participants through the auctioning process, financial regulators would be well advised to hold the activities of the emissions regulators to the high standards required of the private sector.

16. The WTO, Carbon Finance, and China: Does International Cooperation in Carbon Financial Regulation Need to be Strengthened?

Heng Wang[147]

This chapter will focus first on the scope and risks of carbon finance, then carbon finance and China, and finally, the issues that need to be addressed when considering negotiation of new or improved rules on energy governance, including the absence of current rules or current rules in need of clarification.

1 Scope and risks of carbon finance

According to a World Bank definition, carbon finance is the general term applied to resources provided to a project to purchase greenhouse gas (GHG) emission reductions ('carbon' for short).[148] Carbon finance may also cover "market solutions to climate change",[149] and is broader than carbon credit trading, as new instruments (such as weather derivatives and catastrophe bonds) are being developed to facilitate the transfer of weather-related risks.[150]

Some observations could be made. First, in many cases carbon finance is closely connected with the Clean Development Mechanism (CDM) projects. The Kyoto Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol) created Joint Implementation (JI)[151] and the CDM[152] to encourage

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148 The World Bank Carbon Finance Unit, Carbon Finance at the World Bank: Frequently Asked Questions, *http://wbcarbonfinance.org/Router.cfm?Page=FAQ&ItemID=24677#4*, last visited October 1, 2009.

149 Sonia Labatt and Rodney R. White, Carbon Finance: The Financial Implications of Climate Change, Hoboken, New Jersey: John Wiley & Sons, Inc., 2007, at. 2.

150 Sonia Labatt and Rodney R. White, Carbon Finance: The Financial Implications of Climate Change, Hoboken, New Jersey: John Wiley & Sons, Inc., 2007, at. 227.

151 Article 6 of the Kyoto Protocol.

152 Article 12 of the Kyoto Protocol.

investments from industrialised countries in projects that reduce carbon emissions in developing countries. There are Certified Emission Reductions (CERs) resulting from CDM projects and Emission Reduction Units (ERUs) resulting from JI projects. CERs are project-based and have undergone registration (e.g., by the CDM Executive Board).[153] Projects qualifying under the CDM can generate CERs which are then purchased by carbon investors or sold unilaterally by the project owner on international markets. Carbon finance helps to price the carbon emission allowances, manage emissions price risks, and provide funding for the CDM projects. For instance, $1 of carbon finance leverages $3.80 of underlying investment on average, and $9 of underlying investment in renewables in the clean energy sector.[154]

Second, there are various participants in the carbon finance market, including private and public entities, such as the World Bank and governments. For instance, the carbon finance products of the World Bank help expand the emission reductions market by reaching new sectors or countries that have yet to benefit, and reducing market-entry risks by pooling participants' investments via Carbon Funds.[155] Although the World Bank is involved in market areas that the private sector is reluctant to enter due to high risks, there are also public-private partnerships in carbon funds whose trustee is the World Bank.[156] Financial institutions and intermediaries, as well as investors and owners, all play a role as with traditional financial trading products[157].

Third, different kinds of risks exist in carbon finance, such as policy risks, which may occur at the international or national level. At the international level, carbon finance is often closely connected with the CDM projects under the Kyoto Protocol, whose first commitment period expires in 2012, after which, the international arrangement on GHG emission control remains unclear. This will significantly affect carbon and carbon finance in China which is one of the major supply countries of CERs. At the national level, domestic emissions reduction policy could constitute potential risks for carbon finance.

There are also market risks-which are similar to those of other financial products, but also subject to more complicated factors arising from climate policy. Although platforms such as the International Carbon Action Partnership have been formed, there is no well-developed global market of carbon emission rights that is easily accessible todeveloped and developing states. The function of price discovery is

153 The World Bank Carbon Finance Unit, Carbon Finance at the World Bank: Frequently Asked Questions, *http://wbcarbonfinance.org/Router.cfm?Page=FAQ&ItemID=24677#4*, last visited October 1, 2009.

154 Robert B. Zoellick, Carbon Markets for Development, (October 12, 2008) *http://wbcarbonfinance.org/docs/Development_Committee_Bali_Breakfast_Series_Carbon_Markets_4_Development_10-08.pdf*, p. 8.

155 The World Bank Carbon Finance Unit, Carbon Finance at the World Bank: Frequently Asked Questions, *http://wbcarbonfinance.org/Router.cfm?Page=FAQ&ItemID=24677#4*, last visited October 1, 2009.

156 The World Bank Carbon Finance Unit, Carbon Finance at the World Bank: Frequently Asked Questions, *http://wbcarbonfinance.org/Router.cfm?Page=FAQ&ItemID=24677#4*, last visited October 1, 2009.

157 Liz Bossley, 'Are Current Trade Rules Sufficient for Regulating Trade in Emissions Permits?', Mimeo, Paper for conference on Global Challenges at the Intersection of Trade, Energy and the Environment, 22-23 October, Centre for Trade and Economic Cooperation, The Graduate Institute of International Studies and Development and the WTO, Geneva, p. 5.

therefore restrained. Speculation risks still exist and prices sometimes change dramatically, especially for the complicated carbon derivatives.[158] Lessons from the subprime crisis must be kept in mind. Moreover, in many instances CERs and ERUs are sold forward from projects that have yet to start operations and therefore have material risks of non-delivery.[159] Risks may exist in the operation and implementation of the projects which receive the carbon finance. One example is the breach of contract on the part of the buyers of the CERs in the context of market price fluctuation.[160] China's regulation on carbon finance is yet to be developed.

2 China and carbon finance

China's carbon finance is developing rapidly. First, there is great potential for carbon finance to flourish in China, mainly driven by the CDM projects. In June 1992, China signed the United Nations Framework Convention on Climate Change (UNFCCC) which was subsequently ratified by the Standing Committee of the National People's Congress of China, making China one of the first 10 contracting parties of the UNFCCC.[161] China ratified the Kyoto Protocol in 2002, before it took effect in 2005.[162] As a developing country, China is not bound to reduce its GHG emissions under the Kyoto Protocol. However, the Chinese government considers climate change to be one of its major issues for government action. On June 4, 2007, the National Program on Climate Change was released, which provides guidance for the future national and provincial policies on climate change. In August 2009, the Standing Committee of National People's Congress passed the resolution actively responding to climate change.[163] In the United Nations Climate Change Summit held in New York in 2009, Chinese President Hu Jintao noted that China will strive to reduce carbon dioxide emissions per unit of GDP by a considerable margin from the 2005 level.[164] A number of laws have also been enacted. One example is the Law of Renewable Energy, enacted in 2005, which allows for, inter alia, subsidised interest rates for renewable energy projects.[165] Other examples include the Energy Conservation Law amended in 2008, the Circular Economy Promotion Law enacted in 2008, and the Cleaner Production

158 Yuan Ying, 'Carbon Finance: More than Opportunities', *Yinghang Kehu*, Vol. 9 (2008), at 22.

159 *Global Trends in Sustainable Energy Investment 2009: Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency*, 2009, p. 46.

160 Wang Jiang, Chen Xi, 'The Problem of Market Supply under the Background of Prosperous Supply and Demand in China's CDM Carbon Finance Markets', Num. 10, 2009, p. 5.

161 China Climate Change Info-Net, Introduction to the United Nations Framework Convention on Climate Change (UNFCCC), *http://nc.ccchina.gov.cn/web/NewsInfo.asp?NewsId=287* (last visited November 1, 2009).

162 National Climate Center, China Meteorological Administration, IPCC Assessment Reports and UNFCCC, *http://www.ipcc.cma.gov.cn/Website/index.php?ChannelID=16&NewsID=128* (last visited November 1, 2009).

163 Xinhua News Agency, 'China's legislature endorses climate change resolution', *http://www.npc.gov.cn/englishnpc/news/Legislation/2009-08/27/content_1517058.htm* (last visited September 12, 2009).

164 Ministry of Foreign Affairs of China, 'UN Climate Change Summit Opens in New York Hu Jintao Attends the Opening Ceremony and Delivers an Important Speech' (last visited September 25, 2009).

165 The Law of Renewable Energy of China, Article 25.

Promotion Law enacted in 2002. These laws include special chapters on financial incentives[166] and address taxes and other measures. Moreover, all of these laws and policies, together with the voluntary emission reduction efforts of some domestic enterprises, reflect China's willingness to handle climate change and provide great opportunities for carbon finance development in China.

CDM projects are the major contributors to the development of carbon finance in China, although there is uncertainty of the post-2012 arrangement. China is playing an increasingly important role in the carbon finance market. By far the largest source of credits has been China, which by virtue of its size and substantial growth rate has been able to demonstrate more opportunities for reducing its GHG emissions growth rate.[167] Rather than coming from projects reducing fossil fuel use, most of the credits reduce emissions of very potent GHGs from chemical processes (HFC and N_2O).[168]

Second, there are a wide variety of participants in China's carbon finance market, whether they are public or private, domestic or foreign. They include governmental agencies (e.g., the People's Bank of China and the Ministry of Environmental Protection), domestic and foreign financial institutions, investors, and enterprises. The Tianjing Climate Exchange has been recently appointed by the People's Bank of China, as the experimental platform for carbon finance.[169] The former General Administration of Environmental Protection, currently State Environmental Protection Administration, has also collaborated with the International Finance Corporation to draft the green credit and environmental protection guideline.[170] The CDM Project Operation and Management Regulations were issued jointly by the National Development and Reform Commission, the Ministry of Science and Technology, the Ministry of Foreign Affairs and Ministry of Finance in 2005. Under Article 11 of the CDM Project Operation and Management Regulations, Chinese-owned enterprises or enterprises whose shares are controlled by Chinese investors may develop CDM projects if these enterprises are located in China. The Regulations do not prohibit foreign-invested companies to develop CDM projects. Moreover, foreign financial institutions are actively engaged in the process of carbon finance.

Third, China's carbon finance market is far from fully developed. Compared to a mature market, carbon finance is in its infancy in many aspects, such as the limited scope of what can be traded.[171] China's carbon finance is in an even more underdeveloped stage for reasons which include but are not limited to the uncertainty of the international arrangement and industry capacity limit. There is

166 *The Energy Conservation Law*, Chapter V; the *Circular Economy Promotion Law,* Chapter V; the *Cleaner Production Promotion Law*, Chapter IV.

167 *Global Trends in Sustainable Energy Investment 2009: Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency*, 2009, at p. 46.

168 *Global Trends in Sustainable Energy Investment 2009: Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency,* 2009, at p. 46.

169 Li Shumin and Dou Yusheng, Central Bank designates Tianjin Binhai New Area as Carbon Finance Experimental Platform, *http://finance.sina.com.cn/roll/20090926/02096796140.shtml (last visited September 28, 2009).*

170 Sun Xiuyan, To Bring Green Credits to Technology Platform, Green Credits Industrial Environmental Guideline to be Issued This Year', *http://env.people.com.cn/GB/6831986.html* (last visited November 1, 2009).

171 Sonia Labatt and Rodney R. White, *Carbon Finance: The Financial Implications of Climate Change*, Hoboken, New Jersey: John Wiley & Sons, Inc., 2007, at. 229.

still considerable uncertainty in terms of China's role in carbon finance, which largely depends on the post-2012 global carbon control arrangement. Moreover, the financial and technical capacity limit may hamper the development of carbon finance in China. Endogenous financial institutions in China are just starting to provide carbon finance products due to their limited capacity to innovate in the carbon finance market.[172] Other reasons may also include the lack of experience in carbon finance.

One open issue is the fair distribution of carbon revenues, and who determines such (project developer, financial institutions that finance the project, or others).[173] Most emerging markets are imperfect, and information asymmetries and the lack of competition prevent capital markets from doing what is necessary.[174] It is the same case in China. Another challenge is the insufficient regulatory capacity of China and other developing countries. Regulators are not very familiar with the rules and practices of carbon finance. The regulatory capacity, and particularly financial regulation capacity, must be strengthened. For instance, the regulation of weather derivatives and other financial innovations with respect to climate change could be a tough job for Chinese regulators. A third issue is that the pricing mechanism of carbon in China is to be further developed. However, there have been some tentative measures adopted by Chinese governments to handle the potential risks. One typical example is that China has seemingly set the minimum sales price for the carbon emission reductions resulting from the CDM projects.[175]

In summary, various factors, including China's WTO commitments, financial regulation need, environmental concerns, and economic development demand, make the issue of carbon finance a great challenge to China. These factors may potentially conflict with each other and need to be balanced. China faces the major challenges of balancing sustained economic growth objectives with environmental sustainability and responding to demands for greater responsibility in tackling climate change amid growing concerns about its rising competitiveness among its trading partners.[176] Such a balance is complicated by China's wide and deep WTO

172 The active participation in European carbon finance and the high returns from the capital market has attracted the attention and serious participation of Chinese financial institutions. However, only very few banks in China have provided climate-change-related financial products. Beyond carbon transaction, the EU Emission Trading Scheme also attracts the creation of relevant financial service industries. Some companies, formed to specialise in carbon emission trading, may provide the information-provision, research, and brokerage services. The insufficient number of these companies has been a 'bottleneck' to further participation in the international carbon transactions by Chinese enterprises and entities. See Wei Yiming et al, 'Market Mechanism to Respond to the Climate Change: The Implications of EU Emission Trading Scheme to China', *http://www.cqzg.cn/html/07/t-723607.html* (last visited Oct. 21, 2009).

173 The Carbon Convergence: Can Carbon Finance Enable Sustainable Development at the Base of the Pyramid?, *http://www.eandco.net/blogentry-1556.html* (last visited October 12, 2009)

174 The Carbon Convergence: Can Carbon Finance Enable Sustainable Development at the Base of the Pyramid?, *http://www.eandco.net/blogentry-1556.html* (last visited October 12, 2009)

175 Lu Zhenhua, Default Risks Arising: China's Carbon Transactions at the Crossroad, *http://www.21ce.cc/content.jsp?classid=1090&typeid=1065&news_id=20090323112024900563* (last visited October 17, 2009).

176 See *Trade, Climate Change and Global Competitiveness: Opportunities and Challenges for Sustainable Development in China and Beyond,* March 2008, p. 4.

commitments on financial services, financial regulation, and even investment, intellectual property, and competition considerations.

3 International regulation of carbon finance: present and future

3.1 GATS rules and carbon finance

One may argue that the IMF and the World Bank are closely involved in climate and carbon finance, whereas the WTO is not.[177] This does not mean that the WTO rules are irrelevant. Actually, the WTO rules play an important role in the regulation of carbon finance. In the broader sense, the concerns about violating WTO rules have had a 'chilling effect' on climate treaty negotiation.[178]

The GATS (General Agreement on Trade in Services) is applicable to the measures affecting services, especially financial services, in carbon finance. Many rules of the GATS are relevant, including prudential regulation,[179] domestic regulation discipline,[180] national treatment and most-favoured-nation treatment, and business practices. Members may adopt measures for prudential reasons, 'including for the protection of investors, depositors, policy holders or other persons to whom a fiduciary duty is owed by a financial service supplier, or to ensure the integrity and stability of the financial system'.[181] These prudential measures constitute an emergency safeguard measure. The domestic regulation discipline is also relevant to avoid the possible impediments to the carbon finance market.

National-treatment and most-favoured-nation principles may require that foreign investors and financial service providers be allowed to participate in the domestic cap-and-trade system.[182] The national-treatment provision will in turn depend on the commitments of the member. It is noteworthy that China has made substantial commitments in the financial services sector. Meanwhile, the complexity of participants in the carbon finance market may also bring challenges when the WTO rules are applied. As the WTO law usually imposes obligations on governments rather than on private parties, there may be some problems with regard to the practice of the private entities. GATS Article IX on business practices may help to handle some of the problems but may not be sufficient. Moreover, the Decision on Trade in Services and the Environment, adopted at the end of the Uruguay Round, indicates that the measures to protect the environment may conflict with the GATS provisions, and that it is not clear that there is a need to provide for more than is contained in

177 Jillian Button, 'Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model', 32 *Harv. Envtl. L. Rev*. 571, at 593.

178 Steve Charnovitz, 'Trade and Climate: Potential Conflicts and Synergies', *http://www.pewclimate.org/docUploads/Beyond_Kyoto_Trade.pdf* (last visited October 1, 2009), at 2.

179 GATS Annex on Financial Services, para 2 (a).

180 GATS Article VI.

181 GATS Annex on Financial Services, para 2 (a).

182 Elias Leake Quinn, The Solitary Attempt: International Trade Law and the Insulation of Domestic Greenhouse Gas Trading Schemes from Foreign Emissions Credit Markets, 80 *U. Colo. L. Rev*. 201 (2009), at 203.

paragraph (b) of the GATS Article XIV on general exceptions.[183] Theoretically, other agreements such as GATT (General Agreement on Tariffs and Trade) may be applicable to carbon finance, as the GATS and the GATT are not mutually exclusive.

3.2 Possible rules development or clarification

3.2.1 WTO law and carbon finance

The WTO rules, if properly developed and applied, may have a positive effect on the development of carbon finance. There are a number of aspects that deserve attention.

First, the legal characterisation of carbon is crucial to the regulation of carbon finance. The key to expanding carbon finance is a credible long-term signal for the price of carbon.[184] However, it is unclear whether emission rights are commodities, currency-like units, or something else, such as securities.[185] Meanwhile, it needs to be determined if carbon shall be recognised as an asset or liability, as a future source of cash flow or expenditure, or as a source of return and risk.[186] Such legal characterisation of emission rights is important not only to determine the institutions responsible for regulating carbon finance, but also to impact the platforms on which derivatives are traded.[187] Potential confusion could occur with domestic institutions. In Germany, emissions derivatives will be monitored by the Federal Agency for Financial Services (Bundesamt fur Finanzdienstleistungen), whereas spot trades of emissions units for compliance purposes will not.[188] In the US, the Acid Rain Program has not required market oversight other than that of the US Environmental Protection Agency.[189] With regard to the international administrator of carbon finance, the nature of the emission allowances or credits requires clarification and the proper regulator needs to be identified.

Second, minimum standards of carbon finance regulation are necessary to ensure market access. The costs of carbon emission rights will partially be affected by the price of carbon finance products. Theoretically, a government could set lax regulation on carbon finance products to increase their industries' competitiveness. International cooperation on the minimum standards of carbon finance regulation may be established in or outside the WTO framework. At the beginning of the services negotiations in 2000, some Members proposed to negotiate additional disciplines for energy services, modelled on the telecom Reference Paper, which

183 WTO, Decision on Trade in Services and the Environment.

184 International Carbon Action Partnership, Summary Report of the Second Global Carbon Market Forum on Auctioning, 'Auctioning carbon allowances – towards robust auction design and implementation', *http://www.icapcarbonaction.com/phocadownload/icap_auctioning_conference_report_final.pdf*, at 9.

185 Jillian Button, Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model, 32 *Harv. Envtl. L. Rev*. 571, at 575-80.

186 Sonia Labatt and Rodney R. White, *Carbon Finance: The Financial Implications of Climate Change*, Hoboken, New Jersey: John Wiley & Sons, Inc., 2007, at. 222.

187 Jillian Button, Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model, 32 *Harv. Envtl. L. Rev*. 571, at 590-91.

188 Jillian Button, Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model, 32 *Harv. Envtl. L. Rev*. 571, at 590-91.

189 Jillian Button, Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model, 32 *Harv. Envtl. L. Rev*. 571, at 591.

would address regulatory transparency, non-discriminatory third-party access, an independent regulator, and certain anti-competitive practices.[190] Such a reference paper may be possible for carbon finance.

Third, perhaps domestic regulation discipline on carbon finance may be negotiated. Overly burdensome regulations may also exist for foreign service suppliers. The possible development of domestic regulation discipline on carbon finance would address qualification requirements and procedures, licensing and qualification requirements, and technical standards, among others. In the future, disciplines on the domestic regulation on carbon finance, technical assistance and differential treatment for developing countries need to be added. Such concern on future domestic regulation provisions for developing countries has arisen with regard to the services trade as a whole.[191] As a developing country and a newly-acceded member (RAM) of the WTO, technical assistance may be needed to improve the China's capacity to regulate financial services related to carbon.

Fourth, transparency and accountability of governments are needed to make the carbon market and the carbon finance market efficient. The lessons could be drawn from the European emissions trading scheme (ETS) allowance price plunge from €30 to €13.19 in about 3 days in April 2006, due to revelations by Dutch and other governments of 2005 CO_2 emissions and rumours about over-allocation to industry.[192] Shortly thereafter, the situation was negatively affected by the European Commission, who in early May, 2006, accidentally posted emissions data on the over-supply of allowances in the first phase of the ETS ahead of schedule.[193] The extension of the WTO extra transparency obligations imposed on the RAMs to all the WTO Members may be a solution.[194]

Fifth, rule predictability with respect to carbon finance needs to be improved. Under the WTO law, there are a number of unsolved issues. For instance, some Members have undertaken WTO commitments in areas such as financial services. There is no clear services classification for carbon finance. Such uncertainty may negatively affect carbon finance and even bring disputes similar to the US-Gambling. There is no well-developed global market of carbon finance, and the WTO-consistency of rules of regional or national market is not without dispute. For instance, it is an open question whether the strict participation restriction of the EU's

190 Mireille Cossy, 'Energy Transport and Transit in the WTO', Mimeo, Paper for conference on Global Challenges at the Intersection of Trade, Energy and the Environment, 22-23 October, Centre for Trade and Economic Cooperation, The Graduate Institute of International Studies and Development and the WTO, Geneva at 4.

191 See Working Party on Domestic Regulations, Communication from Brazil, Colombia, Dominican Republic, Peru and the Philippines, Elements for Draft Disciplines on Domestic Regulation, Room Document, 26 April 2005, paras 11-18; S/WPDR/W/32. Quoted from Rudiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinaugle (eds), *WTO-Trade in Services* (Leiden: Martinus Nijhoff Publishers, 2008), at 191, footnote132

192 Raymond J. Kopp, Greenhouse Gas Regulation in the United States, *http://www.rff.org/RFF/Documents/RFF-DP-07-16.pdf*, at p. 7.

193 Raymond J. Kopp, Greenhouse Gas Regulation in the United States, *http://www.rff.org/RFF/Documents/RFF-DP-07-16.pdf*, at p. 7.

194 For a discussion on the WTO-extra transparency obligations imposed on China, see Heng Wang, WTO and Transparency: A Perspective From China, Working Paper No. 13/08, Inaugural Conference of the Society of International Economic Law, Geneva, July 15-17, 2008, *http://ssrn.com/abstract=1151395*.

emissions trading scheme is consistent with the GATS. One could argue that the EC Directive restricting carbon trading is inconsistent with the EC's commitment to liberalise its financial services under the GATS.[195]

To conclude, many issues here are relevant to domestic measures, which in turn are due to the complicated factors of carbon finance. With respect to China, domestic regulation is probably a key point to carbon finance. It is due to the necessity of prudential regulation and for the protection of public interests. It is also due to the fact that China has undertaken wide and deep market-access commitments for international services trade.

3.2.2 WTO law and beyond

The WTO law does not suffice to address the issue of carbon finance. There are other rules or forums that also deserve attention.

First, as a key point, it remains to be seen how the concept of common but differentiated responsibilities is possibly reflected in carbon finance. Second, environmental standards such as the equator principles and China's possible emission assessment system may affect carbon finance. The details are critical: how to properly formulate and implement these standards may have a direct bearing on carbon finance. Third, perhaps the UNFCCC Secretariat could be granted observer status in the WTO Council on Trade in Services when the carbon finance issue arises. Fourth, subsidies provided to the financial services industry for carbon finance (e.g., subsidies on carbon finance loan interests) are currently not regulated by the WTO. However, the different capacity of providing subsidies among developed and developing countries may potentially distort the trade in carbon finance.

In summary, carbon finance concerns WTO commitments, financial regulation need, environmental concerns, economic development demand, competitive concerns, intellectual property issues (e.g., Kyoto Protocol Article 10(c) on facilitation on financing transfer of technologies), and investment issues, among others.

4 Conclusion

Carbon finance is an issue which is gaining more importance and its development in China will have a serious bearing on carbon emission reduction. Several conclusions may be made here.

First, carbon finance is crucial to China, particularly to respond the need from CDM projects. Carbon finance in China is mainly driven by the CDM projects. Voluntary emission reductions are also likely to contribute substantially to carbon finance in China.

Second, domestic regulation is likely to be strengthened in China. This is due to financial risks, environmental and project risks, underdeveloped carbon finance markets (e.g., price war), and China's substantial WTO commitments on financial services, to name a few.

Third, WTO rules are quite relevant and could be clarified and developed to better

195 Marisa Martin, 'Trade Law Implications of Restricting Participation in The European Union Emissions Trading Scheme', *The Georgetown Int'l Envtl. Law Review*, Vol. 19:437 (2007), at 439.

satisfy the needs of carbon finance. If a multilateral arrangement cannot be developed, regional arrangements on climate change may develop in the future. Similar to other aspects of climate change,[196] the WTO dispute settlement system is more likely to be a battlefield for carbon finance issues if the multilateral environment agreements fail to proceed. There are serious potential risks of judicial activism.

Finally, to solve the challenges, the WTO needs to closely collaborate with other forums. The WTO rules will impact carbon finance but are not enough, given the challenges listed above. The 'learning by doing' approaches may help to shape the international regulatory framework.[197] Such efforts will concern not only trade, but also environment, investment, intellectual property, and competition. Political willingness is also crucial. Cooperation beyond the WTO is needed to strengthen the regulation and to ensure the integrity of the carbon finance market. Other international institutions may be needed to contribute to the process. It may occur within the framework of the IMF (if carbon is deemed a currency), the World Bank (which provides funding for the carbon emission reduction), or others. Moreover, the carbon finance market is underdeveloped but quickly developing. The lessons from the subprime crisis shall be drawn. Such necessity is even more real if cross-border or global carbon finance evolves in the future in the midst of currently fragmented carbon finance markets.

196 Joost Pauwelyn, 'U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law', Working Paper NI WP 07-02. Duke University: Nicholas Institute for Environmental Policy Solutions, 2007. Quoted from Patrick Low 'Tackling Climate Change and Competitiveness: The Relevance of WTO' Mimeo, Paper for conference on Global Challenges at the Intersection of Trade, Energy and the Environment, 22-23 October, Centre for Trade and Economic Cooperation, The Graduate Institute of International Studies and Development and the WTO, Geneva at 3.

197 World Bank, Carbon Finance for Sustainable Development 2008, at p. 73.

Floor Discussion of Part IV

Introductory statement by Claude Martin, Chairperson

There has been an acceleration of the debate on trade, energy and environment over the past 24 months. Trade Ministers first met to discuss this issue at the margins of a Climate Change Conference in Bali, less than two years ago. Many organisations have started programmes on trade & environment, trade & climate change, trade & energy, trade & sustainable development or some combination.

- A good example of these programmes is IISD's 'Bali to Copenhagen' programme (*http://www.iisd.org/trade/crosscutting/*), or the
- *Multi-Stakeholder Dialogue VI of 24-26 September 2009 at IMD*: The meeting emphasised the importance of fostering long-standing sustainable relationships in grappling with trade discriminations and curtailing greenhouse gas emissions. In this regard it was stressed that the agendas of trade, development and climate change should develop in synergistic fashion in order to ensure that one is not developed at the expense of the other.

Some of the key links between trade and climate change are:

- Liberalisation of trade in low-carbon goods (often known as 'EGS', Environmental Goods & Services)
- Border carbon adjustment mechanisms
- Intellectual property rights and technology transfer
- Investment in clean energy technologies
- Fossil fuel subsidy reduction
- Trade law flexibilities for subsidies to address climate change

It is within three of these areas that the links, i.e. where the trade and climate change regimes can most affect and assist each other, seem most important. The programme of this conference reflects these:

1) **Border carbon adjustment mechanisms:** Whether responses such as BCAs to perceived problems around competitiveness and leakage are justified, economically, legally and politically, continues to be debated. What is clear is that governments must take into account how they are going to deal with their energy-intensive industries and the jobs they provide. Another implication is that we have to develop carbon accounting systems that allow taking important decisions in relation to climate change..
2) We would like to understand how **investment in clean energy technologies can be incentivised**. Investment is at the core of our response to environmental problems - IEA estimates that we face a development challenge and the prospect environmental catastrophe if we don't find the extra funds such that these investments are clean. Eskom's experiences in Africa are a great case study of the inter-linked problems, including the need to improve the level of access to modern energy services while improving the local environment and reducing emissions of greenhouse gases. It is notable from the range of case studies that there tend to be country-specific barriers to clean energy investment. The

problem is that at present, in the absence of carbon internalization, no single renewable energy can compete with fossil fuels except onshore wind and concentrated solar power. The economic opportunities and job creation possibilities, on the other hand, for recycling, forestry, efficiency gains and renewable energies are huge, and will hopefully be driven by long-standing sustainability relationships. The shift to low carbon economies also entails considerable domestic consensus building around the principles of equity, effectiveness and justice.

3) **Fossil fuel subsidies** are a key barrier to clean energy investment. They act as a disincentive to the move to renewables and cleaner technologies and also starve governments and utilities in many countries of essential finance. The recent (Pittsburgh, 24-25 September 2009) agreement of the G-20 to phase out energy subsidies over the next decade is heartening and recognises how much subsidies could achieve in reducing environmental pressures and saving money. What role the WTO could play, in conjunction with the IEA, OECD, OPEC, the World Bank and other organisations such as the Global Subsidies Initiative, is to be decided and will be discussed in Panel 5 tomorrow.

- Two weeks ago, here at the WTO Public Forum, CIEL (the Centre for International Environmental Law) and Friends of the Earth Europe led the session on Trade & Climate Change. In their recent study – *Is World Trade Law a Barrier to Saving our Climate?* (*http://www.ciel.org/Publications/ClimateTradeReport_foee-ciel_sep09.pdf*) – they concluded that World Trade Law is not generally a barrier, and should not be identified as a scapegoat.
- The natural follow-on question is whether World Trade Law can perform a positive role in improving the environment:
    - On one hand integrating carbon markets was presented as a regulatory nightmare, made worse by the uncertainties of GHG accounting.
    - On the other hand, the multilateral trade system could also contribute to the climate change policy debate. This includes the liberalization of clean technologies, goods and services, a review of intellectual property rights to facilitate technology transfer, and improved oversight of subsidies.
- This takes us back to the purpose of trade. Between the post-World War II creation of the GATT and the WTO's creation in 1994, it was widely accepted that increasing trade improved welfare. However, in the past two decades or so, we have come to realise that unfettered trade and consequent globalisation may not adequately take into account the other two pillars of sustainable development: social needs and the environment.
- Today it seems unlikely that the trade regime would remain intact under a functioning climate change agreement. But without the Doha Development Agenda, it would make it all the more difficult to execute an effective climate change agreement encompassing both mitigation and adaptation.
- Thus we need to consider what type of WTO and other international organisations we want as part of our session today. The presentations in this panel cover competitiveness, trade, investment and the environment. The benefits of international co-operation on trade agreements and institutions being the servant of sustainable development rather than this being added as an afterthought to a liberalisation agenda is now evident.

Question from amember of the audience
If, two years from now, the Copenhagen Agreement achieved all the sufficient conditions set out this year, would our lives be easier in WTO on the climate change agenda?

Professor Patrick Low
No, because a lot more work has to be done to make the inevitability of a progressive climate change agenda possible. Namely, Copenhagen does not address competitiveness concerns. We are not obviating the overall problem by addressing only the provisions set out in Copenhagen. The situation would still remain extremely difficult.

Question from a member of the audience
What is the relationship between carbon traders and the WTO?

Liz Bossley
Unfortunately there is little to no interaction between the two bodies. Within the carbon trading market, issues from the WTO do not arise. This lack of dialogue presents a vital opportunity for the WTO to engage the trading sector.

Question from a representative member of the audience (Indian mission)
Regarding export taxes on carbon intensive products, the WTO is silent on the issue of export taxes, but export bans are prohibited (GATT Article XI). How are you to defend accusations of export bans with an official establishment of export taxes, specifically if they are too high?

Professor Patrick Low
Although there is a threshold on permissible levels of export tax, there remains some room for interpretation. Strictly speaking, however, under WTO rules export taxes are not prohibited.

Question from a member of the audience (Indian mission)
Regarding GATT silence on the export side of trade, we can conclude that it is possible to distinguish between inputs into exported products, and inputs in the production process which are not physically incorporated in the product. How are we to distinguish the two and account for taxation on the latter, in the case of carbon emissions?

Professor Patrick Low
To this date, lawyers still argue as to the interpretation of Articles II and III of GATT. Some of this debate is short-circuited if we go straight to Article XX regarding public policy exceptions. There is indeed asymmetry between what the Agreement states. However, there is clear and explicit recognition that remissional refund instruments are permitted with respect to non-physically incorporated products.

Question from a member of the audience
Regarding the suggestion of a 'destination principle', our current regulation scheme does not concern products, just installations, and energy consumption. How do you translate

this regulation to products? What is to happen at the border? Export rebates would seem to make the environmental goal absurd.

Professor Patrick Low
Although the differentiation between installation versus product is unclear, it is possible to allocate emissions to units of production by working out the cost constraints on carbon. Regarding the environmental goals, this process involves less actual climate change mitigation, meaning states must be more constraining domestically to balance the effects. This complication makes the policy path more difficult. With regards to the role of the WTO and the debate to make new rules or interpret existing ones, this is still left open

Question from a member of the audience
The sectoral approach is an interesting concept, but the extension of different systems to different imports could create trade diversions, for example, with respect to the chemicals industry. Given that companies have to compete on a world scale, is this really a solution?

Vincent Mages
As a company, Lafarge does indeed support an Emissions Trading Scheme (ETS). The problem is when there is one ETS in Europe and other systems outside Europe. The concerns raised by Ms. Bossley about cross-border limitations of allowances arise in this situation. The role of the WTO in this case would be to facilitate the interaction between differentiated schemes.

Question from a member of the audience (Graduate Institute)
What is the philosophy to distinguish between products under border tax adjustments? That is, what is it that we are specifically measuring regarding carbon emissions, and is the measurement quantitative or also qualitative? Do we take into consideration differences in emissions from clean energy industries and those from more polluting energy industries?

Professor Patrick Low
In general, emissions are emissions regardless of the sector of origin.

Vincent Mages
Standard protocol does include specification of emission origin.

Liz Bossley
The calculations and methodologies of emissions and their origin are covered explicitly in the IPCC rules.

Question from a member of the audience
Going back to the scenario of a potential 'train crash', what about the notion of 'train decoupling' in the WTO. If we look at the salad bowl metaphor of preferential trade agreements, the international system is already loosening. Regarding potential solutions, how far can a sectoral approach reach, and could it lead to a plurilateral agreement?

Professor Patrick Low
It is poignant to bring up regional agreements in this discussion, because they do pose certain risks to the world trading system. Namely, parties to such agreements can enact exceptions that could potentially bring significant distortions to trade. Also, rules and standards within regional agreements could bring up issues of trade discrimination. We must examine these possible risks with respect to the regional dimension of trade, energy, and environment. With regards to a sectoral approach, this method is important and could be of particular benefit when incorporating industries that have large trade volumes and large carbon emissions into the international system. Overall, an international agreement stemming from this approach is not inconceivable.

Question from a member of the audience (Mexican mission)
Regarding the train crash scenario within the WTO, this situation presupposes that there is no agreement on appropriate climate change policies. Is there potentially a forum where countries can assess the effectiveness of different policies-how they work, and their effect on international trade-in order to reach consensus? In the long run we can gain a richer understanding with more exchange and more transparency in the system.

Professor Patrick Low
Dialogue is indeed extremely important. Perhaps one way to approach such openness is to first have discussion within governments, and then between governments to garner more coherence in the discussion. Governments must have this dialogue at the national level, to think about this issue as a combination of environment and trade balance.

Question from a member of the audience (Graduate Institute)
Regarding capital market restrictions, in the 1980s there was a large amount of debt issued under different conditions by complicated swaps. Is the same thing happening in the energy or emissions market today?

Liz Bossley
What we see happening in the carbon markets today is not this sophisticated, although we have seen swapping. Specifically, we have been using differences in compliance rules and schemes to optimise. So, whereas the market is not yet at the level of the 1980s, we are seeing calendar spreads, for example, which are extremely active at present.

Question from a member of the audience (Graduate Institute)
How would China react to an EU, or an EU-US bill imposing tariffs on energy-intensive imports from certain nations not meeting climate change obligations?

Professor Heng Wang
China faces serious problems with respect to its heavy reliance on exports, so this bill would be crucial. The Chinese government could take several paths: it could facilitate

dialogue with the EU and the US or it could bring the case to the WTO. Both these outcomes would be doubtful. One possible, and more viable, solution would be to adopt domestic carbon taxes in order to absorb the rents from such a regulation.

Question from a member of the audience (Offshore Wind Advocacy, USA)
How far have we actually gone to reduce emissions, through the Kyoto agreement or otherwise, and what is the time frame before these carbon markets make an impact on the climate change problem?

Liz Bossley
In terms of cutting greenhouse gas emissions, the statistics are ambiguous. Instinctively, we have not achieved the goals of Kyoto-not because the markets are not working properly, but because the caps on carbon allowances are not low enough. That is, there will always be a surplus in the carbon market for political reasons. Phase I of Kyoto (2005-2007) saw politics play too large a role. Phase II (2008-2012) looked more promising to lower caps until the crash of September 2008. If we look at the larger picture under Kyoto, there is hopeful news that we are presently operative below 1990 carbon emissions levels. This does not mean victory, however. In order to see real results we need to substantially reduce caps to experience significant shortages in the carbon market and more important incentives to invest in clean technologies. Unfortunately the political will has not caught up yet.

Professor Gabrielle Marceau
There is one significant weakness of the GATT on climate change that was brought up in this panel. That is, GATT deals with products, and there are difficulties in transferring its rules onto climate change, installations, risks of abuse and other illegalities.

Part V

Subsidies and Pricing

17. Subsidies in the Traditional Energy Sector

Ronald Steenblik[198]

1 Introduction

Subsidies encouraging the production and use of energy, particularly fossil fuels, are a topic in urgent need of detailed enquiry and action. To date, only sporadic attention has been paid to the scale and pattern of subsidies to energy. With many governments now poised to devote even more resources to their energy sectors-both to reduce dependency on imported natural gas and oil, and to limit growth in carbon-dioxide (CO_2) emissions-it is essential that they have a clear picture of how much and what kind of support is currently being provided to energy production and consumption and, in particular, to those energy sources derived from fossil fuels. The recent declaration by the leaders of the Group of Twenty (G-20) nations, committing themselves to '[r]ationalise and phase out over the medium term inefficient fossil-fuel subsidies that encourage wasteful consumption'[199], further underscores the need for a comprehensive picture of subsidies in the sector.

Regrettably, unlike subsidies to agriculture and fisheries, there is no single on-going monitoring process or consistent database that can be enlisted to serve that function. Nor is there an international, or even plurilateral, 'Agreement on Energy' or 'Agreement on Fossil Fuels' to provide a framework for negotiating subsidy reductions. What the world has instead-at least until the announcement of the G-20 initiative, the details of which remain to be defined-is a patchwork of trade-related international subsidy disciplines and hortatory language in a few multilateral environmental agreements (MEA) that appear to have had only a limited degree of influence on subsidies to fossil fuels so far.

This chapter discusses the nature and scale of subsidies to the fossil-fuel and nuclear sectors and their impacts on sustainable development, describes existing international agreements that are or could be used to discourage subsidisation of fossil fuels, and suggests some prerequisites for international action in this area.

198 Senior Trade Policy Analyst, OECD Trade and Agriculture Directorate, Paris, France. The views of the author are his own and do not necessarily reflect those of the OECD or of its member countries.

199 G-20, 'Leaders' Statement', The Pittsburgh Summit, 24-25 September 2009, available at *www.g20.org/Documents/pittsburgh_summit_leaders_statement_250909.pdf*

2 The problem of confusion over subsidies to fossil fuels

Unlike agricultural subsidies, which have been the subject of sustained scrutiny for decades in the context of trade negotiations, the extent and distribution of subsidies to energy sources is less well understood, and information on them is certainly not as transparently available. A relative paucity of reliable data on the extent, nature, and impact of these subsidies is a significant barrier to making the case for policy change. The International Energy Agency (IEA, 2006) has stated that:

> One of the biggest barriers concerning energy subsidies in the OECD countries is a lack of up-to-date empirical data and analysis. Studies that have been undertaken on energy subsidies in OECD countries show results with remarkably large variance, due to [the different] methodologies used and the variety of defintions of energy subsidy incorporated.

This problem is significantly more acute with respect to non-OECD economies, where high-quality data are generally much less readily available, except on energy prices. Low energy prices, which give rise to consumer subsidies, particularly in developing countries and countries in transition, are monitored by several organisations, including the IEA, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, the International Monetary Fund (IMF) and the World Bank. In contrast, nobody has yet assembled a time-series of data that can provide a sense of trends in production subsidies over time. And each of the various ad hoc estimates that are produced from time to time uses slightly different system boundaries and calculation methods.

Disagreement over the scale of energy subsidies, to a large extent due to a wide variance in the way they are defined and estimated, is not trivial. For instance, ten years ago a US Government study (USEIA, 1999) estimated that the federal subsidies to the energy sector as a whole amounted to US$ 6.2 billion in 1999. But an earlier analysis by Koplow and Martin (1998) had already estimated that federal subsidies to the oil industry alone fell within a range of US$ 5.2-11.9 billion. With disagreements of this magnitude in information-rich economies, the level of uncertainty at the global level can only be described as being beyond even reasonable estimation.

The same applies, *a fortiori*, to the much more complex business of assessing the impact of these subsidies on economic and social development and the environment, both at a local and a global level.

A corollary of the lack of an international standardised system for monitoring energy subsidies is that various analysts approach the task of measuring subsidies to energy differently. Standard international definitions of a subsidy exist, of course. The WTO's definition, spelled out in Article I of its Agreement on Subsidies and Countervailing Measures (ASCM), should be adequate. Basically, the WTO defines a subsidy as a financial contribution by a government, or agent of a government, that confers a benefit on its recipients. GATT and WTO jurisprudence has helped provide clarity on what counts as a government financial contribution, and when a government action confers a benefit and when it does not.

Naturally, the WTO concerns itself only with subsidies that could potentially distort trade and distort it in a mercantilist sense-i.e., those that discriminate against foreign suppliers. Subsidies that support consumption of goods in a non-

discriminatory way are not of its concern. Second, policies that give rise to price differentials between domestic and international prices-what the OECD calls 'market price support' when referring to effects on producers, and 'market transfers' when referring to effects on consumers-are included in the ASCM definition of a subsidy only in the particular case of 'income or price support in the sense of Article XVI of GATT 1994', i.e., a financial contribution by a government, such as through intervention purchases, 'which operates directly or indirectly to increase exports of any product from, or reduce imports into, a Member's territory' (WTO, 2006, p. 53).

Thus, the main subsidy element missing from the WTO definition (because the WTO addresses subsidies and tariffs through different mechanisms) is a transfer between consumers and producers through government policies that raise or lower the price of a good or service compared to what it would be in the absence of government intervention. Such a transfer is commonly created by an import tariff or other trade barrier. A tariff works as a tax on imports, enabling domestic producers to command a higher price. Similarly, an export tax prevents domestic producers from charging the full price prevailing in international markets and thus benefits domestic consumers.

To a producer, it matters little whether increased revenues are provided through a direct, per-unit subsidy, or through a government-managed increase in the market price. Similarly, an individual consumer is going to be indifferent in choosing between receiving a subsidy to buy a good or being able to buy the good at a price reduced by the unit value of the subsidy. The main difference is that, while subsidies should show up in government budgets, market transfers do not.

Thus, a full accounting of subsidies requires taking into account both the subsidies included in the WTO definition and market transfers. It is common to refer to the totality of these two elements as 'total support' rather than 'total subsidies'.

A word needs to be said about externalities. There are many people, particularly environmental economists, who would like to add non-internalised externalities to the definition of a 'subsidy', particularly in the case of fossil fuels. There are many counterarguments for why that would be unwise. For one, subsidies are the result of government action; many externalities would exist even in the absence of government. Second, most definitions of a subsidy view it as a transfer, and its optimal level will often be zero. A (negative) environmental externality will vary by time and place, and it is at its optimal level when marginal abatement costs equal marginal damage costs. Third, the uncertainty surrounding an estimate of an environmental externality is usually far greater than for a subsidy; when an externality estimate is combined with a subsidy estimate, the information conveyed by the subsidy estimate is greatly diluted. For these (and other) reasons it is suggested that externalities be identified-and monetised where feasible-but otherwise not included in the formal definition of a 'subsidy'.

There is also a pragmatic reason to keep the accounts separate. Subsidies have a direct budgetary impact, making them more visible and therefore (in theory) easier to repeal than an externality is to internalise. Knowing the additional externalities created by subsidies is crucial when arguing for subsidy reform. Indeed, defenders of subsidies typically invoke positive external benefits (R&D spillovers, employment effects)-arguments that can more easily be countered by referring to much larger negative external costs.

3 The nature and scale of subsidies to fossil fuels and nuclear power

Many schemes are used to classify subsidies. The three most common are policy purpose (e.g., reduce CO_2 emissions), administrative form (e.g., grant, loan, tax concession), and economic incidence (e.g., subsidy to outputs, subsidy to intermediate inputs). While the ideal is to classify subsidies according to multiple criteria, practitioners generally prefer economic incidence: it provides a more objective basis for classification than policy purpose and is more economically meaningful than administrative form.

Subsidies to fossil fuels are provided in various guises. It is convenient to divide them up between those targeted at increasing domestic supplies and those aimed at reducing prices for domestic consumers. Of course, the final incidence of any subsidy (i.e., in whose pockets it ends up) may differ from its initial incidence-a subsidy to production may be passed on via lower prices to consumers, or a consumer subsidy may allow a producer to charge a higher price-but the distinction suffices for most subsidies, and is crucial when considering intended and unintended trade effects.

In terms of producer subsidies, the most economically distorting are those that are directly linked to production, or that support the price of the commodity itself, and that are linked to the use of an input. Included among these policies are government requirements that particular classes of domestic users, usually electric utilities, consume a minimum amount of a particular fuel. Such forms of support are generally provided to producers that have higher cost structures than their foreign competitors. They used to be common for coal in Europe and Japan, and are now more common for renewable energy.

Somewhat less distorting are government policies that support capital formation in an industry. These have largely been phased out for coal producers in OECD countries, but may still exist in some other parts of the world. They are still common, particularly through special capital-depreciation facilities in domestic tax codes, for the oil and gas industry. Many countries also spend public money on R&D supporting their domestic fossil-fuel industries, and on geological surveys to help identify new hydrocarbon deposits.

Support for capital formation, through subsidised credit and direct subsidies for capital equipment, and government expenditure on R&D, are also among the two categories of subsidies most commonly provided to the nuclear power industry. Other forms of support include below-cost provision of government-provided enrichment services; limits on liability resulting from an accident or attack; and the socialisation of costs associated with managing nuclear waste. Some countries make inadequate provision for plant decommissioning. And in the last decade several countries have expanded purchase mandates for 'green' energy to include nuclear power or have granted them windfall grants of carbon credits at the inception of national carbon-trading schemes (Schneider et al., 2009).

Table 17.1 sketches out what we know of the current situation regarding fossil fuels in terms of data availability. For the sake of exposition we divide it between the producer and the consumer sides, though the ultimate incidence-i.e., whose pocket a subsidy enriches-will vary from situation to situation. Except in one case, I have assigned no monetary values; rather, I provide a guesstimate of order of magnitude,

with a small 'x' designating a value between 1 and 4, and a large 'X' designating a value between 5 and 9. If those order-of-magnitude guesstimates are roughly correct, then that suggests that the numbers that are most often quoted-those provided through the under-pricing of fuels ('market transfers')-probably account for not much more than 60% of total transfers favouring fossil fuels, which may range between US$ 500 billion and US$ 700 billion per annum.

Table 17.1 Summary of incidence of subsidies to fossil fuels (including fossil-fuel-based electricity) and difficulty of estimating their values

Type of subsidy	OECD Countries		Non-OECD Countries	
	Incidence	$10^9/yr	Incidence	$10^9/yr
Producer subsidies				
Market price support	Uncommon: easy to estimate	x0	Common: to estimate moderately difficult to estimate	X0
Direct production subsidies (including tax incentives)	Common: moderate difficulty to estimate	x0	Extent not known: moderate difficulty	x0
Subsidies to energy-producing capital	Very common: complicated to estimate	x0	Abundant: difficult to find data and complicated to estimate	x0
Subsidies for inputs	Common: mainly through government services	x0	Probably very common, especially in the form of free resources: variable difficulty to estimate	x0
Government-supported R&D	Very common: data readily available from the IEA	x0	Common mainly in richer countries: moderately difficult to obtain data	x0
Consumer subsidies				
Market transfers (e.g., regulated low prices)	Common mainly in respect of regulated lifeline rates: data available but could be a big job	x0	Common: good time series available for general price policies	~400
Subsidies to energy-consuming capital	Common (e.g., for automobiles and aircraft): difficult to obtain data and estimate	x0	Probably common: difficult to obtain data and estimate	x0
Total		**X00**		**X00**

Source: Global Subsidies Initiative.

4 The effects of fossil-fuel subsidies

Subsidies to energy have a large bearing on international trade, particularly the energy industries concerned (and those that compete with them) and industries for which energy is an important intermediate input, like steel, aluminium, glass and cement. But they also strain the budgets of many countries and, to the extent they encourage use of more, or dirtier, fossil fuels, have a significant environmental effect.

Market interventions, in particular those that keep prices for fuels lower than their

market value, have been the subject of reforms urged by the World Bank and the IMF since the late 1980s. More recently, low energy prices-because of their distorting effects on competition in energy-intensive products, like fertilisers-have proved to be a contentious issue in negotiations over the accession to the WTO of certain energy-rich countries, like Russia. According to the IEA (2007), Russia's internal consumption of natural gas is subsidised at a rate of US$ 25 billion a year, which is more than twice the annual rate of investment in the Russian gas industry.

The climatic and local pollution consequences of burning fossils fuels are an even stronger reason for paying attention to subsidies that benefit them. Once again, we have only fragmentary information. But the little information we have is significant. A recent study by the OECD (2009) suggests that a multilateral removal of consumption subsidies alone would lower global CO_2 emissions by 10% by 2050, compared with a business-as-usual scenario. Eliminating such subsidies would of course necessitate careful planning, and may require flanking measures to help the poorest members of society adjust.

5 Past efforts to discipline fossil-fuel subsidies

The problem of subsidies to fossil fuels began to be analyzed in the 1980s, particularly by NGOs and inter-governmental organisations (Kosmo, 1987; IEA, 1988; Burniaux, 1990). An analysis by the World Bank (Larson and Shaw, 1992), however, caught the attention of top officials and was even mentioned in a Communiqué of the G7 in 1995. [to be confirmed]. Numerous new studies were commissioned (e.g., OECD, 1997) and both the World Bank and the IMF made reform of fuel subsidies a priority. Consumer subsidies were reduced in most of the newly emerging countries of Central and Eastern Europe, and several African and Asian countries, under pressure from multilateral lending institutions, partially or completely deregulated their fuel prices. But they did not disappear.

The entering into force of the WTO's Agreement on Subsidies and Countervailing Measures, in 1995, did not significantly alter the debate on subsidies to energy. For one, many of the countries that were members of the Organization of Petroleum Exporting Countries (OPEC) were not WTO members at the time, and several of them (e.g., Algeria, Iran, Iraq), along with the Russian Federation, still only have the status of observers. Bilateral and regional trade agreements have been largely ineffective in addressing subsidies to energy, for the general reason that, unlike tariffs, a country cannot make a concession on subsidies that selectively benefit only certain trading partners.

Interest in doing something at the international level about subsidies to fossil fuels has increased in recent years, however, and this time the conditions are much more auspicious than previously. Clearly, subsidies to energy have an impact on climate change. This was already recognised officially in the Kyoto Protocol, which contains hortatory language calling on signatories to avoid creating new subsidies to fossil fuels. With negotiations on a post-2012 international climate regime soon to reach a climax, the issue was already unlikely to go away.

On the trade side, concerns about the effects of subsidies to fossil fuels on trade in renewable energy technologies and biofuels have led to suggestions that the next

WTO trade round be an 'energy round', presumably addressing energy subsidies along with other energy-related trade issues. And recent months have seen attempts to forge plurilateral agreements to reduce or eliminate subsidies to fossil fuels, including a new commitment by the G-20. Meanwhile, new non-governmental projects, such as the Global Subsidies Initiative of the International Institute for Sustainable Development, which has made subsidies to fossil fuels the focus of its current work, will ensure that the size and effects of these subsidies start to attract the attention they deserve.

6 WTO disciplines on energy subsidies and the by-catch effect

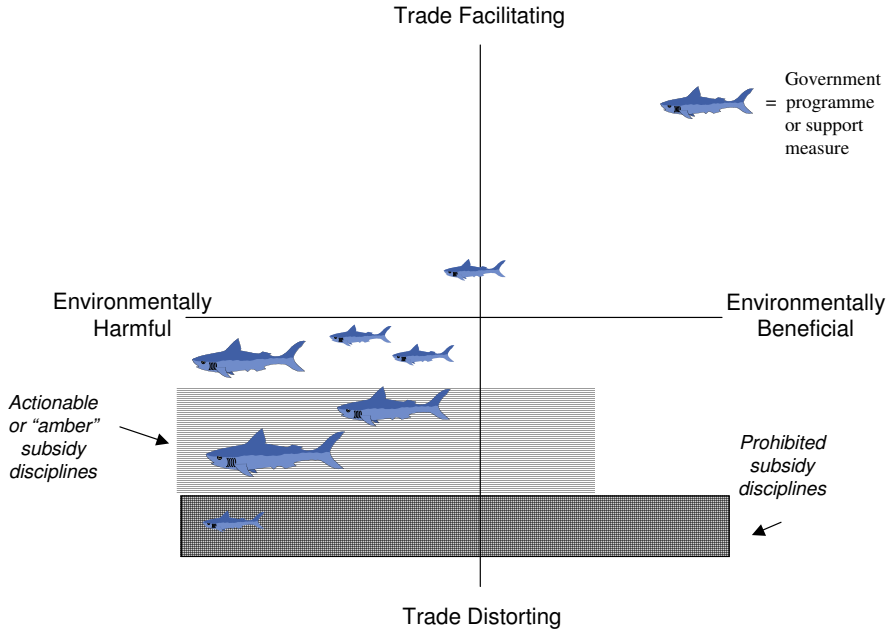
Given that much of the interest in reducing subsidies to fossil fuels is motivated by the benefits of doing so for the environment (see, e.g., OECD, 2009), it is worthwhile asking to what extent existing disciplines, notably those of the WTO, already are having a dampening effect on the use of subsidies. If at least some energy subsidies are both environmentally harmful and trade distorting, then current trade-related disciplines are likely to be having some dampening effect on environmentally harmful subsidies already. The supposition that many trade-distorting subsidies are also potentially environmentally harmful (or at best environmentally neutral) can be reasoned logically, and much of the empirical evidence points in that direction. The main empirical challenge, besides data limitations, is to ascertain in particular cases if a trade-distorting subsidy is actually environmentally harmful-e.g., if other government interventions, such as limits on pollution, render them environmentally neutral. It is also likely that some subsidies exist which are either environmentally beneficial and trade distorting, environmentally harmful but not trade-distorting (in a mercantilist sense), or perhaps even environmentally beneficial and trade-facilitating.

These relationships can be plotted on a graph with two axes (Figure 1): environmental effect and degree of trade distortion of support measures. The placement of the 'fish', which represent support measures, is illustrative only; it is not derived from any particular analysis. The cross-hatched rectangles in the lower half are the 'nets' of trade-related subsidy disciplines. The reason for shortening the top rectangle in the lower right-hand part of the graph is that some of the disciplines explicitly allow for subsidies that are deemed to be environmentally beneficial (and assumed to be minimally trade-distorting), such as in the 'green box' of the WTO's Agreement on Agriculture (and until 1999 in the WTO Agreement on Subsidies and Countervailing Measures). The looser mesh in the top-most net is meant to imply that some smaller (e.g., de minimus support under Article 6.4 of the Agreement on Agriculture) subsidies that are not.

Current international subsidy disciplines seek to catch (or avert) subsidies that are trade-distorting. They are the target. But some subsidies that are also environmentally harmful will also be caught (or discouraged) in the process, whether intentionally or not. To continue the fisheries metaphor, some energy subsidies may become a significant 'bycatch' of trade-related subsidy disciplines-but in this case, in contrast with most fisheries' bycatch, the extra harvest is desirable.

Of course, many would argue that there are holes in the nets, or that the nets are

Figure 17.1 Sectoral support seen from both the environmental and trade perspectives



Source: Author's own. Reproduced with permission.

not well placed. The big fish that evades WTO subsidy disciplines represents subsidies to consumption (the upper left-hand corner of the graph). Whether the WTO could, within its remit, extend the nets into that area is doubtful. For this reason, an additional or parallel process, such as that envisaged by the G-20 leaders is needed.

7 Where to from here?

Experience with previous efforts to address sectoral subsidies at the international level (see, e.g., Steenblik, 1999) suggest that an important prerequisite for success is good information.

All concerted action on subsidy reform-for agriculture, for coal (in Europe), for fisheries-has started from a thorough, respected description of the extent of the subsidies and the distortions they are causing.

Moreover, those efforts have been most successful when they have acted in that way for most of the major subsidisers simultaneously. This makes the policy community aware an issue has arisen that is worthy of attention and reduces the risk that any one country will become overly defensive out of a perception that it is being singled out.

Concerted action has also only happened when the monitoring of subsidies has become institutionalised-that is, countries know that the monitoring of their subsidies will continue into the indefinite future. One-off studies-as the World Bank published in the early 1990s (Larson and Shaw, 1992), and the IEA in 1999-can be too easily brushed aside.

That means, as well, that the method and data have to be respected and documented, and applied in a consistent manner across countries. Normally, that means setting up teams of experts in an inter-governmental agency. What is needed in the short term, however, is the creation of a credible effort that could be sustained outside of these institutions, if need be.

Concerted action also requires developing a core, and committed coalition of countries willing to push for work and negotiations in international forums. Thus, agriculture had its Cairns group, and fisheries had its Friends of Fish. A coalition for reform of energy subsidies needs to be built as well.

Finally, the general public must be receptive to the idea of reform. In industrialised countries, most people already regard subsidies to fossil fuels as perverse. But education (and accompanying measures) are needed in developing countries and countries in transition. A major part of the project will involve seminars and media training sessions in developing countries to help explain the project and the arguments for reform.

In short, the absence of authoritative information on the level and impact of subsidies denies policymakers valuable information that could inform their decision making and perversely empowers those with a vested interest in delaying policy changes aimed at addressing trade distortions, human health, and environmental externalities and access to energy.

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18. Export Taxes and Dual Pricing: How Can Trade Distortive Government Practices be Tackled?

Reinhard Quick[200]

The Doha Development Agenda (DDA) mandate explicitly refers to the reduction or elimination of tariff escalation. Tariff escalation is the practice of charging higher import tariffs on processed goods than on unprocessed goods. It has long been held that tariff escalation in developed countries may hinder the development of high value-added industry in developing countries. Yet, given the already low average tariffs on industrial goods in developed countries, it is doubtful that the degree of tariff escalation still existing today would discourage the development of a processing industry in developing countries.

With reference to tariff escalation in the developed world, developing countries have justified export duties or export taxes for certain commodities.[201] These measures are thought to promote the development of downstream processing industries and encourage foreign direct investment while at the same time being a reliable source of revenue. The aforementioned export duties have been designated as non-tariff barriers in the DDA Non-Agricultural Market Access (NAMA) negotiations. Export duties or export taxes are customs duties on exports often levied on commodities by exporting developing countries for fiscal or industrial policy reasons. Economically speaking, they are the reverse-side of tariff escalation since they make it more difficult for developed countries to process these commodities.

WTO disciplines on export duties are not clearly defined, hence the discussions in the DDA.[202] On the other hand, these measures are prohibited by some regional trade agreements and have also been dealt with in some accession negotiations (e.g., China and most recently Russia).[203]

The economic implications of export duties are well known:

200 *Geschäftsführer*, Verband der Chemischen Industrie. This paper is an excerpt from 'Further Liberalization of Trade in Chemicals – Can the DDA Deliver? A Summary of the Chemical Industry's Positions on the Doha Development Agenda' by Reinhard Quick, published in *Global Trade and Customs Journal* Vol.1, issue 1 (2006), p. 1 et seq. with some amendments.

201 *See OECD Document TD/TC/WP(2002)54/Final of 31 January 2003, Analysis of Non-tariff Measures: the Case of Export Duties*, p. 14.

202 See for example WTO/TN/MA/W/46/Add.12 of 24 May 2005, *Non-tariff Barrier Notifications, Addendum by the European Communities,* p. 2.

203 See note 2 above, p. 11, note 20 which reads: 'In the accession process of Russia export duties on minerals, petrochemicals, natural gas, raw hides and skins, ferrous and non-ferrous metals and scraps are discussed. Members argue that in the case of dominant supplier in Russia, third country buyers would suffer from increased cost and encounter the insufficient supply of the goods. They point out that the loss of relative competitiveness in the global market for downstream products *vis-à-vis* Russian products should be taken into account.'

> The economic effects of export duties need to be assessed with regard to their objectives as well as their overall effects on the economies of the trading partners concerned.
>
> When the purpose of export duties is essentially revenue, it may be asked whether alternative internal taxation measures could be equally effective and also less trade distortive. In making such an assessment it should be recognised that developing and least developed countries may need technical assistance to help modernise and improve the efficiency of their tax systems.
>
> When the objective is primarily the promotion of downstream industries, the economic implications vary according to the extent to which the exporting country can affect the world market price of the taxed product. However, whether or not there is such an effect, an export duty would create a differential between a price available to domestic processors and the price charged to foreign processors. This differential would provide a competitive advantage to domestic downstream processors. This could be justified by the 'infant industry' argument, i.e., to provide an initial incentive for the development of a processing industry. It would also improve the overall terms of trade of the country, benefiting its balance of payments. However the net result could be a welfare loss in that it would penalise exporters of the taxed product while benefiting downstream processing industries which in turn would have a reduced incentive to become truly competitive internationally. In this sense an export duty acts as an implicit subsidy for the domestic processing industries, providing them with an artificial competitive advantage both in the domestic markets of the country and in export markets.[204]

Given these negative effects, it is not astonishing that the EU attacks export duties as 'beggar-thy-neighbour' policies and insists that these measures be first bound, then substantially reduced, and eventually eliminated.[205] The European business community fully supports this approach. It is difficult to predict if the DDA will eventually agree on some discipline concerning export duties, given the WTO membership's fundamental disagreement on the issue.[206] Yet, it is clear that the conceptual justification in favour of export taxes (in the developing world) with the existence of tariff escalation (in the developed world) is difficult to make when the average tariff for industrial products (in the developed world) is as low as it is.

A dual-pricing scheme for natural resources is another non-tariff trade barrier which has considerable trade distortive effects. These measures are practiced in particular by Russia and Saudi Arabia with respect to natural gas. A dual-pricing scheme consists in providing the natural resource cheaper internally than after export;[207] since the government has a monopoly over the natural resource, it can fix the price. The economic effects of a dual-pricing system are the same as those of an export duty. The countries practising these schemes justify them as being a WTO-

204 Ibid, p. 15. A recent WTO study also supports these findings. See Roberta Piermartini, *The Role of Export Taxes in the Field of Primary Commodities*, WTO 2004.

205 See WTO/TN/MA/W/11 Add. 6 of 27 April 2006, Negotiating Proposal on Export Taxes, Communication from the European Communities.

206 India, for example, considers that export duties are not part of the Doha mandate; Note by the Secretariat, as note 30 above, p. 13. The EU's proposal on export taxes, see note 38 above, was sharply criticised by several developing countries including Argentina, Brazil, India, Indonesia, Malaysia and Venezuela. See Bridges Weekly Trade News Digest, Vol. 10, No. 14 of 26 April 2006, p. 8.

207 See for example WTO/WT/ACC/SAU/61 of 1 November 2005, *Report of the Working Party on the Accession of the Kingdom of Saudi Arabia to the World Trade Organization*, p. 12-13. See also Ulrich Klaus, *Russlands Erdöl und Erdgas im Kontext der WTO Rechtsordnung*, in *Der Beitritt Russlands zur Welthandelsorganisation*, Chritian Tietje (Ed.), Beiträge zum Transnationalen Wirtschaftsrecht, Heft 44, 2005, Martin-Luther-Universität, Halle-Wittenberg, p. 48.

compatible investment incentive. In fact, the dual-pricing system of Saudi Arabia has triggered many capital-intensive investments in the petrochemical sector. The capacities already built in Saudi Arabia and those expected over the next years exceed the demand of the region by far. They are aimed at supplying the world market[208] and thus can be seen as a threat to the European petrochemical industry.

The EU has attacked these practices for a long time, but it failed to have them eliminated in its bilateral WTO accession treaties with both countries: in 2003, the EU concluded an agreement with Saudi Arabia[209] and in 2004, one with Russia.[210] Initially, the issue looked as though it might have a positive outcome with Saudi Arabia,[211] i.e., a commitment undertaken by Saudi Arabia to eliminate dual pricing. However, in the negotiations with Russia, the EU did not insist on such elimination. As a consequence Saudi Arabia[212] withdrew its original commitment in the final WTO accession negotiations. This means that both countries can continue to practise a dual-pricing system. The EU's lack of enthusiasm to combat dual-pricing practices in the context of WTO accession can only be explained in political and geopolitical terms. WTO membership of Russia and Saudi Arabia was considered more important than solving the petrochemical industry's problems with dual pricing.[213]

The trade distortions caused by these schemes persist and are now being addressed in the DDA negotiations. It is interesting to note that both the EU and the US consider dual-pricing schemes as an issue to be dealt with in the 'rules' and not in the NAMA negotiations.[214] Legally speaking, dual-pricing schemes are not specific subsidies within the meaning of the WTO Agreement,[215] but rather confer a general benefit. Therefore, they cannot be attacked under the existing WTO regime.[216] Given

208 See *CHEManager*, 5/2006 p. 1-3. See also *Chemistry and Industry*, Issue 6 of 20 March 2006, p. 16.

209 EU Press Release IP/03/1188 of 30 August 2003: *Accession of Saudi Arabia to the WTO: Conclusion of the EU-Saudi Arabia Bilateral Market Access Deal*.

210 EU Press Release IP/04/673 of 21 May 2004: *Russia – WTO, European Union Russia Deal Brings Russia One Step Closer to WTO Membership*.

211 See note 42 above. The Press Release clearly refers to the elimination of the dual pricing practice by Saudi Arabia.

212 WTO Press/420 of 11 November 2005, *WTO General Council successfully adopts Saudi Arabia's terms of Accession*.

213 The issue of dual pricing amply demonstrates the difficulty of bridging the gap between the external aspects of competitiveness and general political considerations. On this issue see UNICE Position Paper dated 9 March 2005 on *Competing for Growth and Jobs in a Global Market, UNICE's Preliminary Views on the External Dimension of the Lisbon Agenda*, p. 3 at: *www.unice.org*.

214 WTO/TN/RL/W/78 of 19 March 2003, *Subsidies Discipline Requiring Clarification and Improvement, Communication from the Unites States*, p. 3; see also WTO/RL/GEN/94 of 16 January 2006, *Expanding the Prohibited 'Red Light' Subsidy Category*, Paper from the United States; or the *Submission of the European Communities on Subsidies*, WTO/TN/RL/GEN/135 of 24 April 2006.

215 On the specificity requirement of the Subsidies Code, see Christian Pitschas, *Das Übereinkommen über Subventionen und Ausgleichsmaßnahmen*, in *WTO Handbuch*, Hans-Joachim Priess, Georg Berrisch (Eds), München 2003, pp. 457 et seq.; see also Marc Benitah, *The Law of Subsidies under the GATT/WTO System*, The Hague, London, New York, 2001 pp. 87 et seq., p. 88 footnote 191.

216 'In the EC's experience, the current ASCM discipline does not permit theses practices to be tackled effectively…To that effect, a possible solution would be to introduce a specific prohibition'. See *EC Submission*, as note 46 above. See also Klaus, as note 40 above, p. 48.

their intrusive nature and the trade distortions they create, both the EU and the US have suggested categorizing these schemes as prohibited subsidies. This would solve the issue of specificity, since prohibited subsidies are indisputably presumed to be specific.[217]

Questions for discussion:

- Are dual-pricing practices subsidies?
  - OECD: '*any measure that keeps prices for consumers below market levels, or for producers above market levels, or that reduce costs for consumers and producers*'
- Are dual-pricing practices in violation of WTO subsidy rules?
  - (a) financial contribution, (b) benefit
  - Prohibited export subsidy?
  - Specificity
  - *De facto* specificity
- Are dual-pricing practices in violation of the WTO TRIMs Agreement?
  - Local content requirements?
- Do we need rules in the WTO dealing with the issue of access to raw materials?
  - The relationship between natural resources and the concepts of comparative advantage and the international division of labour?
  - Are WTO members entitled to an equitable share of the international supply of raw materials?
  - Article XX (j): 'provided ……that all contracting parties are entitled to an equitable share of the international supply of such products'.
- How to solve the issue?
  - Negotiations of new rules? Definition of 'equitable share of the international supply'
  - Prohibited export subsidies
  - Prohibition in accession negotiations, FTAs? Exceptions for environmental or societal (social, environmental) reasons?

217 See Pitschas, as note 48 above p. 458.

19. Incentives to Stimulate Renewable Energy

Stephen J. Orava[218]

As a result of the global economic crisis, countries around the world have adopted massive stimulus packages. The timing of the economic crisis corresponded to an exponential increase in the awareness of climate change effects and efforts to identify approaches to address them. As a result, a significant amount of 'stimulus' money was set aside to foster the development and commercialisation of renewable energy.

According to the United Nations Environment Program (UNEP) (September 2009), US$3.1 trillion has been spent in global stimulus packages. Approximately 15 percent are 'green' in nature, with US$250 billion in spending still identified as 'perverse' subsidies to fossil fuels. According to a Deutsche Bank Report (February 2009), US$ 200 billion has been committed for the development of new technologies, with more than 250 policies adopted in support of alternative energy.

In the US, the Emergency Economic Stabilization Act (EESA) provided US$185 billion in tax cuts and credits, including US$18.2 billion for clean energy. The American Recovery and Reinvestment Act (ARRA) made available US$ 94 billion of 'green spending' (out of US$787 billion), including in the areas of energy efficiency, renewable energy, water and waste, and mass transit. Other 'clean energy' proposals are included in pending U.S. climate change and energy-related legislation.

Similarly, France's stimulus package included US$6.1 billion (of US$34 billion) in 'green' investments, dominated by sustainable transport, buildings, and renewable energy. Among other things, Germany adopted the Transfer Renewable Energy and Efficiency (TREE) program, in which US$130 million was assigned for the development of renewable energy in over 50 countries. The EU's stimulus package includes contributions for economic recovery, security of energy supply, and GHG emissions reductions, with a budget of €3.98 billion for gas and electricity infrastructure, offshore wind energy, and CCS.

In China, UNEP reports US$218 billion in 'green' investment. The Chinese government also shares the costs of the development of solar power capacity and adopted its 11th Five-Year Plan, with US$71 billion in all forms of energy conservation and US$214 billion in renewable energy. Other Chinese stimulus packages may include US$440 billion for renewable energy and the development of 'clean' power.

What is the role of the WTO in the context of renewable energy? The WTO agreements governing trade in goods, trade in services, and the protection of intellectual property may all play a role in regulating the development of renewable

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energy. In relation to trade in goods, a key distinction is the treatment of the energy itself versus the products used to make it (i.e., the treatment of solar power versus solar panels). Although the WTO's General Agreement on Trade in Services ('GATS') provides a framework of rights and obligations applicable to services, the scope of current specific commitments in energy, environmental, and other key services sectors that could facilitate the development of alternative energy sources is limited. In relation to intellectual property, WTO provisions may help to facilitate investment and development of new technologies that are critical to the expansion of renewable energy alternatives.

From a practical perspective, there is also the question of which WTO Member country will actually challenge subsidies to renewable energy. As already noted, a significant number of countries are implementing massive stimulus packages to support development of renewable energy sources, and thus, few WTO Member countries have 'clean hands' to challenge another country's program without the risk of immediate challenge to its own programs. Moreover, given the shared climate change interests of most countries around the world, a dispute settlement panel may be reluctant to find that WTO provisions should restrict efforts to develop renewable energy, absent clear evidence of protectionism.

More specifically, the WTO Agreement on Subsidies and Countervailing Measures (the 'SCM Agreement') contains the relevant disciplines on subsidies. Importantly, the SCM Agreement governs subsidies in relation to trade in goods. Thus, the agreement clearly applies to subsidies to energy-related products but may not apply to the 'energy' developed from renewable sources, which may or may not be treated as a 'good' and may never be traded across borders. In any event, most incentives for the development of renewable energy alternatives will likely constitute specific subsidies but are unlikely to be 'prohibited' within the terms of the SCM Agreement. As a result, a country will need to demonstrate that the subsidy has 'adverse effects' in order to be actionable under WTO rules.

A few concrete examples will highlight the key issues in relation to the intersection between WTO obligations and subsidies for renewable energy (and climate change). In the case of biofuels, one of the key issues is what are 'like' goods for purposes of assessing WTO-inconsistent discrimination and/or analyzing whether subsidies are causing adverse effects. Are mineral fuels (i.e., fossil fuels) 'like' biofuels? Are biofuels made from one renewable source 'like' biofuels from a different renewable source? In a recent anti-subsidy investigation, the European Commission answered this second question in the affirmative, finding that biodiesel from rapeseed oil is 'like' biodiesel from soybean oil.

The significant number, scope, and variety of incentives for biofuels development and production means that certain measures will likely raise potential WTO violations, either because the measures are discriminatory under GATT Article III by favouring domestic producers or because they constitute actionable subsidies. In the face of such violations, the question becomes, what is the role of the GATT environmental exceptions and whether/how such exceptions would apply? For example, do these exceptions apply to the SCM Agreement (see discussion below)? Moreover, if applicable, how will the ongoing debate about 'lifecycle' greenhouse gas ('GHG') and environmental effects be used to support or oppose relevant environmental justifications? For example, will a WTO panel be required to assess the

indirect land-use impacts of producing certain biofuels and consider these impacts when analyzing any environmental justification under the GATT exceptions?

Another example is the US excise tax credit of US$0.50 per gallon for alternative fuel mixtures, defined to include fuel containing at least 0.1% of 'taxable fuel,' such as diesel fuel. There is no distinction between imported versus domestic alternative fuel mixtures. Certain US paper producers claimed the tax credit by mixing diesel fuel with 'black liquor,' which is a by-product of the paper production process. In December 2007, the US tax authority determined that this black liquor mixture qualified as a 'liquid hydrocarbon derived from biomass' and was eligible for the credit.

Several WTO Member countries claimed that the US tax credit applied to black liquor amounted to massive subsidies to the US paper industry. These Members highlighted the fact that eligibility for the credit can be triggered by using more, rather than less, fossil fuels, which leads to potential distortions in trade without the intended environmental benefits envisioned by the tax credit. Apart from whether the credit amounts to a specific subsidy causing adverse effects under the SCM Agreement, the black liquor example sheds light on those circumstances in which WTO Member countries may be more likely to challenge renewable energy measures (i.e., instances where distortions in trade outweigh the climate change or other environmental benefits).

One final example relates to whether free allowances under a domestic 'cap-and-trade' regime to limit GHG emissions would amount to a WTO-inconsistent subsidy. Under the SCM Agreement, a subsidy is defined as a 'financial contribution' by a government (or public body) conferring a 'benefit.' Although dependent on the particular measures at issue, general arguments can be made on both sides of these two elements. For example, arguments can be made that free allowances amount to a 'financial contribution' because allowances have monetary value and amount to contributions similar to a grant or to government revenue that is foregone or not collected. One argument to the contrary is that allowances are not funds but are only rights to emit (like any other type of 'permit'). Moreover, rather than any form of contribution, by establishing the level of allowances required for a particular industry, the government is simply setting different obligations for different industries, with certain industries subject to a requirement to submit allowances and others subject to lesser compliance obligations.

Similarly, with respect to whether free allowances confer a benefit, on the one hand, they constitute a benefit because the recipient receives an advantage and is better off than would be the case in the market without free allowances. On the other hand, an argument could be made that free allowances do not confer a benefit because different allowance requirements apply to different industries, and the recipient is no better off than any other comparable industry.

Even if free allowances are considered a subsidy (a 'financial contribution' conferring a 'benefit') and given that such allowances are unlikely to amount to a 'prohibited' subsidy under WTO rules, the subsidy in the form of free allowances must be 'specific' to an industry or group of industries in order to be actionable under WTO rules. Arguments can be made that the free allowances are de jure specific if eligibility is based on a defined, closed list or de facto specific because the entire free allowance framework is intended to assist only certain energy-intensive industries. By

contrast, arguments could be made that a broad range of industries are eligible for free allowances and that such eligibility is determined by objective criteria-factors that go against any finding of specificity under the SCM Agreement.

Assuming free allowances constitute a specific subsidy, a WTO Member country challenging such a subsidy must demonstrate that the free allowances are causing 'adverse effects.' On the one hand, an argument could be made that the free allowances cause serious prejudice by displacing or impeding imports of other WTO Members into the US market or by causing adverse price effects in the US market. Given the reference to 'absent the subsidy' in the text of the SCM Agreement, the analysis of serious prejudice will likely be based on a 'counterfactual' comparison of market shares and prices with the subsidies versus the hypothetical situation without the subsidies. On the other hand, arguments could be made that the free allowances have not caused adverse effects because changes in relative market shares are unlikely following adoption of climate change regulation and because it is not possible to demonstrate that any changes in market share or pricing is caused by the free allowances and not by other factors.

Because free allowances (and other alleged subsidies) are intended to address climate change, the question arises whether subsidies found to be causing adverse effects within the meaning of the SCM Agreement can be justified under the GATT Article XX exceptions relating to protection of the environment. From one perspective, the SCM Agreement is arguably elaborating on GATT Articles VI and XVI, and the application of the exceptions to the SCM Agreement is similar to the Appellate Body's finding that GATT Article XIX must be applied cumulatively with the Safeguards Agreement. From another perspective, however, the SCM Agreement is arguably self-standing (like the Agreement on Technical Barriers to Trade and the Agreement on Sanitary and Phytosanitary Measures) and prevails over GATT. In addition, because the provisions in the SCM Agreement applicable to non-actionable environmental subsidies expired, an argument could be made that the drafters of the SCM Agreement never contemplated that the GATT environmental exceptions would apply. Finally, the SCM Agreement contains specific cross-references to other WTO agreements when applicable, and the absence of any cross-reference to the GATT exceptions supports the view that the drafters did not intend them to apply to the SCM Agreement.

Notably, an interesting issue arises if the GATT environmental exception governing the preservation of exhaustible natural resources were to apply to the SCM Agreement. The effect of 'free allowances' is actually to increase GHG emissions and thus would counter the environmental objective of preserving the earth's atmosphere. Would this undermine any attempt to rely on the GATT exceptions? This issue highlights the importance of placing 'free allowances' in the context of the wider efforts to prevent or minimise 'leakage' of GHG emissions. In other words, the use of free allowances must be viewed as a critical part of climate change regulations necessary to prevent a net global increase of GHG emissions caused by U.S. consumption shifting to lower cost imports that have a higher GHG footprint.

A few key questions in relation to the development of renewable energy remain: When will technology be sufficiently mature and commercial scale be achieved? How should breakthroughs in technology be shared? How will the 'losers' in the race for renewable energy alternatives treat the 'winners'? Will the comparative level of

subsidies determine the 'winners' and 'losers'? Should a multilateral solution be negotiated and what options exist to facilitate the path to such a solution?

Floor Discussion of Part V

Introductory statement by Gary Horlick, Chairperson[219]

Subsidies and other price interventions seem to be endemic among countries with large resources of energy, especially energy in an exportable form. The domestic politics is understandable: how would a politician explain his or her constituents (whether voting or not) that 'they' should not pay less for 'their' energy than 'foreigners'.[220] And once those subsidies or other price interventions put into effect, they are very hard to eliminate. Raising prices for residential heating or individual (or mass transit) motor fuel causes reactions ranging from electoral revolt to full scale riots.

Price interventions have been the subject of numerous trade disputes, though surprisingly few have been the subject of formal GATT and WTO dispute resolution, probably because they are so widespread that Members have been unwilling to challenge each other very often. Certainly, there is no exemption for energy from current WTO rules (notwithstanding the widespread belief to the contrary). The result has been a patchwork of responses:

- Recent WTO accession negotiations with major energy producing countries such as Saudi Arabia and Russia have featured lengthy negotiations about 'dual pricing' (government mandated higher prices for export of certain hydrocarbons than for domestic consumption), with somewhat uncertain outcomes – while earlier GATT and WTO accessions by large major oil producing countries such as Mexico, Venezuela and Nigeria did not result in major controls on those countries' practices.
- Energy issues led to the requirement of 'specificity' in the WTO Agreement on Subsidies and Countervailing Measures, in particular, U.S. controls on natural gas prices (attacked by the EC) and Canada's National Energy Policy (but the direct cause of the specificity doctrine was a claim – rejected by the United States – by asparagus growers in the Central Valley of California that Mexican asparagus was subsidised by access to cheap irrigation water – which illustrates the complexity of these issues for many countries, as the same rules apply well beyond energy.)[221]
- The EU deals with this problem in its trade defence regime by treating the issue as one of dumping of the downstream product, rather than a subsidy to the downstream product, thus sidestepping the requirement of specificity in countervailing duty cases (but, noticeably, the EU seems somewhat wary of doing this to current WTO members, because of the requirement to use actual costs in the WTO Antidumping Agreement).

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220 This is not unknown with other resources, e.g., taxes and other export restraints on industrial inputs, but seems to occur less pervasively and less massively.

221 Problems with the compliance structure of the WTO dispute resolution process, Gary N. Horlick, in *The Political Economy of International Trade Law: Essays in Honor of Robert E. Hudec*, D. Kennedy and J. Southwick, eds. (2007), at p. 636, n.1.

- The current WTO case by the U.S. and E.U. against China concerning the export regime for imports to certain downstream products, notably steel, may be significant in the energy arena, as well. But note that the U.S., at least, is constitutionally precluded from imposing export taxes (but not export bans) which may give it more freedom in this case.

Of course, all of this, and very definitely energy pricing, is a major issue in discussions of climate change, so it is quite possible that an energy-specific regime (or at least, a climate change-specific energy regime) will be constructed with a waiver or other allowed deviation from WTO rules.

Question from a delegate from Japan

A question to Ronald Steenblik: you compared international engagements on agriculture, fishery, energy, and services. This map is very interesting. My question is about the manufacturing and steel sectors. Six or seven years ago there were initiatives to reform steel. I think this has not been successful. How do you see the difficulties in the steel and shipbuilding sectors? How do you attach this agreement to the Subsidies Agreement, or do you see any economic problem behind it? A question to Reinhard Quick: how do you see sectorial initiatives?

Question from a delegate from Mexico

A question on externalities: I don't understand how to have a double count on externality. Limited liability for nuclear accidents could be considered an externality? On specificity, a question of consumption subsidies: Will there be a change in the future where we will reconsider specificity in the agreement?

Question from a student from the Graduate Institute

A question about U.S. subsidies to the energy sector and ethanol. To what extent are agriculture subsidies to ethanol to be considered an energy subsidy?

Ronald Steenblik

On externality: I am looking as an economist. What I said about double counting is in the book called 'Perverse Subsidies' by Norman Mayer, with the value of environmental externalities. He already counted the effects of the environmental externalities. If you are talking about the effect of subsidies on environment, it is double counting. If you have the government assuming liability for damages, we are getting close to specificity. In a hypothetical example of anarchy, there would still be externality; in that case, would you count also what the externalities are?

The shipbuilding reform initiative at the OECD was signed, but one country did not ratify it, therefore it never entered into force. On the steel agreement, there are reasons why it was never concluded. Defining what was allowed and not, with any good idea on how large subsidies work, was problematic. We should start a monitoring program. The negotiation started at a time when there was surplus capacity; then we had growth and people stopped worrying about it so much. The International Energy Agency has avoided counting their countries' subsidies. If there is need for an independent agreement, it is for the countries to decide. We can set up a system of peer review that is quicker than going to WTO negotiation.

As for subsidies to corn ethanol, there is a legal answer and there is an economic

answer. The economic answer is that usually what you see is that they take a broader definition than the legal disciplines.

Stephen Orava
On the ethanol question, the key is defining the measure in a way that does not enable WTO Members to circumvent WTO subsidies disciplines. Whether termed an energy or agriculture subsidy, WTO subsidy rules are sufficiently flexible to ensure that appropriate disciplines will apply.

Reinhard Quick
We would welcome sectoral initiatives with benchmarks. I don't think we would welcome sectoral subsidies. If you think that one can adopt regulation that puts pressure on the industry and you are exempted because you have complied with climate change, this is probably a subsidy. You adapt your regulation to competitiveness. On free allowances, they would increase GHG emissions. We discussed free allowances and trading emissions. Without free allowances, – 21% for the chemical industry means 400 millions Euros a year in cost. If you auction the allowances you have an additional cost of 1.3 billion Euros.

Question from the audience
How much can we address trade distortion on subsidies? According to the HS classification, biodiesel is an industrial product. Would that be captured by the Agriculture or SCM Agreements? How much financing of technology would be WTO compatible?

Question from the audience
There is the view that we should abandon subsidy disciplines. The distinction of what is and what is not a subsidy is a formal, not an economic definition. Therefore, one can breach the rules.

Gary Horlick
WTO has strong disciplines on export subsidies. Empirically, there is a decline in export subsidies. It is premature to say what it does to domestic subsidies (it is only 13 years old). We have one decision on adverse effects on Cotton. No one knows. An international agreement is the optimum solution. You do not want to do this in WTO, with a peace clause or waiver, if no one complains. Large subsidies are challengeable, but no one does that. For instance, on corn ethanol, French farmers have never filed a complaint. Shipbuilding failed because they did not use U.S. fast track authority. Some thought has to go in structuring how one should negotiate this agreement.

Ronald Steenblik
As for the strength of existing WTO disciplines on this subject: if you are still tied to trade effects, and not environment, you will deal with trade concerns. I do not know how it stands on fisheries, but they went beyond pure trade effects (but we do not know where this will go).

On the other question: we rely heavily on antidumping. On externalities again, I have had long discussions and I agree that exempting industries of having to deal

with pollution is a 'benefit'. If we will talk about externality: why not address environmental externality (sound pollution), and positive externalities, such as R&D. With externalities, we completely lose sight. We can deal with externalities but we have to deal with subsidies.

Stephen Orava
I do not envision that a WTO panel would adopt an interpretation of the SCM Agreement or the Agriculture Agreement that would create a loophole in which Members could develop incentives for renewable fuels that completely escape WTO disciplines. The WTO rules together with dispute settlement jurisprudence on issues such as pass-through provide ample flexibility to address the situation of renewable fuels.

Gary Horlick
There is a large bias in the WTO for big countries. There is a big disadvantage if you are a small country. National authorities will not challenge their own subsidies. Instead of seeking an import barrier, you seek to get rid of the subsidy. The downside for a big country is that a WTO panel is neutral. We are drowning in subsidies. The WTO forgot to deal with subsidies on services. There are 12 trillion dollars in subsidies this year, mainly for banks and homebuilders. Forget about 4 billions to renewable energy. Another way is dumping, using actual cost. The mechanisms available for national and international markets are determining the outcomes.

PART VI

Thinking Ahead & Framing an Agenda for Future Action and Research

20. Collective Action Problems In Promoting Global Public Goods: The Example Of Climate Change Prevention, Energy Security And The WTO

Prof. Dr. Ernst-Ulrich Petersmann[222]

1 Introduction

The three regulatory tasks discussed in this volume – i.e. to secure coherent rules and governance institutions for prevention of harmful climate change, for international energy security and for a mutually beneficial world trading system – refer to three 'global public goods' whose collective supply – even though beneficial for all consumers – is confronted with numerous 'collective action problems.' These regulatory problems are further complicated by the fact that negotiations on a Kyoto II Protocol, on international energy security and on the successful conclusion of the Doha Round negotiations in the WTO are interrelated (e.g. regarding regulation of subsidies, transit regimes, liberalisation of environmental goods and services, transfer of environmental technologies and related intellectual property rights, border taxes and other border restrictions). Moreover, collective supply of these three 'international public goods' depends on additional 'global public goods', like international legal security for the investments needed for effective climate change prevention, international energy security and a rules-based world trading system (e.g. investments for efficient production, transportation and distribution of fossil-based and alternative, renewable energies). For example, in order to become effective, carbon reduction commitments and complementary financial transfer commitments must be embedded into a legally binding Kyoto II Protocol as well as into domestic implementing legislation with supervisory institutions. Yet, such rules are unlikely to become democratically acceptable without prior demonstration that the rules meet the often conflicting individual, national and community interests of citizens and periodically elected politicians.

How can such horrendously complex negotiations in different fora with different memberships among countries with conflicting interests (e.g. energy-exporting countries interested in high prices vs energy-importing countries interested in low prices) be successfully concluded without the negotiators 'getting lost in translation', coordination and collective action problems? How should governments prioritise the hundreds of specific regulatory problems in their negotiations at Copenhagen (on the climate change regime), Geneva (on the Doha Round negotiations and accession to the WTO of important energy suppliers like Russia and other former Soviet states), Brussels (e.g. on the proposed reforms of the Energy Charter Treaty and the new EU-Russia Cooperation and Partnership Agreement) as well as in other negotiation fora

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(e.g. in the OECD and its International Energy Agency at Paris)? How and where should disputes over the inevitable conflicts of interests and over sub-optimal, unilateral regulations be settled peacefully? Unfortunately, economic, legal and political sciences have so far failed to develop an interdisciplinary, policy-oriented theory of how the political 'collective action problems' (like the lack of comprehensive information, the rational egoism and limited reasonableness of individuals and politicians) in the collective supply of international public goods can be reduced with due respect for the decentralised structures of a global world composed of 192 sovereign UN member states, hundreds of international organisations and billions of citizens competing for scarce resources. Hence, it was even more surprising that the discussions during the conference at the origin of this book suggested an emerging consensus on the following six 'collective action problems':

2 Diversity of international fora and organisations

Even though the legal and governance system of the WTO is more comprehensive than that of the UN Framework Convention on Climate Change (UNFCCC) or that of the geographically limited Energy Charter Treaty (ECT), there was broad agreement that the multitude of different negotiation fora and organisations involved remains an inevitable fact of international diplomacy in an interdependent, legally and politically fragmented world composed of diverse, national and international legal and political regimes and often conflicting national interests. As governments can resolve the problems of energy regulation and of climate change regulation only with due respect for their existing obligations under WTO law and under bilateral investment treaties (BITs), the success of separate negotiations depends on their coordination and on the mutual coherence of separate legal regimes. For instance, international energy security will depend on trade and transit rules protecting the supply of energy services and access to infrastructures (such as oil and gas pipelines, as illustrated by Ukraine's specific commitments on pipeline transportation in its WTO Protocol of Accession); the effectiveness of such trade and transit rules may depend on complementary investment rules (e.g. setting incentives for creating a Europe-wide pipeline network); and coordination of the complementary environmental, energy, trade and investment regimes will succeed only to the extent that 'rule by law' can be constitutionally limited through 'rule of law' guarantees and institutions protecting rule-compliance and legal as well as judicial remedies against non-compliance and 'free-riding.'

3 Diversity of international legal regimes

In accordance with the economic theory of 'optimal policy intervention', the separate legal regimes (e.g. of the UNFCCC, the ECT, WTO law, BITs) give priority to diverse policy instruments in their pursuit of different policy objectives (such as carbon reduction commitments, 'clean development mechanisms' and financial transfer commitments under the Kyoto Protocol, trade policy instruments regulated in WTO

law, investment promotion and protection rules in BITs, production management in the context of the Organization of Petroleum Exporting Countries based on respect for national sovereignty over natural resources). This legitimate diversity of legal regimes with different memberships aimed at realizing complementary policy objectives will remain an inevitable fact in a globally interdependent world composed of 192 sovereign UN member states. As global regimes and 'global government' integrating the diverse trade, environmental and investment rules (as in the ECT and in EC law) will hardly be possible at the global level, decentralised 'regulatory competition', imperfect 'global governance' and sub-optimal 'countervailing measures' will remain a permanent 'collective action problem'.

As every state has to respect all its international legal obligations simultaneously and there are no 'self-contained' international legal regimes, the legal coordination of the various treaty regimes depends on the relevant general international law rules (e.g. on interpretation of successive treaties with overlapping subjects). Disputes over these often vague, formal principles (like 'lex specialis', 'lex posterior', 'lex superior') and substantive principles for the coordination of treaty regimes are inevitable in a world composed of 192 sovereign UN member states. Respect for the legitimate diversity of international legal regimes suggests that, for example, the negotiators of the Kyoto II Protocol should not attempt to regulate all the 'interface problems' of climate change rules with the trade rules and WTO law. Once international agreement has been reached on a Kyoto II Protocol regulating the 'first best policy instruments' for preventing climate change, WTO members could subsequently clarify the relevant WTO legal disciplines for using 'second best trade policy instruments' (like border carbon taxes, 'green subsidies', export taxes) in support of their climate change commitments under the Kyoto II Protocol and their energy policy commitments under other international treaty regimes (like the ECT). In spite of the limited jurisdiction of international dispute settlement bodies (e.g. in the WTO and investor-state arbitration), judicial procedures and customary rules of international treaty interpretation offer sufficiently flexible principles and rules enabling judges to interpret separate treaty regimes and obligations of their member states in mutually coherent ways, with due regard also to 'principles of justice' and human rights obligations of governments as explicitly recalled in the Preamble of the Vienna Convention on the Law of Treaties.[223] Just as 'regulatory competition' among international organisations may limit abuses of power by potentially beneficial 'checks and balances', so do competition and 'judicial comity' among competing jurisdictions in the interpretation of treaties and settlement of related disputes offer safeguards against potential abuses of legal and institutional 'centralisation'.

4 Sequencing and forum choice problems

Modern theories of justice and of constitutional democracies (like John Rawls' Theory of Justice) explain why the legitimacy and effectiveness of rule-making, rule-

223 Cf. E.U.Petersmann, Administration of Justice in the WTO: Did the WTO Appellate Body Commit 'Grave Injustice'? in: *The Law & Practice of International Courts and Tribunals* 8 (2009), 329-374

application and judicial clarification and enforcement of rules depend on compliance with agreed 'constitutional principles of justice'. European integration law and WTO law confirm that intergovernmental rule-making for the collective supply of international public goods (like common market rules for a mutually beneficial international division of labour among the 30 member countries of the European Economic Area) is confronted with 'constitutional problems' (e.g. of democratic legitimacy and consensus-building) similar to those in the collective supply of public goods inside democracies.[224] UN law, the UNFCCC and WTO law reflect worldwide agreement on only a few, vaguely defined 'principles of justice' (such as human rights, 'common but differentiated responsibility' for protecting the world climate, 'sustainable development' based on mutually coherent rules for economic development and protection of the environment). Transforming such principles into specific rights and obligations through rule-making in diverse international organisations with overlapping jurisdictions (such as the UNFCCC, the WTO, regional economic and energy organisations), and creating coherent institutions for rule-application and judicial rule-clarification and enforcement, pose difficult 'collective action problems.' For example:

- Should the environmental, trade and investment rules necessary for preventing international climate change be kept separate and negotiated successively in specialised jurisdictions like the UNFCC, the WTO, the ECT, the OECD and its International Energy Agency and BIT's? Can such separate negotiations succeed without prior agreement on their underlying 'principles of justice' (such as the financial and legal implications of 'common but differentiated responsibility')?
- Could the prospects for a 'global package deal' be enhanced by following the example of the ECT and integrating environmental, trade and investment rules in a future Kyoto II Protocol or, alternatively, in a future WTO Agreement on Trade and Climate Change?
- Which worldwide, regional and national institutions should be mandated with administering, coordinating, keeping under surveillance and enforcing the necessary 'carbon emission trading' systems and 'carbon leakage' safeguards?
- To what extent should domestic implementation of Kyoto II disciplines be left to individual governments and states in spite of the far too frequent, past experiences that intergovernmental rules risk remaining ineffective unless citizens and non-governmental organisations (like energy companies) are enlisted in the decentralised enforcement of the rules by recognizing them as legal subjects with effective rights and remedies?

UN law and its 'Westphalian paradigm' have notoriously failed to protect rule of international law through collective rule-making, rule-application and rule-enforcement mechanisms. A future Kyoto II Protocol risks suffering the fate of many other multilateral environmental agreements whose rules are not effectively applied and enforced in all member states. The failure of UN law to provide for a compulsory 'international judiciary' also deprives UN member states from the 'strategic option' to deliberately delegate clarification of 'incomplete agreements' (e.g. on a Kyoto II

224 Cf. E.U.Petersmann, Human Rights, Multilevel Constitutionalism and International Economic Law in the 21st Century (2010).

Protocol) to independent and impartial dispute settlement bodies clarifying disputed interpretations case-by-case through principle-oriented, reasoned judgments after listening to all parties concerned. As long as the power-oriented 'Westphalian structures' of UN law do not offer the 'constitutional framework' necessary for effective regulation and protection of 'global public goods', there seem to be good reasons for focusing negotiations on the Kyoto II Protocol on environmental and financial 'first-best policy instruments' (like carbon-reduction commitments, clean development mechanisms, etc) – leaving the regulation of 'second-best trade policy instruments' to the WTO and regional trade organisations (like the EC and NAFTA). If WTO members should prove unable to overcome their conflicting interests in interpreting, clarifying and progressively developing relevant WTO rights and obligations, they could leave part of this task – once again – to the explicit mandate of WTO and regional dispute settlement bodies to clarify trade rules and settle disputes over the interpretation of rights and obligations in conformity with the customary methods of international treaty interpretation codified in the Vienna Convention on the Law of Treaties.

5 Best alternatives to a negotiated agreement (BATNA)

Political and legal dispute settlement strategies and alternative dispute prevention and dispute settlement procedures are interrelated in complex ways.[225] The 'BATNA strategy' suggested by the Harvard School of dispute settlement explains why the EU, the US and other leading participants in the Kyoto II Protocol negotiations emphasise their determination to resort to unilateral policy alternatives (such as national and regional carbon emission trading systems and unilateral border adjustment taxes) if UN member states fail to agree on global disciplines for carbon emission reductions and 'carbon leakages' in a new Kyoto II Protocol, or if important countries succumb to the temptation of 'free-riding strategies' undermining the Kyoto II disciplines.[226] The negotiations by important energy-exporting countries (like Russia and other former member countries of the USSR) on their accession to the WTO offer similar 'BATNA options' for insisting on 'WTO-Plus commitments' (following the example of China's Protocol on accession to the WTO) if negotiations on 'first-best policy

225 Cf. E.U.Petersmann, *The GATT-WTO Dispute Settlement System. International Law, International Organization and Dispute Settlement* (1997), at 66 ff; *idem,* Prevention and Settlement of Transatlantic Economic Disputes, in: E.U.Petersmann/M.A.Pollack (eds), *Transatlantic Economic Disputes*. The EU, the US and the WTO (2003), 3-64.

226 As the carbon emission limits agreed under the Kyoto I Protocol end in 2012, the EC Directive 2009/29/EC of 23 April 2009 envisages a 'carbon equalisation system' and the extension of the European Emission Trading System to imports (by requiring importers to acquire emission allowances corresponding to the carbon embedded in the imported goods). On the applicable WTO rules and European and North American climate change regulations see: G.C.Hufbauer/S.Charnovitz/J.Kim, *Global Warming and the World Trading System* (2009). On the legal controversies over 'border measures' (especially border taxes on production inputs that are not physically incorporated into the products concerned) see also: *Trade and Climate Change. A Report by UNEP and the WTO* (2009), at 98 ff; E.U.Petersmann, International Trade Law and International Environmental Law: Environmental Taxes and Border Tax Adjustment in WTO Law and EC Law, in: R.L. Revesz (ed), *Environmental Regulation, the Economy and Sustainable Development* (1999).

instruments' should fail (such as guarantees of energy security and energy transit regimes in the ECT and EU-Russia partnership and cooperation agreements). Similarly, many conference participants emphasised that investor-state arbitration proceedings based on the ECT, on regional free trade agreements (like Chapter 11 of NAFTA) and on BITs may offer foreign investors alternative, more effective legal and judicial remedies against discriminatory restrictions of energy investments and energy trade than diplomatic WTO dispute settlement procedures.

The environmental objectives of a future Kyoto II Protocol can only be achieved with due respect for the WTO legal and dispute settlement system. The negotiators of the Kyoto II Protocol should, therefore, explicitly acknowledge the existing obligations under WTO rules, notwithstanding the frequent disagreement on how the incomplete and often unclear WTO disciplines should be applied to environmental border tax adjustments, emission trading systems and other environmental policy instruments (like export taxes). The Copenhagen negotiations on environmental 'first-best policy instruments' could be facilitated by an explicit mandate of WTO members to the WTO Committee and Trade and Environment to review the applicability, and any necessary adjustments, of WTO disciplines impacting on climate change policies. Such demarcation of jurisdictions could de-politicise Kyoto II Protocol negotiations and give additional impetus to the WTO Development Round negotiations on liberalisation and regulation of environmental goods and services and 'green subsidies'. If WTO members cannot agree on worldwide commitments (e.g. as parts of GATT and GATS commitments and TRIPS obligations), 'plurilateral agreements' with limited membership (cf. Annex 4 of the WTO Agreement) and regional commitments (pursuant to Articles XXIV GATT, V GATS) offer policy alternatives.

6 'Environmental justice' and 'governance-design problems'

From a historical perspective and in terms of per capita-pollution, the contribution of individual citizens in less-developed countries (like China and India) to green house gas emissions (e.g. resulting from consumption of electricity derived from fossil fuels) is much smaller than the average contribution of citizens in industrialised countries. What are the implications of 'environmental justice principles' (like the 'polluter pays principle', the UNFCCC principle of 'common but differentiated responsibility') and of other 'principles of justice' (like equal opportunities for satisfying basic human needs) for an equitable burden sharing of the inevitable costs of climate change prevention?[227] Without agreement on the legal and financial implications of 'climate justice principles', less-developed countries may not consent to future Kyoto II disciplines, and their citizens may not comply with climate change disciplines whose allocation of 'adjustment costs' and redistribution of 'competitive benefits' among states and citizens are not perceived as legitimate.

227 For an overview of diverse, individualist and collectivist conceptions of the 'polluter pays principle' (e.g. focusing on individuals or states as 'polluters' and as bearers of rights to emit greenhouse gases) and other principles of 'environmental justice', and on the importance of protecting important individual and social interests by means of rights and judicial remedies, see, e.g.: S.Caney, Cosmopolitan Justice, Responsibility and Global Climate Change, in: *Leiden Journal of International Law* 18 (2005), 747-775.

In view of the importance of future climate change agreements for the welfare of billions of people in many UN member states and the traditional lack of effective enforcement mechanisms and judicial remedies at the international level of multilateral environmental agreements, voluntary rule-compliance by governments and private citizens (e.g. climate-polluting business and consumers) must be promoted by multilevel rights and obligations with decentralised monitoring mechanisms and legal as well as judicial remedies at national and local levels. Intergovernmental approaches – as they remain characteristic of UN conventions (including UN human rights conventions) treating citizens as mere objects of intergovernmental regulation rather than as legal subjects of international law, 'democratic owners' of intergovernmental organisations and self-interested guardians of compliance with international rules – have all too often failed to change individual conduct at domestic and local levels. Many UN environmental agreements are not effectively implemented due to their failure to involve citizens (e.g. by means of financial incentives, enforceable rights) in the decentralised enforcement of the environmental rules concerned. Without reasonable principles of 'global environmental justice' and legal empowerment of citizens and business by enforceable rights and obligations, a UN climate change convention is unlikely to effectively limit climate change pollution by billions of citizens and companies in 192 UN member states.

Even if UN member states should reach international agreement on legitimate principles for 'global climate change governance', the history of past UN environmental agreements suggests that the appropriate design of climate change rules and institutions will be confronted with numerous 'governance problems':

- Do the UN Environmental Program (UNEP) and the UNFCCC Secretariat offer a sufficient institutional framework for negotiating and progressively developing UNFCCC Protocols in the absence of a World Environmental Organization collecting the necessary information (e.g. on the controversial technological dimensions of regulatory problems such as 'carbon sequestration') and offering advice, incentives and leadership for protection of the global environment?
- Can global public goods be collectively supplied as long as the focus of states on their 'national interests' (e.g. in the production and exportation of energy resources, bilaterally agreed pipelines and alternative energy transport networks) remains unconstrained by global institutions mandated to protect common interests in 'global public goods'?
- Will private investors supply the financial resources for the private investments and technology transfers necessary for the transition from fossil-fuels to renewable energies in the absence of investment agreements offering additional legal and judicial investment incentives?
- Given the past experience that the 'European model' of negotiating 'integrated trade, investment, environmental and energy rules' with effective legal and judicial remedies cannot be repeated at worldwide levels: Should the ECT be incorporated into the WTO legal system as an optional 'plurilateral trade agreement'? How to design civil society support and governmental support for more 'participatory forms' of citizen-driven, transnational 'multilevel governance'?

7 How to avoid 'secondary conflicts' undermining international law And institutions?

Under the Kyoto I Protocol, the agreed carbon emission reduction commitments of developed countries appear to have reduced carbon emissions only marginally, for instance much less than the carbon emission reductions caused by the worldwide financial crisis and economic recession since 2008. Past experiences with global negotiations on UN environmental agreements suggest that the transformation of the general UNFCCC principles, and of the general rules of the Kyoto I Protocol, into more precise and more effective carbon reductions by all major UN member states will require many years of progressive consensus-building, rule-making, rule-administration and rule-enforcement. During this transition period of continuing climate-pollution in many countries, recourse to sub-optimal safeguard measures (like national and EC border adjustment taxes aimed at preventing 'carbon leakage') and to related dispute settlement proceedings (e.g. in the EC and WTO jurisdictions) appear to be inevitable. Many conference participants warned of the dangers that such 'secondary conflicts' risk overburdening international organisations like the WTO whose compulsory jurisdiction for trade-related disputes attracts ever more complaints concerning 'competitive distortions' caused by 'second-best policies' (like trade-distorting national aircraft subsidies) adopted in the absence of international agreement on first-best disciplines (like more precise disciplines on aircraft subsidisation). Such 'secondary conflicts' risk undermining also the 'functionally limited legitimacy' of international organisations like the WTO, for instance if WTO dispute settlement rulings limiting recourse to trade policy sanctions are being portrayed and perceived by civil society as obstacles to 'saving the world' from global warming.

8 Conclusions

The characteristics of 'public goods' (like their non-excludable and non-exhaustible use benefiting all citizens), the structural problems of the collective supply of 'global public goods' in a decentralised world composed of 192 sovereign UN member states with scarce resources and often conflicting 'national interests', and the ubiquitous conflicts of interests among individuals (e.g. due to their rational egoism, limited social reasonableness and competition for scarce resources) entail 'collective action problems' impeding the supply of international public goods.[228] Unfortunately, academics have so far failed to elaborate policy-oriented theories for identifying and overcoming these collective action problems in the global governance efforts at protecting 'overlapping global public goods'. The discussions at the WTO conference on 'Global Challenges at the Intersection of Trade, Energy and the Environment' reflected a broad consensus on how to reduce some of these problems, for example by

228 Cf. I.Kaul/I.Grunberg/M.A.Stern (eds), *Global Public Goods. International Cooperation in the 21st Century* (1999), whose book focuses on the 'jurisdictional gap', the 'participation gap', 'incentive gap' and 'prisoner dilemmas' in the collective supply of international public goods.

(1) prioritizing Kyoto II Protocol negotiations on environmental 'first-best policy instruments' (such as carbon-reduction commitments, a global emission trading system, financial and technological promotion of 'clean development mechanisms', etc), without further complicating the Copenhagen negotiations by discussion of 'second-best trade policy instruments', and without delaying the conclusion of the overdue Doha Development Round negotiations in the WTO;

(2) leaving clarification and eventual adjustments of applicable WTO disciplines (e.g. for border tax adjustments, export taxes, transit trade and tariff regimes, phasing-out of fossil-fuel subsidies, 'green subsidies' for the transition to carbon-free energy production based on renewable resources, carbon capture and storage technologies), as well as negotiation of complementary WTO commitments (e.g. for international energy trade, environmental goods and services), to later WTO negotiations (e.g. to be prepared by the WTO Committee on Trade and Environment);

(3) promoting inter-agency cooperation (e.g. for financial assistance by the World Bank Group, technological assistance by the World Intellectual Property Organization, negotiation of regional energy security systems in the context of the ECT and EU partnership agreements with Russia and other energy exporting countries);

(4) acknowledging that specific 'compliance/supervision mechanisms' in the Kyoto II Protocol, like investor-state arbitration procedures under the ECT and BITs, may be more appropriate for the settlement of the inevitable disputes over compliance with carbon reduction commitments, 'competitive distortions' and discriminatory restrictions than recourse to WTO dispute settlement procedures;

(5) creating synergies between national and international environmental, energy and trade regimes, for example in view of the fact that the energy sector accounts for over 50% of all greenhouse gas emissions; yet, 'competitive distortions' (e.g. resulting from the costs of carbon constraints on production) are likely to make recourse to unilateral 'safeguard measures' politically inevitable (e.g. border taxes on carbon-intensive imports such as steel, aluminum and cement from countries without carbon reduction commitments);

(6) broadening the domestic 'constituencies' of international rules and supplementing their intergovernmental structures by transnational, multilevel governance structures which should empower also individual actors and non-governmental organisations (e.g. research institutes, private standard-setting organisations) to assist in decentralised standard-setting, monitoring and enforcement of new rules on climate protection, international energy security and mutually beneficial trade. In contrast to the authoritarian, and often ineffective 'Westphalian paradigm' of 'international law among states', citizens must be recognised not only as the ultimate beneficiaries, but also as the democratically legitimate 'owners' of international economic regulation, self-interested guardians of 'rule of law' and most important actors (e.g. as producers, investors, traders, consumers and polluters) in international economic, environmental and energy relations.

Summary of Discussion with André Schneider, Ernst-Ulrich Petersmann, Richard Baldwin and Joost Pauwelyn

Mr. Schneider opened the session with a reflection on the main ideas exposed during the conference: the interrelation that should exist among the three agendas: trade-energy-environment in order for the dialogue to go forward instead of continuing with our current way of looking at these problems in a way which he described as 'vertical'. The main driving force being that a lack of synergy will surely lead to unexpected and unwanted consequences.

The simplistic approach is that of associating trade liberalization with an immediate increase of the use of energy, thus a consequent increase in carbon emissions. Yet, it is not that simple. Today we have tools for global governance. In the area of trade, such governance is very strong; there is an attempt to make it stronger in the area of environmental protection, as shown by the Kyoto Protocol and the drafts in study for Copenhagen, and in the energy sector as well. This interrelation and separate levels of governance raise a lot of questions when disputes arise in this field.

We have two choices: to just wait for a new climate change convention and deal with its consequences later; or to start working on these synergies before so as to be better prepared to deal with such consequences. We must concentrate on the global picture so as to find such synergies, since localized solutions will only result in the increase of trade barriers and subsidization.

The areas of energy and climate change include a great deal of business actors. A lot is happening in the business arena, and we seem to fail in synchronizing with this in the political arena. The aim is to put forward an agenda to avoid the so called 'train wreck' scenario.

Professor Ernst-Ulrich Petersman

Professor Petersman posed what he referred to as an urgent policy question: how to design a strategy for coordinating negotiations in four different fora: trade, energy, environment and investment? The answer has to consider that in the four areas there exist regulatory problems that are very complex, leaving negotiators 'lost in translation'.

He referred to prevention of climate change, energy security, investment security and trade as global collective goods that are beneficial to everybody. There is broad agreement on the way in which governments should address these collective problems and negotiate them.

Professor Petersman drew our attention to six areas of agreement in these discussions by focusing first on the most visible problem: the fact that there are four

areas, treated in four different fora, among which the only one with a coherent system for future negotiations is the WTO. Since these four problems are interrelated, success depends strongly on cooperation. In that sense, it is necessary to recognize that complete and total agreement between regulatory agencies is impossible; hence the reality of different fora is inevitable.

The second area of agreement arises from the existence of several international agreements in all four areas, which results in integrated regulation, but separation of policies, thus rendering public international law essential to coordinate the four regimes. There exist no self-complained regimes outside public international law.

The third area of agreement is the priority given to 'first best policy instruments'. These would be, for example, instruments dealing directly with climate change, whereas the WTO legal framework would be a 'second best policy instrument'. This makes us look forward to a new Framework Convention on Climate Change. Even though there is consensus that the measures have to comply with WTO law, there was also general agreement that WTO law as it is, does not resolve these problems and that the Climate Change Negotiations are unlikely to solve them either.

The fourth area of agreement stems from the fact that collective negotiations bring problems of 'free riding'. Reference could be made to the 'Best Alternative to Negotiated Agreement', or BATNA, a theory proposed by the Harvard School of Law. This means that there must be a decent alternative in case the climate change negotiations do not lead to a solution. A viable example is the European Collective System. In the context of bilateral, plurilateral agreements there might be a BATNA.

WTO disputes will be more frequent, but also sanctions may not be effective. Just taking the example of oil exporters, they won't be challenged under the WTO Dispute Settlement System. But Bilateral Investment Treaties offer more solutions. Again, we are talking about 'second best policy' instrument in this case.

The fifth area of agreement is precisely the way to design future agreements. The approaches include one where negotiators integrate the four areas into their discussion, but this way is much more difficult to negotiate. Thus it remains vital that the climate change discussion does not focus on the trade aspects. It is better for the WTO membership to give a mandate to the Committee on Trade and Environment to research alternative options to deal with these interface questions. The reality is that WTO rules negotiations will be easier once Copenhagen is signed.

Finally, Professor Petersman emphasized that it is important not to overburden the WTO Dispute Settlement Mechanism. Even though it is the most effective dispute system, it would be wiser to avoid 'inviting the train wreck' to come to the trade arena.

Professor Richard Baldwin

Professor Baldwin identified key issues and suggested some solutions to them. As regards the 'train wreck scenario', he referred to it as a scenario called 'Al Gore meets climate justice', with three referential points:

1. There is fundamental disagreement of burden sharing ('stock' vs. 'flow' of carbon).
2. The existence of new, much larger political constituencies and vastly greater impact on GDP.

3. WTO Rules are inappropriate to deal with these issues. Two possibilities arise, the first being 'Let the judges decide'. The second is mainly that things could get much worse – globalisation having broken down in many ways. The support of the WTO system is that countries think it is a good idea, on balance. If you widen it to bigger constituencies, people who don't care about trade but the environment, the support changes dramatically.

Professor Baldwin stressed the reality that one system of rules is not fit to solve problems in other areas. Trade rules are not aimed at saving the environment, hence the need to have special rules for special objectives. In said sense, as regards climate change the solution has to come -obviously- from climate negotiations, which might take ten years to solve. In the meantime, the WTO has to 'cope' with this so as to avoid or delay the 'train wreck scenario'. The main course of action should be to get the big polluters to negotiate while at the same time, at the national level, integrate the responsibility for trade and environment in this discussion. The G20 could produce an agreement to have bilateral negotiations over border measures, instead of challenging them in the WTO.

Professor Baldwin drew our attention to three main questions:

- Why is energy different?
- Why isn't it already in GATT/WTO? (sufficiently)
- Why should we act now?

To the first question, he answered by defining energy as a 'standard' good, but recognizing the following distinctive characteristics:

- 'Transportation' infrastructure: high sunk cost and low marginal cost, quasi rents (ex post hold up problem)
- Production realities: low production costs and high sales price derive in 'rents', which in turn renders the problem of division or allocation of such rents.
- Lack of domestic import competition: import barriers are not the main trade issue
- Energy is a 'strategic good', i.e., it is a complementary input in almost all sectors of the economy, thus the governments must be involved.

To the second question, he replied by stressing that the GATT/WTO system was mainly designed to discipline and/or remove its own import barriers by each Member, thus it is not very appealing to energy exporters. It is also important to recall that whilst the GATT/WTO system is a multilateral one, energy issues are negotiated mostly in a bilateral, government-to-government format.

Finally, in answering the third question - 'Why should we act now?' - he drew attention to the fact that, in many nations, privatization in the energy sector has given it a more 'standard' status. Also, the geographical mismatch between supply and demand is widening, taking as an example the rise of emerging markets.

Professor Baldwin then posed the question of which possibilities exist for a potential 'General Agreement on Trade and Energy', based on the idea that it is a special sector in need of specific rules.

Professor Joost Pauwelyn

Professor Pauwelyn started his conclusions by thanking all those involved in the organization and development of the Conference. He expressed his hope to continue this multi-stakeholder exercise in the future.

Referring back to Director General Lamy's intervention, Professor Pauwelyn stressed the importance of the sequencing process that must be carried out when dealing with a new issue: gathering of facts, analysis of them, and finally, where necessary, negotiation of rules based on such assessment. When it comes to the present issue, we are still in the first stage, thus the importance of fact gathering and thinking ahead, maybe 10 to 20 years and addressing the problem of energy in the long run.

He reflected on Professor Baldwin's exposition on whether energy is truly a 'unique' good. He pointed out that this uniqueness does not arise as much when the discussion centers on alternative energies, where countries have recourse to more traditional terms of trade and trade barriers. Hence, in that case, the WTO 'toolbox' can act without it being adjusted too much. Another example would be the existing WTO rules on transit.

Professor Pauwelyn remarked that, when comparing the three angles in the trade-energy-environment triangle, the trade side comes out quite positively, given the existence of a wide range of rules and institutions to govern trade. From that perspective, trade should probably be the least of our problems and we should focus on the two other angles of this triangle: energy and environment. Yet, is there a risk that rules or action in these two other areas might harm what we have achieved at the WTO? That some non-trade issue or trade dispute filed at the WTO would lead to the demise of the WTO is a story or threat we heard repeatedly before (think of the GMOs or aircraft disputes). So far the WTO system has proven to be very resilient, although even that cannot be taken for granted.

Finally, he closed his intervention by pointing out three main issues where he found there had developed a general consensus:

The first is the recognition that the WTO system permits environmental action even at times on a unilateral basis, as happened in the Shrimp-turtle case.

The second point of consensus is that of the correlation between the Doha Development Round and the negotiations on Climate Change and the idea that whatever deal is concluded on climate, the WTO ought to adjust to it although in the meantime the WTO also has an important positive role to play in preventing and blocking protectionist moves. The third consensus point, in his view, is in the importance given to finding an integrated framework to deal with the three subjects. Such framework should be horizontal, problem-focused rather than vertical, silo-like, institution-by-institution. The solution to the problems of, for example, lifecycle of energy, investment, production and transport are to be found by moving away from our 'legal boxes' of WTO v. ECT, GATT v. GATS or product v. producer measures and by looking rather at the underlying problem in a three-prong fashion.

Question from a member of the audience

In the energy sector, the interests are so different that perhaps it is better that they fall outside the scope of the WTO system and that countries deal with them at the national level, independently. Energy is really particular: for example, one cannot export energy on

an MFN basis, since that would entail an obligation to build pipelines to everybody, which is economically impossible. Even though the Energy Charter might still leave some issues unresolved, like transit, it is capable to address that issue and also new issues like environmental concerns.

Question from a member of the audience

Where is the development side of this discussion, given the reality that the levels of poverty keep rising, and that that entails also poverty in energy? People in this situation are exposed to climate change, and in need of energy. They will migrate to find it, thus creating also migration problems. There are things we can do within the WTO, and I disagree with Professor Baldwin's view of 'delaying' the treatment of the issue. 1.5 billion people are in desperate need of energy and development, and for their survival they would take actions that would further aggravate the current environmental problems.

Professor Richard Baldwin

My mention of delay does not refer to climate action, but to the specific problem of interaction between the WTO and climate. In this respect, the World Development Report, to come out this year, will reflect very interesting shifts in CO2 emissions. He agreed with the development aspect, but, in his view there is nothing the WTO can do to address that.

John Gault

Mr. John Gault also commented on this point, recognizing that, unfortunately, there is no mechanism for a fair redistribution of tax revenues from developed countries that pollute the 1.5 billion people in the world without access to electricity. He referred back to the purpose of creating the WTO, based on the idea of a societal good. The climate change negotiations also recognize implicitly that there is a 'global commons' in such area: a positive sum game. It is his view that in the energy sector does not truly exist yet. When it comes to global governance on energy, it is like a Neanderthal just stepping into civilization. We still need basic data on oil production, consumption, and the possibility to audit and compare such data. Also, as regards the settlement of disputes, arbitration in energy does not create a body of law. His conclusion after this debate is that the energy industry has a lot to aspire to, to learn intuitively from the way environmental and trade issues are resolved. This can only lead to improving the energy industry including designing a more rational way to subsidize and impose taxes.

Liz Bossley

Developing countries will grow, and if the developed world wants them to grow 'greener' than we did, it has to find encouraging measures towards that. So if Copenhagen gets to solve that part of the equation to be more balanced, perhaps we can help them to grow 'greener'.

Professor Gabrielle Marceau

Professor Gabrielle Marceau replied to the question of whether the WTO should wait. She expressed her view that the WTO rules are incomplete, but they can be applied. For example, the first dispute under the WTO system was on gasoline, and the WTO

successfully solved it. She also referred to the possibility of holding, within the WTO system, negotiations on green goods and services. As regards, the question whether the WTO could do more on climate change, she replied that the WTO does not work alone, an example being the organization of this conference with other parties to start examining this issue. Without a request from member states, the WTO cannot move. Is the single undertaking preventing a parallel track? Legally no, but political consensus is still needed. One way to go is to negotiate and work with early harvest procedures. For now what we should do is look at the facts and study them.

Professor Richard Baldwin

Professor Baldwin pointed out that the trading system will be crucial to solve some issues stemming from climate problems: for example, rain fall will become less predictable, and will harm most populous countries in the south, thus, production of food will become less predictable, so trade will be vital to ensure food security. Also, energy security will have to include trade. Technology might be the solution.

He also expressed that opening up the Doha Development Agenda negotiating package at this stage might be a very bad idea. If all goes well there could be a resolution by next year, but if any new subjects, such as energy, are added to it now, it most certainly will be stopped.

Andre Schneider

Mr. Andre Schneider recalled that there is one very important challenge that will not be solved at the WTO: how do you balance the stocks and flows problem without raising more unwanted consequences?

Question from a member of the audience

With respect to an energy agreement, whilst the idea is out there, one cannot put aside the fact that energy has two aspects: the impact on the environment, and resource depletion and, on the other hand, access of foreign supplies. In the WTO we are normally talking about market access, implemented differently in different fields. With energy, the problem is that of resource access to energy, completely different from problems of market access. The issue for energy is really investment. He mentioned a number of investment agreements that have all failed. In such line of thought, it was his view that a general agreement of trade in energy will not help if the investment problem is not addressed first. A first step could be to have the energy charter plurateralized in the WTO.

Question from a member of the audience

His comments referred to the discussion held regarding the issue of the 'uniqueness' of energy. His vision is that one must beware of this emphasis, since every sector claims to be unique. He responds that indeed one can store energy, for example. Also that energy as a concept is very broad and includes many different types of energy with different characteristics; it is one thing, for example to trade in coal, another to trade in solar cells. We must be aware of the distinctions but not get into this mindset of 'energy is different', because, when it comes down to that, every sector has its different characteristics.

Question from the audience

She contested this last statement by claiming that energy is indeed different, given the difficulties to transport and storage it, which she thinks is almost impossible, and, in any event, very expensive.

John Gault

Mr. John Gault referred to a comment in the written version of the presentation by Mrs. Gabrielle Marceau, regarding the possibility or not to change the traditional view of sovereignty over natural resources.

He expressed his view that populist politicians in energy exporting countries use sovereignty to sustain trade and investment barriers. But in the energy sector, sovereignty is something that is unquestionable. Thus, in addressing the problems that stem from that, gradualism is key: we must 'lure the beast out of the jungle instead of sending a search party for it'. Draw the industry to the discussion gradually, if you want, 'seduce them'.

Professor Joost Pauwelyn

Professor Pauwelyn urged everyone to think of priorities and also of feasibility. Copenhagen is the priority now, and in matters of feasibility it is unlikely that the WTO will any time soon address the core questions of energy access, investment and competition issues. WTO rules are basically negative obligations, whereas environmental and many energy rules have a positive obligation character. We should capture the sense of urgency that exists in the context of Copenhagen and translate it into urgency in WTO negotiations, in the DDA.

Question from a member of the audience:

There exists a great deal of things that can be done with the current trade rules. At least in parallel, especially when dealing with the sovereignty issue, the first priority should be given to energy. Producers of energy are reluctant to accept WTO rules.

Question from a member of the audience:

If there were more physics professors than economic professors in the room, they would be mad at the way we talk about energy, energy is not liquid, nor solid nor gaseous, it is a state. Border carbon adjustments sooner or later will come, because of the huge energy efficiency gains that could be drawn from them. Regarding the agenda, the first point would be to anticipate border tax adjustments that will emerge sooner or later.

Professor Gabrielle Marceau

It is possible that border tax adjustment measures will come to the WTO, but not only that, also free allowances might be coming to the WTO even faster.

Andre Schneider

Mr. Schneider closed the session by addressing once again the need for green technologies and a climate change approach: even if the WTO will not be the first place to solve the issues, it will have to deal with issues brought to it, thus it must be prepared and assessed. He stressed the need to define borderlines to lure the energy industry. That requires the setting out of achievable targets, a coherent sequencing in addressing the issue and long-term strategic responses.

How can we increase economic well-being and expand trade, while promoting the optimal use of the world's energy resources and protecting and preserving our shared environment? The challenge is daunting and complex. This volume of presentations and discussions from a conference on the intersection of trade, energy and the environment addresses the international or cross-border problems that arise at this intersection, the current international regulatory framework and how this framework could be improved.

Institutionally, as WTO Director-General Pascal Lamy phrased it, the "core question" is "whether we need a new, more comprehensive global governance in energy" and if so, "what the form and content of such governance should be and in what institutional setting" and "what would be the WTO role in this new energy governance?"

With climate change imperatives imposing different costs on carbon emissions in different countries, and trade in energy-intensive products representing a substantial part of global trade flows, trade is destined to become the "interface" between potentially otherwise disconnected national climate change regimes.

One of the conference's conclusions was that the current WTO rule book offers a surprisingly large array of solutions to relatively novel energy and environment problems such as energy transit questions, import restrictions on renewable energy or subsidy disciplines applied to both fossil fuels and alternative energy. Even if these rules were not written with energy in mind, they can be applied in this new light. The big question in this respect is whether such "evolutionary interpretation" can be left in the hands of the WTO dispute settlement system (and, in particular, its seven member Appellate Body), or if it would be better handled through a political renegotiation of the agreements or explicit new rules on energy (as occurred in the EC).

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