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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND  
THE COUNCIL**

**On the implementation of the European Energy Programme for Recovery and the  
European Energy Efficiency Fund**

{SWD(2016) 374 final}

# **REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL**

## **On the implementation of the European Energy Programme for Recovery and the European Energy Efficiency Fund**

### **I. PROGRESS IN PROGRAMME IMPLEMENTATION**

Energy infrastructure and innovation, the driving forces behind the European Energy Programme for Recovery (EEPR), remain as important now as they were in 2009 when the EEPR was set up. All EEPR projects were adopted in 2010.

This report sets out, for each part of the EEPR, the progress made in implementing the projects and the European Energy Efficiency Fund (EEEF). It follows the report adopted in 2015<sup>1</sup>. It covers the implementation of the projects between 31 August 2015 and 30 June 2016 and the payments made during that period.

### **II. OVERALL PROJECT IMPLEMENTATION**

At the end of June 2016, 37 projects out of 59 have been fully completed, and a total amount of €2,122,297,449 (after deduction of the recovery orders for an amount of €144,188,902.94) has been paid to the beneficiaries.

The situation for the gas and electricity infrastructures is now totally clarified and the remaining six projects are on track with one currently being suspended. Most projects are completed and promoters are expected to present the final payment request by the end of this year.

Substantial progress was made by the promoters for the Off-Shore Wind Energy (OWE) integration in the grid whilst some clarifications were obtained regarding the remaining CCS projects.

The Commission has opted for maintaining its financial support to the investors as long as it remains clear that a Final Investment Decision (FID) is possible.

#### **1. GAS AND ELECTRICITY INFRASTRUCTURE**

The EEPR infrastructure sub-programme supports 44 projects in three major areas of activities.

The projects are implemented by the transmission system operators (TSO) in each Member State or by other project promoters. An amount of €2,267,574,462 has been committed, of which €1,366,479,618 has been disbursed to the beneficiaries by 30 June 2016. Payments are subject to the beneficiaries' firm commitment to implement the project through a Final Investment Decision.

Projects cover three areas:

- Gas infrastructure and storage projects:

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<sup>1</sup> REPORT 2015 adopted on 8 October 2015, COM (2015)484 final

Gas infrastructure is the backbone of the energy supply chain from producer to end-user. Transmission pipelines, storage facilities and LNG regasification terminals are among the physical components which ensure that gas is delivered to customers where and whenever needed. Gas infrastructure will need to be further developed and enhanced in the years to come. Constructing the missing links between Member States will help to safeguard secure supplies and to respond to new and growing flexibility requirements.

- Gas reverse flow projects:

During the 2009 gas supply crisis between Russia and Ukraine, most of the Central and Eastern European Member States were cut-off and not all import demand could be fulfilled. This was not because of lack of gas in Europe, but because the existing infrastructure lacked the technical features and capabilities to reverse the gas flows from West to East. The EEPR programme provided support to address this gap and reverse flows are now in place in Central and Eastern Europe.

- Electricity infrastructure projects:

The integration of increasing amounts of electricity from variable renewable energy sources requires significant investment in new infrastructure. Furthermore, a number of Member States are still considered "energy islands", as they are poorly connected to their neighbours and the internal energy market.

## **1.1 PROGRESS TO DATE**

To date, 33 out of the 44 infrastructure projects have been completed with six projects on-going and one suspended.

In the electricity sector, 10 out of 12 projects have been completed. The 2 remaining projects are progressing well and are expected to be completed by the end of 2016 and the end 2017 respectively.

In the gas sector, 23 out of 32 projects have been completed; four are progressing according to schedule, one is currently suspended and four have been terminated. All of the reverse flow and interconnections projects in Central and Eastern Europe have been completed, except the reverse flow project in Romania that was terminated by the Commission in September 2014.

Important progress has been made for electricity and gas infrastructure projects since the last 2015 EEPR implementation report.

For instance the project Halle/Saale – Schweinfurt link the North-Eastern part to the South-Eastern part of Germany, is almost completed. The project will facilitate the transport of electricity from renewable energy sources produced in North Germany and in the North Sea region to the rest of the German grid.. The first electrical system of the double circuit 400 kV overhead line is now operational and the nature compensation works – especially the forest related ones – are ongoing.

In South-Western Europe, the France-Spain interconnection (Baixas – Santa Llogaia) was inaugurated in February 2015. It connects the renewable energy sources to the network and contributes to the integration of the French and Spanish electricity markets, as well as reinforcing the security of electricity supply on a regional, national and European level.

Another completed project is the interconnection between Sicily and mainland Italy (Sorgente – Rizziconi). The EEPR funding supported the construction of substations, 380 kV overhead lines and undergrounding of 150 kV; 380 kV Cables (underground and 38 km submarine) and a tunnel. The project will enhance the security of supply and the expansion of

renewables in Sicily, while improving the reliability of the grid both in Sicily and in mainland Italy (Calabria).

Nordbalt 01 project (subsea interconnection between Lithuania to Sweden) has progressed well and was inaugurated on 14 December 2015. The EEPR supported the construction, the installation, and the commissioning of the sub-sea cable and the converter station in Sweden and Lithuania. With regards to the converters, the trial operation of the converters has been successfully completed with only a few tests still to be performed and approved. The project aims at further removing the Baltic States isolation from the internal energy market and fully integrating them into the Nord Pool electricity market.

The completion of an EU-wide energy infrastructure system is progressing as a result of removing bottlenecks and further integrating "energy islands" such as the three Baltic States, the Iberian Peninsula, Ireland, Sicily and Malta.

To date, it is foreseen that out of 6 on-going projects, 3 should be completed in 2016, with 2 projects expected to be commissioned in 2017 and 1 in 2018.

EEPR supports the development of key European energy infrastructure projects within the context of the current energy policy priorities. The guidelines for trans-European energy infrastructure<sup>2</sup> provide measures for the timely development of projects of common interest (PCIs) in eight identified priority corridors covering gas and electricity infrastructure. In particular, PCIs are entitled to benefit from streamlined procedures to obtain their permits (three and a half years maximum), regulatory incentives to facilitate the implementation of cross-border projects and may be eligible to receive funds from the Connecting Europe Facility (CEF)<sup>3</sup>.

From an overall budget of € 30.44 billion for 2014-2020 covering transport, energy, and telecommunications, energy accounts for €5.35 billion. The Commission estimated that the investment needed in electricity and gas transmission and storage infrastructure to modernise and expand Europe's energy infrastructure is in the order of €200 billion until 2020. Around two-thirds of that is for electricity and smart grids infrastructure.

## **2. OFFSHORE WIND ENERGY (OWE) PROJECTS**

### **2.1 PROGRESS TO DATE**

The EEPR sub-programme consisted of 9 projects giving € 565 million of support split between two main types of activities:

- Large-scale testing, manufacturing and deployment of innovative turbines and offshore foundation structures (6 projects); and
- Development of module-based solutions for the grid integration of large amounts of wind electricity transmission (3 projects).

3 of 9 projects have been completed and 2 terminated prematurely. € 221,985,224 (after deduction of recovery orders of €26,186,766 ) has been paid to the projects.

### **2.2 PROGRESS TO DATE BY SECTOR**

#### **2.2.1 Progress with Innovative Turbines and Offshore Structures**

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<sup>2</sup>Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure , OJ L115 of 25.04.2013, p.39.

<sup>3</sup>Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, OJ L 348 of 20.12.2013, p. 129.

The Nordsee Ost project has run into some delays but the offshore installation is technically completed. Due to a combination of bad weather conditions as well as technical issues with grid connection and wind turbines, the commissioning has been delayed.

For "Aberdeen Offshore Wind Farm", after a positive Court decision about the offshore and onshore consents (which were legally challenged), a positive FID was taken in July 2016.

The Global Tech I project did not find a co-investor. Therefore the Commission confirmed in April 2015 the project termination retroactively as of 1 January 2014.

### **2.2.2 Progress with Wind-Grid Integration**

One project, HVDC Hub, has been terminated. The two remaining projects, Kriegers Flak and Cobra Cable, are progressing well. Further major milestones will be passed this year.

For Kriegers Flak, in September 2015, the amendment of the Grant Agreement for the new technical solution was approved by the European Commission. The beneficiaries 50Hertz and Energinet.dk have made the Final Construction Decision (FCD) and the EU tender procedures are in process. The first main components (Back-to-Back converter and Offshore platform) for the CGS infrastructure have been ordered. Both TSOs Energinet and 50Hertz have agreed on the process for obtaining the required permits together with their respective regulatory authorities. The offshore interconnector KF CGS is planned to be commissioned by end of 2018.

For Cobra Cable, the Final Investment Decision was taken in December 2015, 6 months ahead of schedule. The contracts for converters and DC cables were also awarded earlier than foreseen. All permits for the routing have been obtained. In these conditions, the cable should be operational in the beginning of 2019.

## **3. CARBON CAPTURE AND STORAGE**

The EEPR sub-programme consisted of 6 projects and € 1 billion of support to aim at demonstrating the full carbon capture, transport and storage process.

One project has been finished providing operational pilot plants for capture, transport and storage. Three projects have been terminated prematurely and one project ended without completion. One project is ongoing. €432,227,825 has been paid to these projects.

### **Progress with CCS projects**

In case of the Don Valley project (UK), the Commission saw no reasonable prospect for the project to take a positive Final Investment Decision in a timely manner since the project has not managed so far to secure the additional funding needed for constructing the CCS installation and the critical delay in project implementation. The EEPR Action expired therefore end of 2015 without completion.

In contrast, the Commission is in the final phase of negotiating with the ROAD project an extension of the grant agreement until 31 December 2019, following progress in discussions on additional sources of funding, restructuring of the project and change to a less costly storage site. After completing the necessary updating of previous technical, costing and permitting work, the Final Investment Decision is planned for early 2017 for the installations to be operational in 2020. ROAD would be the first project in Europe demonstrating the application of post-combustion CCS technology to a commercial scale coal power plant. This would also mean the successful demonstration of technology capable of retrofitting existing coal power plants.

### **III EUROPEAN ENERGY EFFICIENCY FUND (EEEF)**

In December 2010, € 146.3 million from the European Energy Programme for Recovery (EEPR) were allocated to a financial facility for sustainable energy projects<sup>4</sup>. € 125 million were used as the EU contribution to the European Energy Efficiency Fund (EEEF), created in July 2011 and which has reached a total volume of €265 million<sup>5</sup>, supported by a Technical Assistance grant facility with a budget of €20 million and €1.3 million for awareness-raising activities.

The EEEF provides tailored financing (both debt and equity instruments) for energy efficiency, renewable energy and clean urban transport projects. Beneficiaries are local or regional public authorities or private entities acting on their behalf.

#### **PROGRESS TO DATE**

In 2015, the EEEF provided financial support to energy efficiency upgrades of 32 buildings at the Universidad Politécnica de Madrid in Spain, via an energy service company (ESCO) acting on behalf of the University. The project involves the replacement of existing oil boilers providing hot water and heating. The retrofit of new gas boilers, thermal valves and thermal PV solutions will be completed in 32 buildings of the university. The project will unlock 27% of Primary Energy Savings and 45% CO<sub>2</sub>e savings annually compared to baseline.

From its creation to 31<sup>st</sup> December 2015, the EEEF has signed contracts with ten projects for €17 million, which have generated €219 million of final investments.

Based on the EEEF's project assessment and reporting framework on CO<sub>2</sub> equivalent and primary energy savings, as of the end of 2015, its investments have achieved savings of close to 223 300 tons of CO<sub>2</sub> and Primary Energy Savings of 102 790 MWh.

#### **Technical Assistance facility**

In 2015, no additional funds were allocated to finance their project development activities.

In total, the Technical Assistance facility funded by the Commission will have supported the structuring of 16 projects for a total amount of €16 million. Several factors can explain the reasons for the unallocated funds. First, the projects identified in the ramp-up phase of the Fund had a higher advancement stage/maturity level and therefore did not need technical assistance. Moreover, the experience of the Technical assistance facility has shown that financing energy efficiency projects faces many challenges, such as a lower level of preparation of requests than initially estimated at the inception of the EEEF (few of the technical assistance requests received were ready for submission), changes in projects following political changes in governments, or necessary adaptations after the first set of feasibility studies.

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4 Regulation (EU) No 1233/2010 of the European Parliament and of the Council of 15 December 2010 amending Regulation (EC) NO 663/2009 establishing a programme to aid economic recovery by granting Community financial assistance to projects in the field of energy.

5 Additional investments to those of the European Commission have been made by: the European Investment Bank EUR 75 million, Cassa Depositi e Prestiti SpA (CDP) EUR 60 million and the Investment Manager Deutsche Bank (DB) EUR 5 million.

## **Main Conclusions & outlook**

By now, the EEEF has progressively established a solid track record of profitable investments and will actively look for additional senior investors to leverage the EU contribution further.

For 2016, the project pipeline contains 9 projects with a total volume of EUR 253 million for which the envisaged EEEF share is EUR 92 million. The EEEF will continue to seek to broaden its geographical coverage, where project and market conditions permit.

## **IV OVERALL CONCLUSIONS**

The EPR has delivered good results. The majority of projects have been completed, particularly regarding gas and electricity infrastructures. The strict control exercised by the European Commission in project implementation and monitoring has helped to increase the efficiency of the instrument.

Despite the fact that Off-Shore Wind projects appeared to be more complex than expected, the promoters and the constructors have managed to find solutions and the technological knowledge has been gained over the five years.

The Commission remains committed to demonstrating CCS despite the challenges in finding the necessary complementary funding which has led to the termination of some EPR projects.

The EEEF has also been successful: a commercial fund was established that will continue to grow, providing financing solutions and generating profits covering administrative expenses, shareholders' dividend and repayment of establishment costs. The EEEF also serves as a role model for innovative financial instruments investing in cost-effective and mature sustainable energy projects (with payback periods of up to 18 years) that can attract private capital while demonstrating the business case behind these investments and creating a credible track record.



EUROPEAN  
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ANNEX 1

**ANNEX**

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<b>Total amount of payments done for EEP projects (Eur) 30 June 2016</b>		
	year	Total
Interconnectors	2010	360,855,255
	2011	224,168,978
	2012	129,803,681
	2013	126,931,210
	2014	105,405,090
	2015	368,316,520
	2016	50,998,883
total		1,366,479,618
Carbon Capture Storage	2010	193,746,615
	2011	192,003,912
	2012	-5,616,119
	2013	26,844,339
	2014	16,439,027
	2015	8,810,052
	2016	0
total		432,227,825
OffShore Wind	2010	146,307,028
	2011	41,300,325
	2012	15,624,304
	2013	11,990,156
	2014	19,996,656
	2015	-26,186,766
	2016	12,953,522
total		221,985,224
Energy efficiency Fund	2010	0
	2011	30,000,000
	2012	934,251
	2013	24,892,027
	2014	42,726,026
	2015	3,052,478
	2016	0
total		101,604,782
Grand total	2010	700,908,898
	2011	487,473,215
	2012	140,746,117
	2013	190,657,732
	2014	184,566,799
	2015	353,992,284
	2016	63,952,405
total		2,122,297,449
Recovery orders have been deducted from payments		