European Commission

CONNECTING EUROPE FACILITY

ENERGY

SUPPORTED ACTIONS 2014 - 2020

Update May 2021

European Climate, Infrastructure and Environment Executive Agency

TABLE OF CONTENTS

ISBN 978-92-9208-107-2 doi:10.2840/869030

FOREWORD

In December 2019, the Von der Leyen Commission presented the European Green Deal as one of the key priorities of its five-year mandate - setting the ambitious target for Europe to become the first climate-neutral continent in the world by 2050, by tackling the urgent climate and environmental challenges.

Given the overarching impact on the EU economy, the European Green Deal is a growth strategy focused on transforming the EU into a climate-neutral, prosperous and fair society. It aims to adapt all policy areas, introducing a coherent and consistent approach towards climate-neutrality.

With the EU also having confirmed a medium-term target of reducing greenhouse gas (GHG) emissions by 55% by 2030, the clean energy transition is crucial, as the energy sector accounts for 75% of the EU's emissions. A modern, secure and smart energy infrastructure will be key to achieving the clean energy transition and supporting the EU's broader climate and energy goals, and in delivering the Green Deal.

The European Green Deal confirms the role of the trans-European energy networks (TEN-E) as a key enabler of the Union's decarbonisation objectives for 2030 and 2050, while contributing to sector and market integration, security of supply and competition.

Since 2013, the Regulation on Guidelines for Trans-European Energy Networks (TEN-E Regulation) has established a new approach to cross-border energy infrastructure planning. It has brought together stakeholders in regional groups to select and help implement projects of common interest (PCIs) that link Member States' energy networks, connect regions, strengthen existing cross-border interconnections, and help integrate renewable energy.

Every two years, an EU list of PCIs underpins the modernisation of an integrated infrastructure for the benefit of households and businesses across EU regions. The fourth list of PCIs, which entered into force in March 2020, includes key infrastructure projects that sustain the increasing share of renewables and address the remaining energy security challenges. Electricity projects represent three quarters of the fourth PCI list. Preparatory work within Regional Groups established under the TEN-E Regulation is underway in view of selecting PCIs for the 5th Union list, expected to be adopted in autumn 2021.

In December 2020, the Commission adopted a legislative proposal to revise the TEN-E Regulation. The revision aims at modernising and upgrading the TEN-E framework, reflecting the Green Deal objectives and making it fit for the infrastructure needs of the clean energy system of the future. The proposed changes reflect the key role energy infrastructure plays in the green transition. New and updated infrastructure categories and a new approach to infrastructure planning will support the role of electrification in the future energy mix, recognising the future role of offshore renewable energy, and help to decarbonise the gas sector through renewable and low-carbon gases, including hydrogen. Above all, it will help develop a more integrated energy system.

The Connecting Europe Facility (CEF), the EU budgetary instrument dedicated to PCIs, has been an important financing source since 2014. So far, CEF has contributed to the development of 107 PCIs. By the end of 2020, 30 PCIs had already been completed, of which eight with the support of CEF. The €4.7 billion in financial support awarded by CEF Energy by early 2021 will leverage total investments of around €9.5 billion.

The new European Climate, Infrastructure and Environment Executive Agency (CINEA) started operations on 1 April 2021, as the successor of the Innovation and Networks Executive Agency (INEA) and parts of the Executive Agency for Small and Medium-sized Enterprises (EASME). CINEA has a key role to play in supporting its stakeholders in delivering the European Green Deal - by contributing to sustainable growth and to the EU's decarbonisation objectives, through high-quality programme management that helps to implement projects in several policy areas, including in the energy sector. In particular, CINEA manages the implementation of CEF in two areas - transport and energy - on behalf of the European Commission. Furthermore, CINEA will manage the Renewable Energy Financing Mechanism, which came into force in September 2020 and supports the uptake of renewable energy projects across the EU with a view to helping Member States achieve the European renewable energy targets.

Under CEF Energy, by early 2021 INEA had signed 149 energy grant agreements for electricity, smart grids, CO_2 and natural gas infrastructure. This brochure outlines all the actions supported by CEF Energy - supporting the PCI implementation. It highlights examples of actions selected from the 2020 CEF Energy call for proposals.

In the electricity sector, a €719.7 million grant was awarded to carry out Phase II of the synchronisation of the Baltic States. This is the largest CEF Energy grant ever awarded, and will be decisive for completing the synchronisation of the Baltic States' electricity grid with the Continental European Network by 2025. This project is a cornerstone of the Energy Union and, once completed, it will provide greater security of supply for consumers in the Baltics and increase grid resilience in Poland and with the Nordic countries.

In relation to the cross-border CO_2 network, a €102.1 million grant was awarded for the construction of a CO_2 transport backbone in the Port of Rotterdam area, able to transport CO_2 from industrial sources to the depleted gas fields in the North Sea. The project includes the construction and commissioning of a 33 km-long onshore pipeline connecting industrial emitters in the port of Rotterdam, and will implement the first phase of the Port of Rotterdam CO_2 Transport Hub and Offshore Storage (Porthos) until 2024.

Under the new EU budget for 2021-2027, the CEF programme will continue to fund key projects in the transport, digital and energy sectors with a significant overall budget of €33.7 billion. The budget for the energy sector will be €5.8 billion, with a new possibility to support cross-border projects in the field of renewable energy.

The 2021-2027 CEF budget, together with the ongoing revision of the TEN-E policy, will strengthen the design of a framework to realise the new energy infrastructures and renewable energy projects we need for delivering the European Green Deal.

Ditte Juul Jørgensen
Director-General,
DG Energy

Dirk Beckers
Director, CINEA

INTRODUCTION

Since its launch in January 2014, CEF has been the flagship EU funding programme to support the development of high performing, sustainable and efficiently interconnected trans-European networks in the sectors of transport, energy and telecommunications.

The CEF programme in the energy sector provides funding to electricity, smart grids, CO_2 and natural gas infrastructure projects, with the aim to better interconnect energy networks towards a single energy market in Europe. It pursues the following main objectives:

- increasing EU competitiveness by promoting further integration of the internal energy market and interoperability of electricity and gas networks across borders
- enhancing the Union's security of energy supply
- integrating energy from renewable sources into the transmission network
- developing smart energy networks and CO_2 transportation networks.

The CEF Energy programme supports the implementation of PCIs in eight priority corridors (four in each of the electricity and gas sectors) and in two thematic areas (smart grids and cross-border CO_2 networks). These priority corridors and thematic areas are defined in the Trans-European Networks for Energy (TEN-E) strategy to address the energy infrastructure needs at regional and European level. To be eligible for a grant under CEF Energy, a proposal has to contribute to a PCI included in the Union-wide list adopted biennially by the Commission.

The total grant budget to support energy infrastructure projects for the 2014-2020 period under the CEF Energy programme was €4.8 billion.

Projects/PCIs:

Within the framework of the CEF Energy programme, a project is understood as a PCI. The list of the PCIs is adopted by the European Commission, based on the needs of the European energy infrastructure network and is reviewed every two years.

Ten call for proposals were launched under CEF Energy between 2014 and 2020. As a result, the European Commission has allocated EU funding to 149 energy cross-border infrastructure Actions for a total amount of €4.7 billion, contributing to the implementation of 107 PCIs.

CINEA manages the CEF Energy calls for proposals and follows up on the technical and financial implementation of the Actions with the beneficiaries, providing technical expertise and high quality programme management.

Actions:

Within the framework of the CEF Energy programme, an Action is an activity or set of activities, usually lasting for one or several years, which contribute to the implementation of one or several PCIs. An Action can consist of studies or works. Completion of an Action does not necessarily coincide with the completion of a PCI.

Most of the CEF energy budget is still under execution, contributing to the advancement of many ongoing PCIs. By April 2021, around 86 of Actions have been already implemented*. Over 30 PCIs have been completed so far and a further 75 are expected to be completed by 2022 with 30 more due for completion by 2025.

In the electricity sector, CEF has contributed to several achievements, e.g. in the BEMIP electricity corridor. The commissioning of the internal electricity line between Ventspils, Tume and Imanta in Latvia (known as the "Kurzeme Ring") was commissioned in 2019. This line has provided grid connection possibilities not only for new electricity consumers but also for new producers of electricity in a region with a significant wind energy development potential. In the NSI East electricity corridor, the completion of the internal lines Maritsa East/ Burgas and Dobrudja/ Burgas in Bulgaria expected by the second quarter of 2021 will contribute to increased security of supply and better integration of renewable power generation in the region.

In the gas sector, CEF has contributed to the construction of the LNG terminal on the Island of Krk (Croatia), as a part of the NSI East gas corridor. Commercial operations at the terminal have started on 1 January 2021. This LNG terminal is of strategic importance for the security and diversification of natural gas supply in the region. It will also ensure the effective integration of other key natural gas infrastructure projects into the regional gas market and overall it will enhance the competitiveness of the region.

This brochure presents the outline and status of the 149 Actions supported by the CEF Energy programme for the 2014-2020 period.

The results presented in this brochure clearly show that the CEF programme delivers on its objectives and provides added value to the completion of the European energy network.

Watch video on PCIs

Watch video on EU energy grid

Watch video on CINEA

*Implemented Actions refer to closed and terminated Actions

CEF ENERGY PORTFOLIO

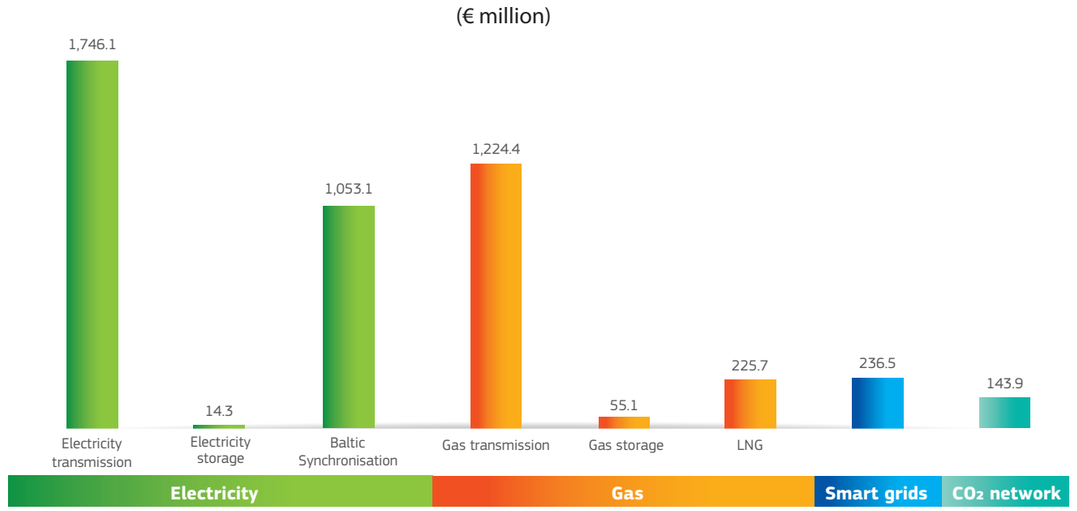
CEF Energy currently contributes €4.7 billion in EU support to the implementation of 107 PCIs, for a total investment of €9.5 billion. The current CEF Energy portfolio consists of 149 Actions, most of which are studies, accounting for 11% of the total CEF Energy funding.

The largest share of funding goes to works (89%) and for both studies and works, the PCIs that receive the largest share of CEF Energy funding are in the electricity sector.

	Electricity	Gas	Smart Grids	CO_2 network	
Studies	55 Actions €294.3 million	50 Actions €171.2 million	1 Action €1.2 million	8 Actions €41.8 million	*114 Actions €508.5 million*
Works	14 Actions €2.5 billion	16 Actions €1.3 billion	4 Actions €235.3 million	1 Actions €102.1 million	*35 Actions €4.2 billion*
EU funding	69 Actions €2.8 billion	66 Actions €1.5 billion	5 Actions €236.5 million	9 Actions €143.9 million	149 Actions **€4.7 billion**

DEVELOPING INFRASTRUCTURE

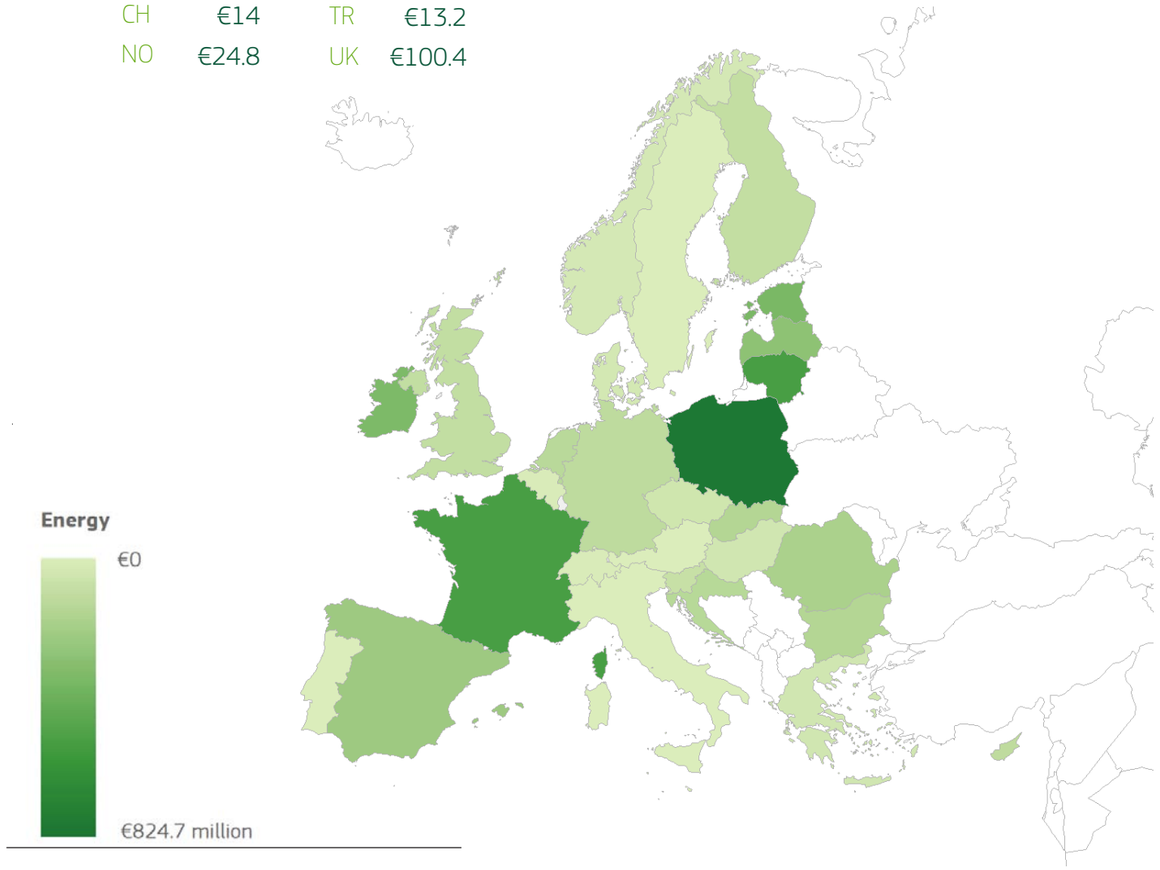
Electricity transmission and gas transmission assets attract the largest share of funding under the CEF Energy programme (63%).



FUNDING PER COUNTRY

EU Member States	FUNDING (€ million)		
AT	€0.01	HU	€48.8
BE	€9.6	IE	€362.3
BG	€149.4	IT	€0.2
CY	€114.6	LT	€544.4
CZ	€50.3	LV	€288.7
DE	€122.5	MT	€4
DK	€38.8	NL	€135.9
EE	€365.1	PL	€824.7
EL	€43.1	PT	€0.1
ES	€233.4	RO	€187.3
FI	€94.3	SE	€2.8
FR	€551.2	SI	€77.3
HR	€143.5	SK	€154.6

Other countries	FUNDING (€ million)		
CH	€14	TR	€13.2
NO	€24.8	UK	€100.4

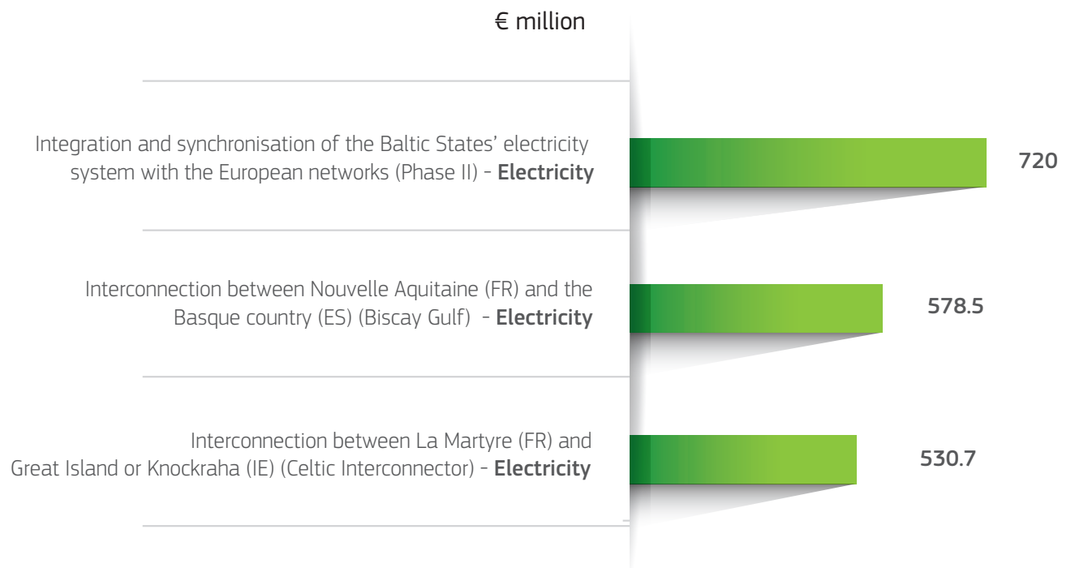


The table and the map show grant funding per beneficiary's country of origin excluding international organisations, European Economic Interest Groupings (EEIG) and Joint Undertakings.

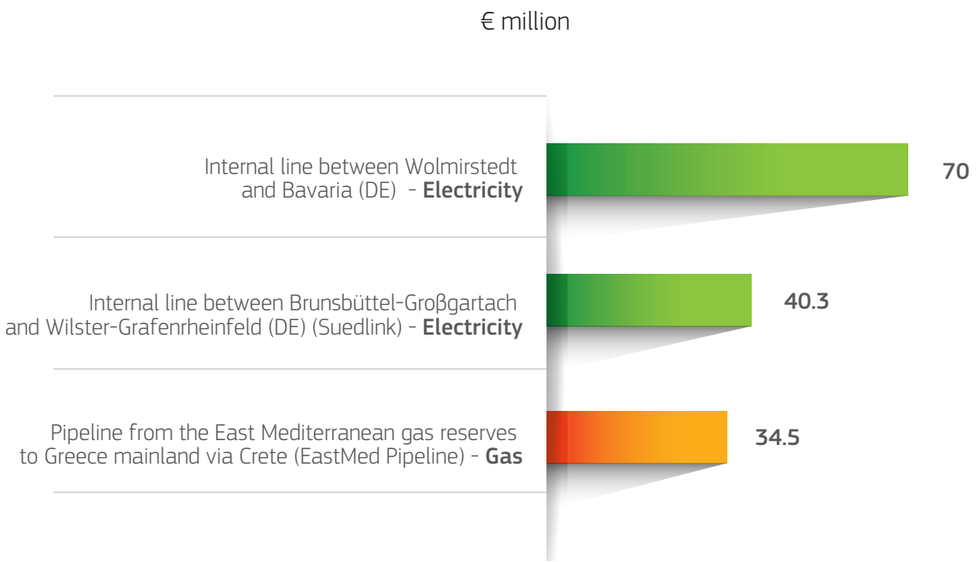
SUPPORTING PROJECTS OF COMMON INTEREST

The 149 CEF Energy Actions contribute to the implementation of 107 PCIs.

TOP 3 CEF ENERGY ACTIONS - WORKS



TOP 3 CEF ENERGY ACTIONS – STUDIES



FOCUS ON PRIORITY CORRIDORS AND THEMATIC AREAS

CEF Energy supports Actions under eight priority corridors, four in the electricity sector, four in the gas sector and two in thematic areas (smart grids and cross-border CO_2 network).

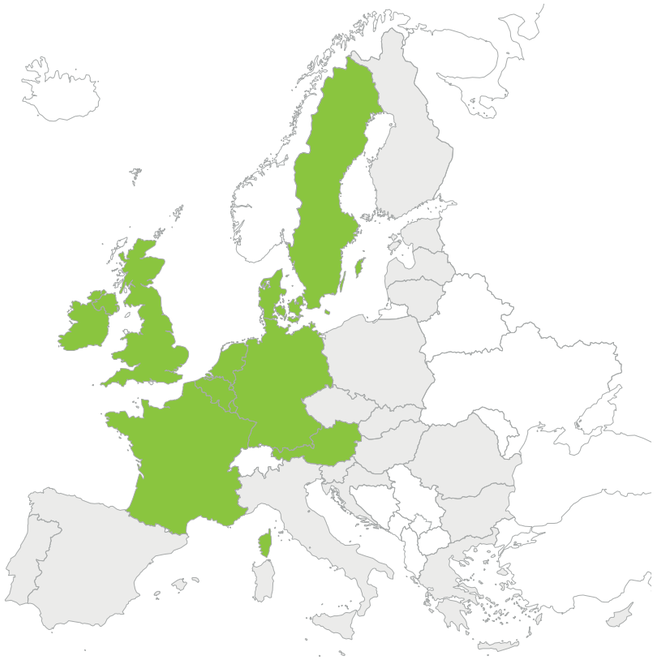
CEF FUNDING PER PRIORITY CORRIDORS (ELECTRICITY)

1. Northern Seas Offshore Grid (NSOG)

€661.8 million
23 Actions

The NSOG main goal is to develop an integrated offshore electricity grid and related interconnectors in the North Sea, Irish Sea, English Channel, Baltic Sea and neighbouring waters to transport electricity from renewable offshore energy sources to centres of consumption and storage and to increase cross-border electricity exchange.

One of the main achievements of the CEF Energy programme in this corridor is enabling studies as well as ongoing construction works on the Celtic Interconnector between France and Ireland (PCI 1.6). Once the Action completed, the Celtic Interconnector, following commissioning tests, will be operational. This will enhance the security of supply and facilitate transition to a low carbon energy future in the region.



CEF FUNDING PER PRIORITY CORRIDORS (ELECTRICITY)

2. North-South electricity interconnections in Western Europe (NSI West Electricity)

€627.3 million
6 Actions

The NSI West electricity corridor's goal is to integrate electricity from renewable energy sourced and reinforce internal grid infrastructure to promote market integration in the region.

One of the main achievements of the CEF Energy programme in this corridor is the permitting studies for the Biscay Gulf interconnection (ES, FR), which aim to offer a more secure, affordable and sustainable electricity system and increase the transmission capacity between France and Spain.

In Germany, the SuedLink aims to increase the interconnection capacity at the Northern and Southern borders by installing underground onshore internal lines of high voltage direct current (HVDC) from the north to the south of the country. The CEF Energy funded Action completed the Federal Sectoral Planning application and obtained the administrative decision (Bundesfachplanung), which will allow the Planning Approval Procedure to start, aiming to identify a more specific route of a 1,000 metres wide corridor.

The designations employed and the presentation of material on the maps (pages 10-19) do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The Transparency Platform provides up to date information for each of the PCIs in the latest PCI list published by the European Commission. A project fiche and the implementation plan are also available for each of the PCIs. In addition, the completed projects from previous PCI lists are displayed.

3. North-South electricity interconnections in Central Eastern and South Eastern Europe (NSI East Electricity)

€257.5 million
24 Actions

The NSI East electricity corridor aims at completing the internal EU electricity market and at integrating generation from renewable energy sources through construction of interconnectors and internal lines.

One of the main achievements of the CEF Energy programme in this corridor is the acceleration of works for new electricity lines between Dobrudja, Burgas, Maritsa East in Bulgaria and the border with Greece. The completion of construction works for these lines is expected by the second quarter of 2021. Upon finalisation of the above lines and the interconnection Maritsa East (BG) and N. Santa (EL) currently under construction, the electricity will flow North-South and East-West and thus contribute to EU internal market integration, regional security of supply and integration of renewable power generation.

CEF FUNDING PER PRIORITY CORRIDORS
(ELECTRICITY)

4. Baltic Energy Market Interconnection Plan in electricity (BEMIP Electricity)

€1.27 billion
16 Actions

The BEMIP electricity corridor's goal is to achieve an open and integrated regional electricity market between EU countries in the Baltic Sea region, ending energy isolation.

The internal electricity line between Ventspils, Tume and Imanta (LV), known as the "Kurzeme Ring" and commissioned in 2019, improves the possibilities for grid connection not only for new consumers, but also for new producers in the region with significant wind energy deployment potential. CEF has also contributed to the works for the Estonia-Latvia third electricity interconnection linking Kilingi-Nõmme and Riga (expected to be commissioned in mid-2021) with the aim to increase the security of supply and develop the electricity market in the Baltic region. The internal line between Riga's second Combined Heat Power Plant (Riga CHP2) and Riga Hydro Power Plant (HPP) in Latvia, finalised in 2020, reinforces the 330 kV transmission network for the stable and reliable operation of the Estonia-Latvia third interconnection during maintenance and emergency operation modes. Furthermore, CEF contributes to the Baltic States synchronisation whose aim is to help complete their energy independence process as well as provide for security of supply for consumers in the Baltics by synchronising the Baltic States' electricity network with the Continental European Network.

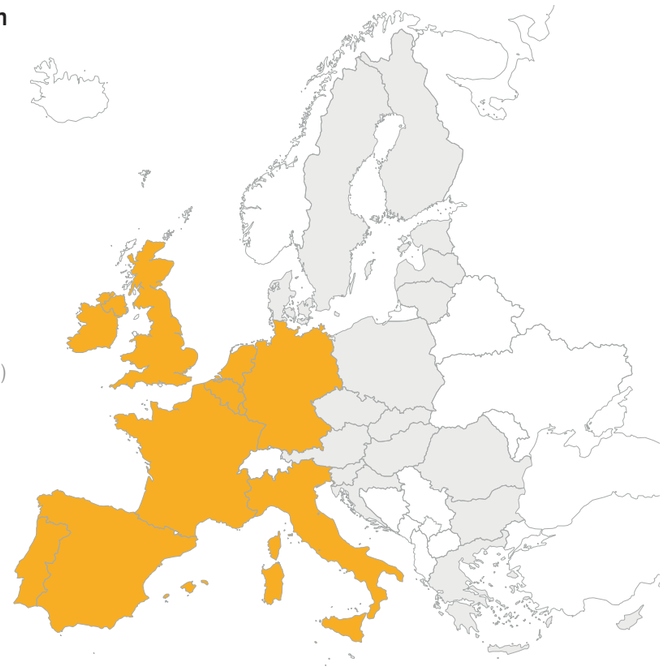
Internal line Riga CHP-2 - Riga HPP (LV) © Augstsprieguma tīkls

Baltic Synchronisation (phase I) - Alytus substation (LT) © Litgrid AB

CEF FUNDING PER PRIORITY CORRIDORS
(GAS)

5. North-South gas interconnections in Western Europe (NSI West Gas)

€55.5 million
12 Actions



The NSI West gas corridor's goal is to further diversify routes of gas supply and increase short-term gas deliverability in Western Europe.

One of the main achievements of the CEF Energy programme in NSI West Gas corridor was the commissioning of the Twinning of Southwest Scotland onshore system between Cluden and Brighouse Bay (UK) in February 2019. This new infrastructure contributes to increasing gas security of supply to Ireland, realising the full potential of the twinned interconnection system and enhancing the resilience of the gas network. Another important project in the region is the reverse flow and deodorisation plant on the Trans Europa Naturgas Pipeline (TENP) in Germany). The innovative deodorisation, commissioned in 2020, removes odorants in imported gas to comply with the regulatory requirements of the German pipeline network, thus allowing the import of natural gas from Italy/France via Switzerland into Germany.

CEF FUNDING PER PRIORITY CORRIDORS
(GAS)

6. North-South gas interconnections in Central Eastern and South Eastern Europe (NSI East Gas)

€455.5 million
28 Actions

The goal for the NSI East gas' corridor is to enhance the security of supply, diversify transit routes and provide for alternative gas supply sources in the region.

In 2020, the construction of the 1st phase of the LNG terminal development in Krk (Croatia) has been completed and the terminal has started its commercial operations. The terminal, which operates as a permanently moored offshore floating storage and regasification unit (FSRU) with a maximum yearly send-out capacity of 2.6 billion cubic meters, allows sending gas to the Croatian transmission network, connected with Hungary and Slovenia, as well as with other non-EU Member States. In addition, the first phase of the BRUA gas pipeline connecting Bulgaria, Romania, Hungary and Austria was completed - the entire pipeline, of approx. 479 km length, as well as all three compressor stations were commissioned in 2020. It started operations in December 2020 and is currently able to ensure bidirectional gas flow at the interconnection points with Bulgaria and Hungary, respectively. Furthermore, in 2020, the construction of the Poland – Slovakia gas interconnection significantly progressed with two thirds of works completed.

CEF Energy also provides funding for the rehabilitation, modernisation and expansion of the Bulgarian transmission system (Phase 2) that will provide technical possibilities for transporting additional natural gas quantities across the country and facilitating several interconnectors with neighbouring countries.

New LNG terminal on the island of Krk (HR) © LNG Hrvatska d.o.o.

CEF FUNDING PER PRIORITY CORRIDORS
(GAS)

7. Southern Gas Corridor (SGC)

€167.1 million
12 Actions

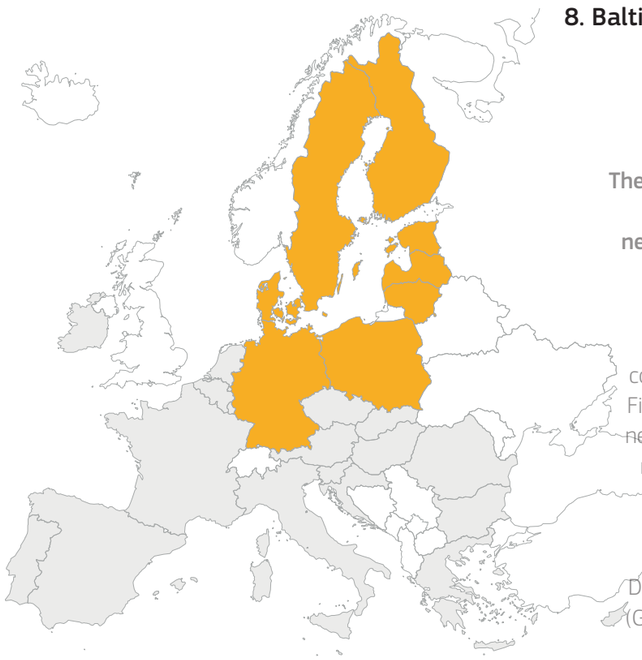
The Southern gas corridor is the natural gas supply route from the Caspian and Middle Eastern regions to Europe.

The goal of this corridor is to reduce Europe's dependency and add diverse sources of energy supply. In this corridor, CEF Energy is funding Actions contributing to the implementation of the Trans-Caspian Gas Pipeline (TCP) and Trans-Adriatic Pipeline (TAP), as well as to the Trans-Anatolian Pipeline (TANAP). TANAP was successfully completed in 2019 while the TAP pipeline was completed in 2020 and started operations in November 2020. CEF also supports infrastructures bringing new gas from the East Mediterranean gas reserves, including the EastMed Pipeline and the development of gas infrastructure in Cyprus (Cyprus Gas2EU), contributing to ending the island's energy isolation, for which engineering, procurement and construction (EPC) contracts were signed in 2019.

CEF FUNDING PER PRIORITY CORRIDORS
(GAS)

8. Baltic Energy Market Interconnection Plan in gas (BEMIP Gas)

€827.2 million
14 Actions



The BEMIP gas corridor's goal is to end dependency on a single supplier, reinforce internal gas networks and increase diversification and security of gas supply in the Baltic region.

One of the main achievements of the CEF Energy programme in the BEMIP gas corridor was the commissioning of the first gas interconnector between Finland and Estonia, the Baltic Connector in 2019. This new infrastructure contributes to create the BEMIP gas regional market by ending Finland's gas isolation and providing alternative gas routes to the Baltic region. Other important infrastructures under construction in the region are the Baltic Pipe between Poland and Denmark and the Gas Interconnector Poland-Lithuania (GIPL). In 2020 the construction of both infrastructures significantly progressed in all concerned countries.

GIPL construction works (LT) @ AB Amber grid © UAB ALVORA

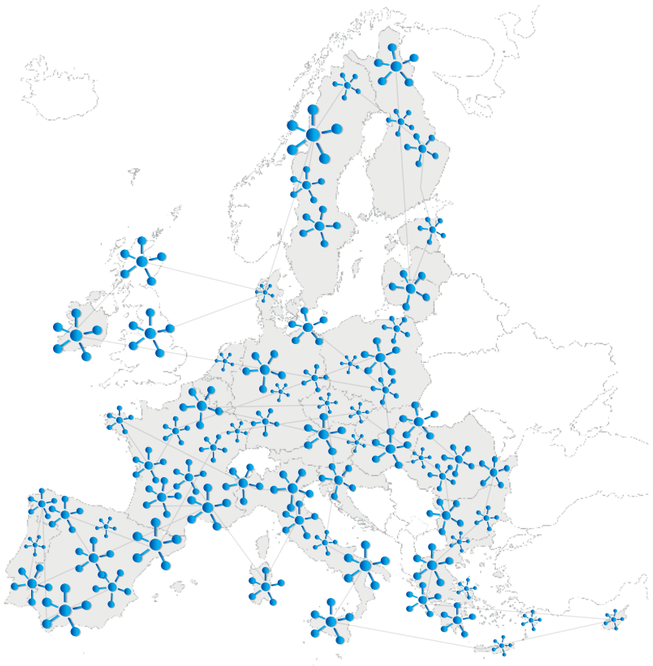
CEF FUNDING PER PRIORITY CORRIDORS (THEMATIC AREAS)

SMART GRIDS DEPLOYMENT

10. Smart grid deployment

€236.5 million

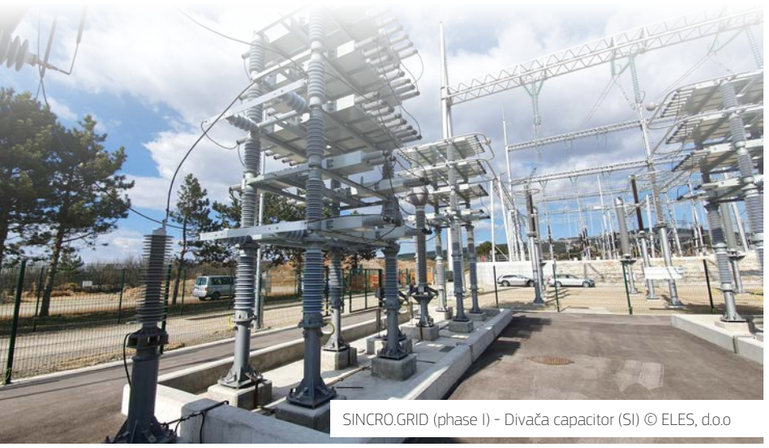
5 Actions



The smart grid thematic group aims to develop a cross-border and smart electricity grid that can optimise grid operations and integrate in a cost efficient manner the behaviour of all users connected to it, ensuring an economically efficient and sustainable power system with low losses and high levels of quality, security of supply and safety.

One of the main achievements of the CEF Energy programme in this thematic area is the launch of construction works for three smart grid PCIs: the ACON (Again Connected Networks), the Sincro.Grid and the Danube InGrid. The ACON project focuses on the modernisation of transformer stations and medium-voltage cross-border interconnection lines in Slovakia and Czechia. The Sincro.Grid project includes the installation and start of operation of new voltage compensation devices and dynamic thermal rate systems on the Croatian and Slovenian grids. Danube InGrid, between Slovakia and Hungary, strengthens the interaction and integration of electricity markets of the two countries, by adopting smart grid technologies both internally and at cross-border level, including adapted information and communication technologies.

These projects will facilitate the uptake of innovation in the electricity grids, better allow for integration of renewable energy in the system, ensure grid stability and contribute to the empowerment of energy consumers.



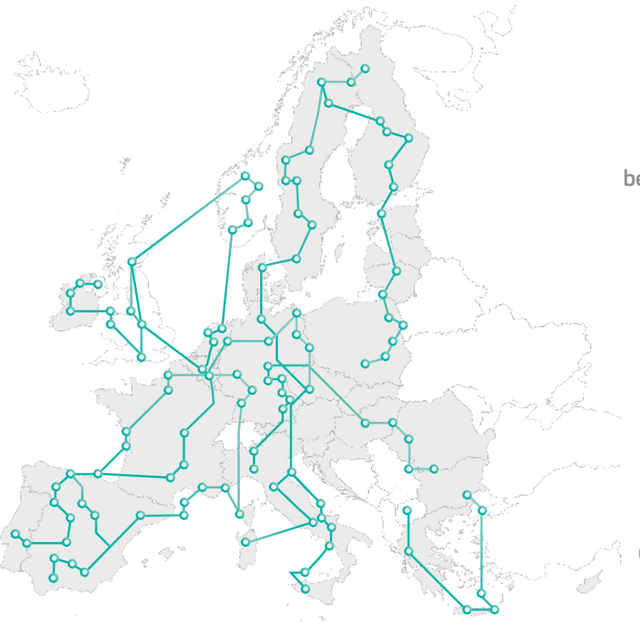
SINCRO.GRID (phase I) - Divača capacitor (SI) © ELES, d.o.o

CROSS-BORDER CO_2 NETWORK

12. Cross-border CO_2 Network

€143.9 million

9 Actions



The cross-border CO_2 networks cover the deployment of CO_2 transport infrastructure between Member States and with neighboring third countries with a view to the transport of carbon dioxide from carbon and capture facilities to underground geological storages (CCS).

The first CO_2 CEF Actions were funded in 2018 (in the United Kingdom and the Netherlands) and focused mainly on feasibility and FEED studies. In 2020, six new Actions were awarded CEF Energy funding in Belgium, the Netherlands and Ireland, including the first works Action for the for the Port of Rotterdam CO_2 Transport Hub and Offshore Storage (Porthos) project (NL). The objective of these Actions is to guarantee CO_2 avoidance by increasing the resilience and security of CO_2 transport and the efficient use of resources by enabling the connection of multiple carbon dioxide sources and storage sites via common infrastructure.

Port of Rotterdam (Porthos project) © Shutterstock

MAPS OF CEF ENERGY ACTIONS

by sector

European Commission

European Climate, Infrastructure and Environment Executive Agency

ELECTRICITY

CEF supported actions by March 2021

Please note:
codes indicated on the map correspond to the action fiches presented in the brochure

Main transmission lines

Electricity actions managed by CINEA

studies works

European Commission

European Climate, Infrastructure and Environment Executive Agency

GAS

CEF supported actions by March 2021

Please note:
codes indicated on the map correspond to the action fiches presented in the brochure

Existing pipeline network

Gas actions managed by CINEA

studies works

European Commission

European Climate, Infrastructure and Environment Executive Agency

SMART GRID

CEF supported actions by March 2021

Please note:
codes indicated on the map
correspond to the action fiches
presented in the brochure

Main transmission lines

Smart Grid actions managed by CINEA

studies works

European Commission

European Climate, Infrastructure and Environment Executive Agency

CO_2

CEF supported actions by March 2021

Please note:
codes indicated on the map
correspond to the action fiches
presented in the brochure

CO_2 actions managed by CINEA

studies works

CEF ENERGY ACTIONS

by corridor and thematic area

Status of Actions:

GA preparation: the Grant agreement (GA) is under preparation and is expected to be signed shortly

Ongoing: the GA is signed and the implementation of the Action is either ongoing or completed but its administrative closure is pending

Closed: the implementation of the Action and its administrative closure are completed

Terminated: the implementation of the Action is not completed and resumption of the Action is not possible. The GA is terminated and its administrative closure is completed

Suspended: the implementation of the Action is put on hold and may be resumed provided that the conditions for resuming the implementation are met

1.

Northern Seas Offshore Grid

Call year:
2015

Location of the Action:
Denmark

Implementation schedule:
October 2015 to August 2017

Maximum EU contribution:
€725,084

Beneficiaries:
Energinet.dk (Denmark)
http://www.energinet.dk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.4.1

Executive summary:
Executive Summary available here.

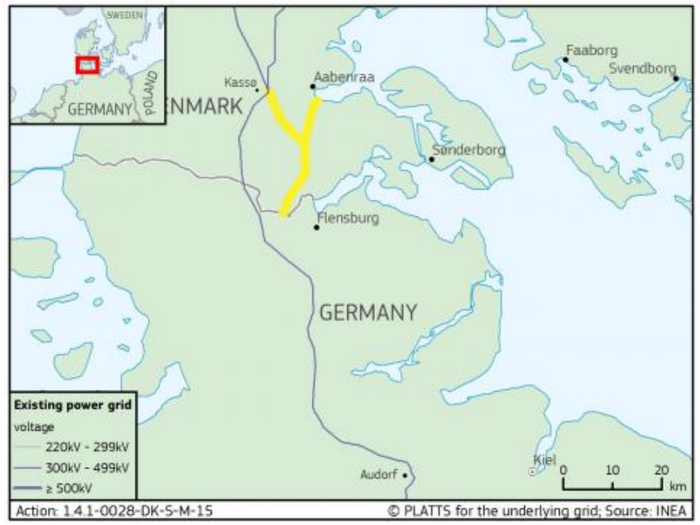
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Feasibility Study regarding the interconnector between Kassoe (DK) and Audorf (DE)

1.4.1-0028-DK-S-M-15



The Action was a part of the Project of Common Interest (PCI) 1.4.1 - Interconnection between Kassø (DK) and Audorf (DE), which aims to construct a new double circuit 400 kV AC overhead line of 120 km from Kassø to Audorf, to dismantle the existing 220 kV AC overhead line from Kassø to Audorf and to expand and rearrange the substation in Kassø according to the new interconnector.

The objective of the Action was to prepare a feasibility study regarding the Danish section of the interconnector.

The scope of the Action included environmental impact assessment (EIA) studies, including Natura 2000 site investigations, the approval of the final EIA report by the competent authorities, and the optimisation of the design of the so-called eagle pylon towers.

The construction of the Danish section of the overhead line (including pylons) from Kassø to Audorf will start in spring 2019.

Celtic Interconnector Feasibility Study

1.6-0024-FRIE-S-M-15

Call year:
2015

Location of the Action:
France, Ireland

Implementation schedule:
April 2015 to August 2016

Maximum EU contribution:
€3,515,595

Beneficiaries:
EirGrid plc (Ireland)
http://www.eirgrid.com

RTE Réseau de Transport d'Electricité (France)
http://www.rte-france.com

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.6

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI) 1.6 Interconnection between La Martyre (FR) and Great Island or Knockraha (IE), currently known as the Celtic Interconnector, which aims to build a new 320 kV – 500 kV high-voltage direct current (HVDC) subsea connection of approx. 600 km and with a capacity of around 700 MW (offshore).

The objective of this Action was to produce an Integrated Feasibility Study Report. The activities took place in both Ireland and France.

The scope of the Action included 1) marine surveys, 2) preliminary design studies and 3) commercial, legal and governance aspects.

The aim of the marine surveys was to determine sea bed conditions in order to confirm the offshore route and assess the technical conditions for laying the cable and to provide the basis for accurate cost estimation.

The aim of the preliminary design studies was to carry out technical analysis and propose an optimal design for the PCI which will be the basis for cost assessment and procurement at a later stage.

The aim of the commercial, legal and governance studies was to understand regulatory and legal obligations, assess the commercial aspects of the PCI and decide the governance to be put in place, in order to present a comprehensive business case for the PCI.

Initial Design and Pre-Consultation of France - Ireland Interconnector

1.6-0024-IEFR-S-M-16

Call year:
2016

Location of the Action:
France, Ireland

Implementation schedule:
November 2016 to December 2018

Maximum EU contribution:
€3,294,856

Beneficiaries:
EirGrid plc (Ireland)
http://www.eirgrid.com

RTE Réseau de Transport d'Electricité (France)
http://www.rte-france.com

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.6

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the Project Common Interest (PCI) 1.6 for the construction of a high-voltage direct current (HVDC) interconnection between France and Ireland, currently known as the Celtic Interconnector. The length is 600 km and the capacity is 700MW.

The objective of the Action was to complete the initial design and pre-consultation phase of the PCI.

The scope of the Action comprised of 1) Technical design-related Studies; 2) Pre-Consultation; 3) Legal Governance; 4) Economic Analysis; 5) Financing Strategy; 6) Engineering, Procurement, and Construction contract preparation; and 7) Integrated Initial Design and Pre-Consultation Report.

Upon completion of the Action the PCI advanced to the detailed design and consents phase.

Action Website:
https://www.celticinterconnector.eu

Call year:
2019

Location of the Action:
France, Ireland

Implementation schedule:
September 2019 to December 2025

Maximum EU contribution:
€530,700,000

Total eligible costs:
€884,500,000

Percentage of EU support:
60%

Beneficiaries:
EirGrid plc (Ireland)
http://www.rte-france.com

RTE Réseau de Transport d'Électricité (France)
http://www.eirgrid.com

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.6

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Delivery of the Celtic Interconnector

1.6-0010-FRIE-W-M-19

The Action implements the Project of Common Interest (PCI) 1.6 France - Ireland interconnection between La Martyre (FR) and Great Island or Knockraha (IE)

[currently known as "Celtic Interconnector"] which consists of a 320 kV (current option) HVDC subsea connection of approximately 575 km with a capacity of around 700 MW. The offshore connection comprises of two Direct Current submarine cables of a length of ca. 500 km, the onshore connections in France and Ireland (Alternating Current and Direct Current underground cables) total ca. 40 km and 35 km respectively.

The objective of the Action is the construction and the pre-commissioning of the Celtic Interconnector.

The Action comprises of the development of design specifications and Engineering, Procurement and Construction contract(s) (EPC) and the ultimate delivery of an EPC contract(s) for the construction, installation, and pre-commissioning of the converter stations and cable systems (land and marine) prior to the final commissioning and commercial operation.

Once the Action is completed, the Celtic Interconnector will be ready to start commissioning tests following which the PCI will be operational.

Action Website:
http://www.eirgridgroup.com/the-grid/projects/celtic-interconnector/the-project/

Call year:
2014

Location of the Action:
France, United Kingdom

Implementation schedule:
July 2014 to November 2017

Maximum EU contribution:
€7,235,000

Beneficiaries:
Transmission Investment (United Kingdom)
http://www.transmissioninvestment.com

Réseau de Transport d'Electricité (RTE) (France)
http://www.rte-france.com

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.7.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

FabLink electricity interconnection project

1.7.1-0003-UKFR-S-M-14

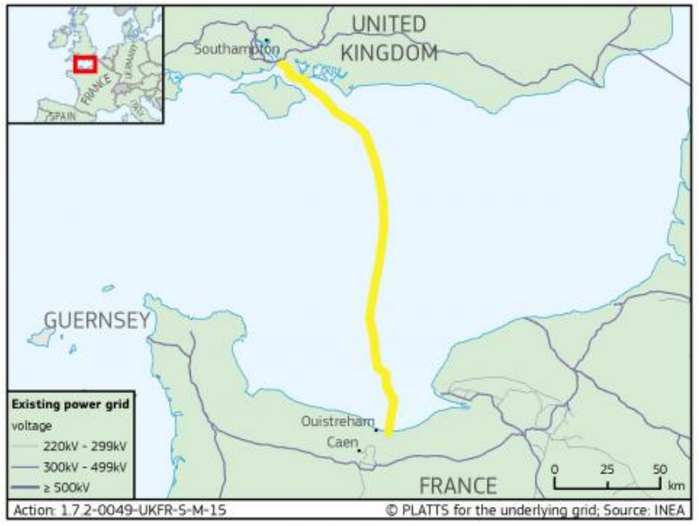
This Action relates to the Project of Common Interest 1.7.1. France – United Kingdom interconnection between Cotentin (FR) and the vicinity of Exeter (UK), [currently known as FAB project]', which aims to connect France with UK via Alderney and consists of a new approximately 218 km long HVDC subsea/underground interconnection between Exeter (UK) and Menuel (France), with VSC converter station at both ends. Expected rated capacity is 1000-1400 MW.

The aim of the Action was to undertake the necessary studies to prepare for the construction of the PCI. The Action consisted of i) technical studies for onshore and offshore cable routing and route surveys; ii) environmental studies for the cable and the converter stations, EIA and public consultations and iii) economics and legal studies for the preparation of documents required by the regulatory authorities, tendering for and negotiating contracts and project financing.

Action Website:
http://www.fablink.net

IFA2 Final Project Development

1.7.2-0049-UKFR-S-M-15



Call year:
2015

Location of the Action:
France, United Kingdom

Implementation schedule:
October 2015 to March 2017

Maximum EU contribution:
€5,957,000

Beneficiaries:
National Grid Interconnector Holdings Limited (United Kingdom)
http://www2.nationalgrid.com

RTE Réseau de Transport d'Electricité (France)
http://www.rte-france.com

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.7.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the PCI France - United Kingdom interconnection between Tourbe (FR) and Chilling (UK) (currently known as the IFA2), which aims to construct a new subsea 1000 MW and 320 kV HVDC interconnector.

The objective of this Action was to prepare the necessary studies required to enable positive Final Investment Decision (FID) decisions on behalf of both beneficiaries and signature of construction contracts.

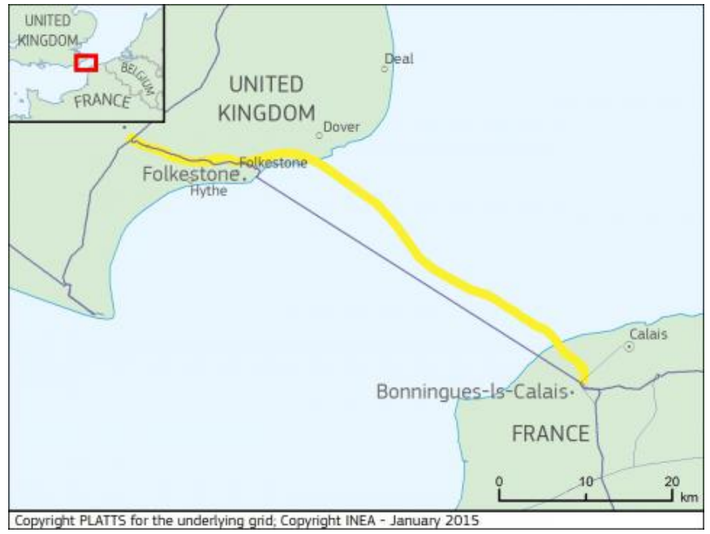
The scope of this Action included i) completion of the environmental impact assessments (EIA) and stakeholder consultation in order to obtain onshore and offshore planning approvals, ii) definition of plant and equipment specifications and undertaking procurement processes to award key contracts for the construction and operation of the cable & converters and iii) development of business case and commercial arrangements between the beneficiaries as well as establishment of specific economic regulatory conditions for the PCI with national regulatory authorities.

Upon Action's completion the construction phase has started.

Action Website:
http://www.ifa2interconnector.com/

ElecLink

1.7.3-0060-UK-S-M-14



Call year:
2014

Location of the Action:
France, United Kingdom

Implementation schedule:
September 2014 to September 2015

Maximum EU contribution:
€602,282

Beneficiaries:
ElecLink Limited (United Kingdom)
http://www.eleclink.co.uk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.7.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

This Action is a part of the Project of Common Interest (PCI) 1.7.3 France - United Kingdom interconnection between Coquelles, France and Folkestone, UK, currently known as the ElecLink project. It aims to build and operate a 1000 MW merchant interconnector of approximately 70 km passing through the Channel Tunnel to link the 400kV grids in both countries.

The Action's objective was to complete a set of studies required to obtain the permits, authorisations, certain regulatory exemptions and financing in order to allow the construction work to begin.

It included compliance with environmental requirements, grid operator requirements and selection of a preferred tenderer for the construction of the interconnector. Furthermore, an Interconnector Access Agreement was developed and finalised, safety requirements were agreed and all elements constituting the project financing were completed.

ElecLink

Call year:
2015

Location of the Action:
France, United Kingdom

Implementation schedule:
April 2015 to March 2016

Maximum EU contribution:
€200,365

Beneficiaries:
ElecLink Limited (United Kingdom)
http://www.eleclink.co.uk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.7.3

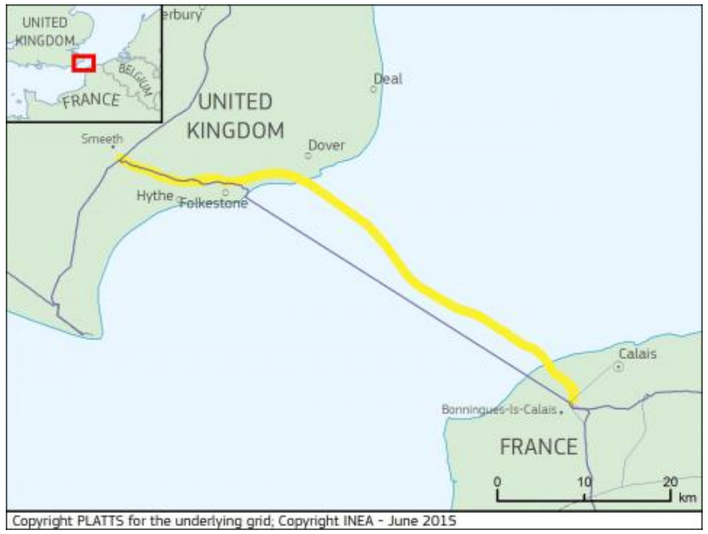
Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

1.7.3-0013-UKFR-S-M-15



The Action is a part of the Project of Common Interest (PCI) 1.7.3 France - United Kingdom interconnection between Coquelles (FR) and Folkestone (UK), currently known as the ElecLink project, which aims to build and operate a new approximately 70km 320 kV DC electricity interconnector with a capacity of 1000 MW via the Channel Tunnel (onshore and offshore) to link the 400kV grids in UK and France.

The objective of this Action was to complete the different studies required to ensure the rules for buyers of long-term interconnector capacity ("Interconnector Participation Rules") are (a) approved by the National Regulatory Authorities ("NRAs") and (b) meet the project lenders' requirements.

The scope of this Action was to draft, amend and finalise legal drafts related to Interconnector Participation Rules; agreements for 'forward sale' of long-term interconnector capacity and a market consultation document, to establish the auction platform and to carry out the relevant studies on market consultation and ensuring the provision of the long-term interconnector capacity to the market.

Studies to prepare implementation of the GridLink interconnector project

Call year:
2018

Location of the Action:
France, United Kingdom

Implementation schedule:
May 2018 to September 2021

Maximum EU contribution:
€15,162,203

Total eligible costs:
€30,324,406

Percentage of EU support:
50%

Beneficiaries:
GridLink Interconnector Limited (United Kingdom)
https://www.gridlinkinterconnector.com/

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

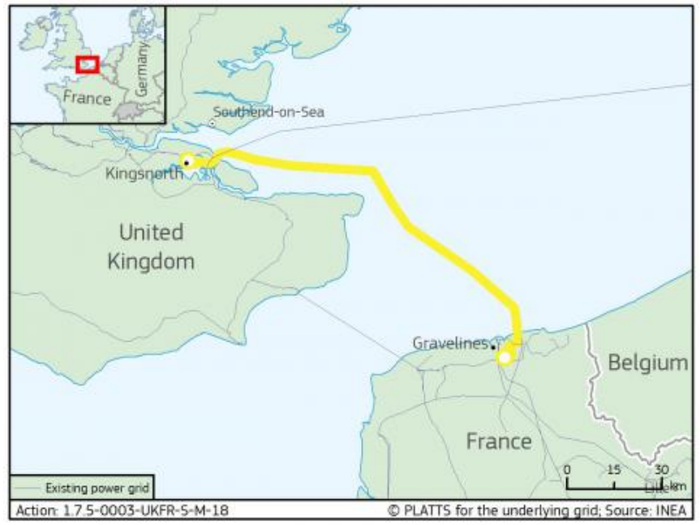
Project(s) of Common Interest:
1.7.5

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

1.7.5-0003-UKFR-S-M-18



The Action contributes to the implementation of the PCI 1.7.5 Interconnection between the vicinity of Dunkerque (France) and the vicinity of Kingsnorth (UK) [currently known as Gridlink] comprising of a 1.4 GW and 157 km long HVDC interconnector.

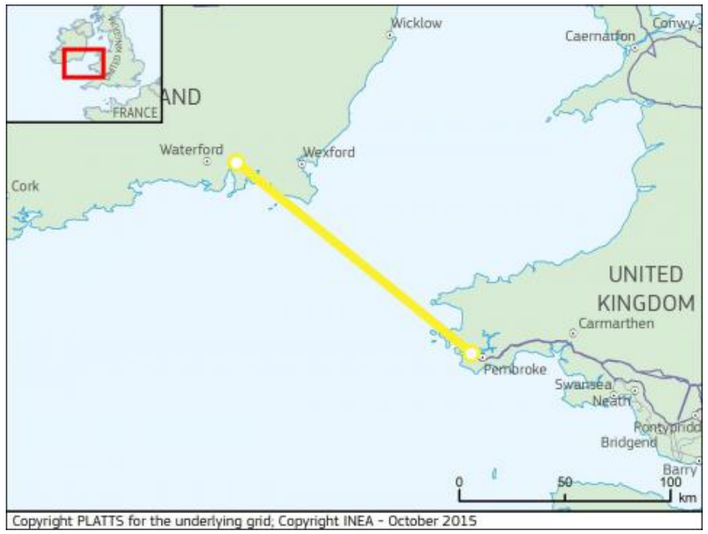
The objective of the Action is to prepare the technical, environmental and commercial studies, including for relevant development consents and permits, and documentation necessary for the regulatory regime and the final investment decision (FID).

The scope of the Action consists of the completion of technical design, engineering, site selection, cable routing, surveying, environmental, development consent and permitting, commercial and regulatory studies, tender documentation and procurement procedure for the EPC contracts for PCI construction, the preparation of the contracts for operations, maintenance, trading and commercial arrangements of the PCI and the commercial structuring and preparation of financing documents, reports and agreements required for FID.

Upon completion of the Action, the PCI will be ready for taking the FID.

Greenwire Interconnector

1.9.1-0018-IEUK-S-M-15



Call year:
2015

Location of the Action:
Ireland, United Kingdom

Implementation schedule:
April 2015 to December 2016

Maximum EU contribution:
€572,900

Beneficiaries:
Element Power Ireland Limited (Ireland)
http://www.greenlinkinterconnector.eu

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.9.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI) 1.9.1 Interconnection between County Offaly (IE), Pembroke and Pentir (UK), which aims to deliver additional transmission capacity between IE and UK. The Action covers the Greenwire Interconnector (the so-called Greenlink) between Great Island, Wexford County (IE) and Pembroke (UK). Greenlink will approximately be a 320kV high-voltage direct current (HVDC) sub-sea cable of a capacity of 500 -700 MW and have a length of approximately 172km.

The objective of the Action was to conduct a series of environmental studies and surveys and address the regulation, grid and financial aspects as well as stakeholder involvement issues in UK and IE. It also comprised the development of the routing for Greenlink, including locations of converter stations onshore and offshore cables, topographical surveys, desktop geotechnical assessments, the preparation of the scoping report and fauna, flora and other surveys for inputs to the EIA, preparing the tenders for contracting the seabed surveys and to confirm the optimal connection points for Greenlink and develop the necessary connection agreements and processes. However, some of these activities were not or only partial completed.

Action Website:
http://www.greenlinkinterconnector.eu

Greenlink Interconnector

1.9.1-0002-IEUK-S-M-18

Call year:
2018

Location of the Action:
Ireland, United Kingdom

Implementation schedule:
April 2018 to September 2019

Maximum EU contribution:
€4,762,957

Total eligible costs:
€9,525,914

Percentage of EU support:
50%

Beneficiaries:
Greenlink Interconnector Limited (Ireland)
https://www.greenlink.ie/

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.9.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the PCI 1.9.1 Ireland - United Kingdom interconnection (the so-called Greenlink) which aims to deliver additional transmission capacity between Ireland and United Kingdom via a 320 kV HVDC sub-sea cable with a capacity of 500 - 700 MW and a length of approximately 172 km.

The objective of the Action is to prepare and submit planning documents, carry out offshore/onshore studies and surveys and address further regulatory, grid and financial aspects of the PCI.

The scope of the Action consists of the completion of offshore and onshore surveys, obtaining information for the cables and converter stations, launch of the procurement process, compliance with health & safety requirements for the PCI, preparing the submissions of the final project assessments for national regulatory authorities, developing the financing strategy for the PCI, obtaining the PCI's grid connection in Ireland, maintaining the grid connection in the UK and undertaking technical reviews and studies for the grid connections.

Upon completion of the Action the process to obtain all permits and licences for the construction of the PCI will commence.

Action Website:
https://www.greenlink.ie/

Call year:
2018

Location of the Action:
Ireland, United Kingdom

Implementation schedule:
October 2018 to December 2020

Maximum EU contribution:
€3,600,323

Total eligible costs:
€7,200,646

Percentage of EU support:
50%

Beneficiaries:
Greenlink Interconnector Limited (Ireland)
https://www.greenlink.ie/

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.9.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Greenlink Interconnector

1.9.1-0026-IEUK-S-M-18

The Action is a part of the Project of Common Interest (PCI) 1.9.1 Ireland - United Kingdom interconnection between Wexford (IE) and Pembroke (UK) aiming at building a 320 kV HVDC sub-sea cable with a capacity of 500 - 700 MW and a length of 172 km.

The Action's aim is to carry out the remaining studies to reach financial close of the PCI and construction start in 2020. This Action follows on from and complements the results of the Action 1.9.1-0002-IEUK-S-M-18.

The scope of the Action consists of 1) obtaining the offshore permits following the submission of the application, 2) completing ground investigations, topographical surveys and wintering bird surveys and obtaining the onshore permits, 3) obtaining the onshore and offshore land rights required to construct the PCI, 4) completing the engineering, procurement and construction (EPC) process to appoint the preferred bidder(s) and agree on the EPC contracts, 5) complete the final project assessment processes with Ofgem and CRU for a final decision on the regulatory regime, 6) maintaining the grid connection agreements with EirGrid and National Grid, and procuring auxiliary supplies from the distribution networks in Ireland and Wales and 7) undertaking the PCI financing process for the construction.

Once the Action is completed, the construction phase can start.

Action Website:
https://www.greenlink.ie/

Call year:
2014

Location of the Action:
Norway, United Kingdom

Implementation schedule:
August 2014 to September 2018

Maximum EU contribution:
€31,300,000

Beneficiaries:
National Grid Interconnector Holdings Limited (United Kingdom)
http://www.nationalgrid.com

Statnett SF (Norway)
http://www.statnett.no

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.10

Executive summary:
Executive Summary available here.

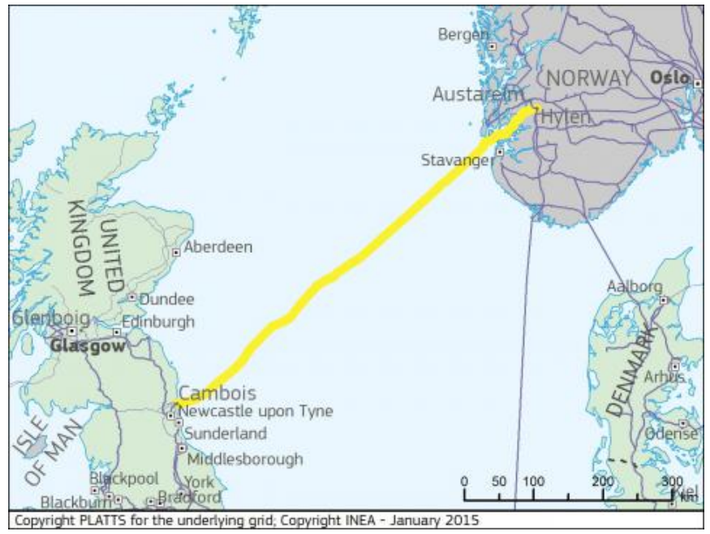
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

NSN Technical Design Studies

1.10-0025-UKNO-S-M-14



This Action is a part of the Project of Common Interest (PCI) 1.10 Norway – United Kingdom interconnection. The interconnector will have a length of approximately 720 km, a capacity of 1.4 GW and a voltage of 525 kV.

The Action, through its eight activities, aimed at carrying out the necessary cable and converter technical design studies, including prototype component manufacture and type testing. The Action also targeted at resolving the necessary consents & licences, business case & commercial arrangements, specifications and procurement steps that must be completed to minimise risks and enable final investment decisions to be taken.

Call year:
2016

Location of the Action:
Norway, United Kingdom

Implementation schedule:
November 2016 to September 2019

Maximum EU contribution:
€9,156,029

Beneficiaries:
NORTHCONNECT KS (Norway)
http://www.northconnect.no

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.10

Executive summary:
Executive Summary available here.

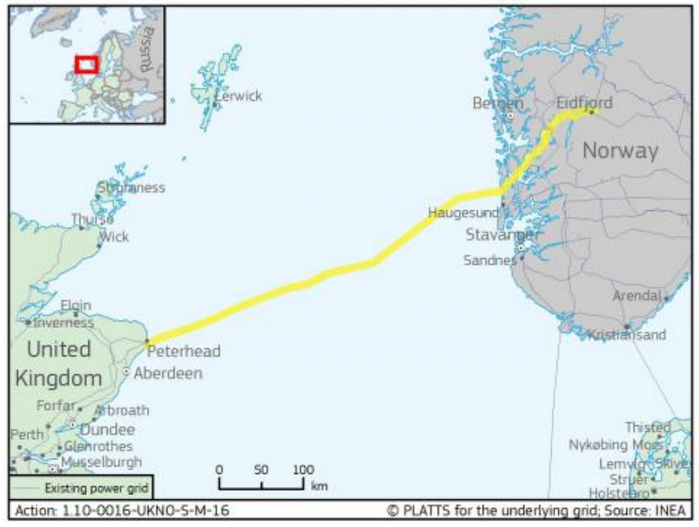
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

NorthConnect Studies and preparatory activities leading to investment decision

1.10-0016-UKNO-S-M-16



The Action contributes to the Project of Common Interest (PCI) 1.10 for the construction of a high-voltage, direct current (HVDC) interconnection between Norway and the United Kingdom. The length is approx. 655 km and the capacity is 1400 MW.

The objective of the Action was to prepare a comprehensive package of studies, investigations and pre-investment activities that were necessary for a final investment decision for the PCI.

The scope of the Action included the development of the design concept and business case, obtaining of all necessary consenting for the implementation of the PCI as well as preparation of contracts ready for execution in the later construction phase (not part of this Action).

At the end of the Action and subject to the granting of the necessary permits in Norway, the PCI should enter the construction phase.

Action Website:
https://northconnect.co.uk/

Call year:
2015

Location of the Action:
United Kingdom

Implementation schedule:
May 2015 to June 2017

Maximum EU contribution:
€3,392,009

Beneficiaries:
Gaelectric Energy Storage Ltd (Ireland)
http://www.project-caeslarne.co.uk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.12

Executive summary:
Executive Summary available here.

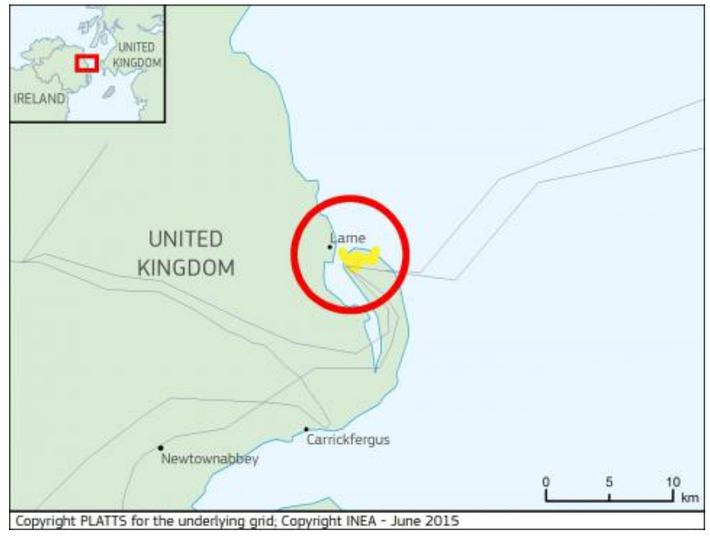
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

CAES Larne EIA & FEED

1.12-0020-UK-S-M-15



The Action is a part of the PCI 1.12 Compressed air energy storage (CAES) in Larne (UK), which aims to build a compressed air energy storage facility using air storage caverns to be created in bedded salt deposits, the facility having an installed generation capacity of approximately 330 MW and an annual storage capacity of approximately 1,426 GWh.

The objective of this Action was to conduct the necessary studies that would prepare the PCI for the application of licences and to provide system services to the all-island Single Electricity Market in Northern Ireland.

The scope of the Action involved submission of a planning application to the Planning Service in Northern Ireland, including an Environment Impact Analysis (EIA). It also involved the design development and completion of the Front-End Engineering Design (FEED) with detailed cost estimate and detailed schedule construction for the entire CAES facility. The submission of the planning application and the EIA tasks were fully completed while the FEED studies were finalised to the level of 70-80%.

Appraisal well, detailed design & commercial structure

1.12-0006-UK-S-M-16

Call year:
2016

Location of the Action:
United Kingdom

Implementation schedule:
September 2016 to December 2018

Maximum EU contribution:
€0

Beneficiaries:
Gaelectric Energy Storage Limited (Ireland)
http://www.gaelectric.ie

Status:
Terminated

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.12

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is part of the PCI 1.12 Compressed air energy storage (CAES) in Larne (UK) to build a CAES facility using air storage caverns to be created in bedded salt deposits with a generation and an annual storage capacity of approx. 330 MW and 1,426 GWh respectively.

The Action involved application for consent to drill, planning for tendering for construction of the appraisal well pad; procurement of services for temporary provision of a suitable drilling rig and equipment; drilling the Permian salt to approx. 1800 m below ground; well geophysical surveys; rock mechanical and solution mining validation tests. It also comprised EPC framework contracts; technical due diligence; application for consents and permits as well as commercial, legal and financial steps required to achieve financial close. Furthermore, it included detailed design of production wells and storage caverns, solution mining equipment, CAES turbo machinery, 275kV High Voltage transmission equipment, high pressure gas metering and filtering equipment and other balance of plant components; system modelling of CAES performance in order to optimise design for provision of system services.

The Action has started but due to mainly lack of planning permission progress has been very limited. Hence the Action was terminated.

CAES Larne Implementation

1.12-0023-UK-W-M-16

Call year:
2016

Location of the Action:
United Kingdom

Implementation schedule:
May 2018 to December 2021

Maximum EU contribution:
€0

Beneficiaries:
Gaelectric Energy Storage Limited (Ireland)
http://www.gaelectric.ie

Status:
Terminated

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.12

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is part of the Project of Common Interest (PCI) 1.12 Compressed air energy storage (CAES) in Larne (UK), which aims to build a CAES facility using air storage caverns to be created in bedded salt deposits with a generation and an annual storage capacity of approximately 330 MW and 1,426 GWh respectively.

The objective of the Action was to carry out the necessary works to complete the PCI.

The scope of the Action comprised of the purchase of long-lead items, on-site preparatory earthworks, connection of construction phase power requirements, construction of Horizontal Directional Drilling intake and outfall pipelines, intake pumping station to deliver sea water for leaching purposes and leaching plant and associated solution mining pipework connecting the caverns below ground to solution mining infrastructure above ground, the creation of storage caverns, the purchase of remaining items. It also comprised of the installation of all above-ground components of the CAES facility and the integration of the sub-surface and above ground CAES infrastructure and commissioning of the completed facility.

The Action has not started due to mainly lack of planning permission and was terminated.

Viking Link Final Project Development

1.14-0015-UKDK-S-M-16

Call year:
2016

Location of the Action:
Denmark, United Kingdom

Implementation schedule:
April 2016 to August 2018

Maximum EU contribution:
€14,824,179

Beneficiaries:
National Grid Interconnector Holdings Limited (United Kingdom)
https://www.nationalgrid.com/

Energinet.dk (Denmark)
http://www.energinet.dk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.14

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI) 1.14 Interconnection between Revsing (DK) and Bicker Fen (UK) [currently known as "Viking Link"], which aims to build a new high-voltage direct current (HVDC) 500 kV subsea cable of approximately 740 km and with a capacity of up to 1400 MW between the UK and Denmark (onshore and offshore).

The scope of the Action covered activities related to Action Governance & Stakeholder Engagement, Technical Specification, Procurement, Safety, Health, Environmental and Quality Management, Economic and Regulation and Commercial Arrangements, Seabed Survey and Consenting – onshore/offshore (DK/UK).

The deliverables of this Action were the completed sea bed survey, acquired relevant consenting permissions, permits, approval of final investment decision and award of key Engineering, Procurement and Construction contract(s) for cable and converters to enable the PCI to commence the construction phase.

Action Website:
http://viking-link.com/

Viking Link Unexploded Ordnance Risk Mitigation Stage 1

1.14-0002-UKDK-S-M-17

Call year:
2017

Location of the Action:
Denmark, United Kingdom

Implementation schedule:
October 2017 to October 2019

Maximum EU contribution:
€1,772,242

Beneficiaries:
National Grid Interconnector Holdings Limited (United Kingdom)
http://www2.nationalgrid.com

Energinet (Denmark)
http://www.energinet.dk

Status:
Closed

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.14

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI)1.14 Interconnection between Revsing (DK) and Bicker Fen (UK) [currently known as "Viking Link"], which aims to build a new high-voltage direct current (HVDC) 500 kV subsea cable of ca. 740 km and with a capacity of up to 1400 MW between the UK and Denmark (onshore and offshore).

The objective of the Action was to mitigate the risk of unexploded ordnance (UXO) along the cable route prior to the link commencing construction, thus supporting the operational target date of 2022.

The Action consisted of a single activity, Unexploded Ordnance Risk Mitigation Stage 1, comprised of UXO related studies and tasks which were completed by external contractors and supported by internal resources. The deliverables of the Action were to procure and award the external UXO contracts, review existing survey data, acquire the relevant permits to carry out the UXO survey, complete the geophysical survey via the chartering of a specially equipped marine vessel, and report findings including the identification of sites which may require a second stage of further inspection.

Upon completion of the Action its results were used for the second phase namely UXO Risk Mitigation Stage 2 that is ongoing.

Action Website:
http://viking-link.com/

Viking Link Unexploded Ordnance Risk Mitigation Stage 2

1.14-0025-DKUK-S-M-18

Call year:
2018

Location of the Action:
Denmark, United Kingdom

Implementation schedule:
January 2019 to December 2020

Maximum EU contribution:
€3,747,099

Total eligible costs:
€7,494,198

Percentage of EU support:
50%

Beneficiaries:
Energinet Eltransmission A/S (Denmark)
https://energinet.dk

National Grid Viking Link Limited (United Kingdom)
http://viking-link.com

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.14

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI) 1.14 Interconnection between Revsing (DK) and Bicker Fen (UK) [currently known as "Viking Link"], which aims to build a new HVDC 500 kV subsea cable of approximately 760 km and with a capacity of up to 1400 MW between the UK and Denmark (onshore and offshore).

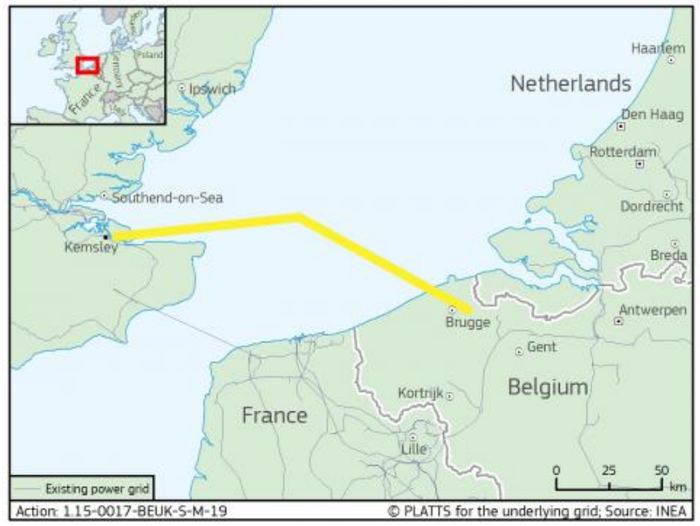
The objective of the Action is to mitigate the risk of unexploded ordnance (UXO) along the cable route prior to the link commencing construction. This will be achieved through the study of potential UXO, supported with physical intervention where necessary.

The scope of the Action consists of a single activity - Unexploded Ordnance Risk Mitigation Stage 2. It covers the inspection of potential UXO and, if required, their removal or detonation. The Action builds on the ongoing Action 1.14-0015-UKDK-S-M-16 (Unexploded Ordnance Risk Mitigation Stage 1).

Once the Action is completed, the construction phase can start.

Nautilus Interconnector Early Stage Development

1.15-0017-BEUK-S-M-19



Call year:
2019

Location of the Action:
Belgium, United Kingdom

Implementation schedule:
July 2019 to June 2021

Maximum EU contribution:
€3,167,500

Total eligible costs:
€6,335,000

Percentage of EU support:
50%

Beneficiaries:
Elia Asset NV/SA (Belgium)
https://www.elia.be/en

National Grid Interconnector Holdings Limited (United Kingdom)
https://www.nationalgrid.com/

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.15

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action will contribute to the implementation of the Project of Common Interest (PCI) 1.15 Interconnection between the Antwerp area (BE) and the vicinity of Kemsley (UK) (also known as Nautilus interconnector), which will consist of a HVDC subsea electricity line with a capacity of around 1000-1400 MW between UK and Belgium.

The objective of the Action is to, through a series of studies and surveys, progress the PCI to the next step; i.e. a seabed survey.

The Action comprises a series of studies & surveys, related to permitting, including near shore surveys, technical specifications, social-economic welfare assessment study, communication and legal & regulation tasks. The Action also includes Hybrid interconnector concept (connection to offshore wind) and Power2gas studies.

Once the Action is completed, the seabed survey will be ready to be launched.

Action Website:
https://www.nationalgrid.com/group/about-us/what-we-do/national-grid-ventures/interconnectors-connecting-cleaner-future

Call year:
2019

Location of the Action:
Netherlands

Implementation schedule:
July 2019 to March 2021

Maximum EU contribution:
€4,434,438

Total eligible costs:
€8,868,876

Percentage of EU support:
50%

Beneficiaries:
Corre Energy Storage BV (Netherlands)
https://correenergystorage.com/project/

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.17

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Action 1.17-0004-NL-S-M-19 "Project Development Phase 2"

1.17-0004-NL-S-M-19

The Action is part of the Project of Common Interest (PCI) 1.17 Compressed air energy storage in Zuidwending (NL), which aims to provide approximately 2.64 GWh of storage capacity, using air storage caverns to be developed in salt deposits.

The Action's objectives are conducting Front-End Engineering Design of the compressed air energy storage facility, preparing Environmental Impact Report and application for the construction permit to the Competent Authority as well as defining the PCI's commercial and financing structure.

The Action's scope covers execution of tenders, including preparation of tender documentation for detailed design, final site selection, scoping of all required environmental studies, preparing and conducting the public consultation, market modelling, as well as tasks related to coordination and engagement of stakeholders.

Once the Action is completed, it will lead to the issuance of the construction permit for the PCI.

Action Website:
https://correenergystorage.com/

Call year:
2020

Location of the Action:
Denmark, Germany, Netherlands

Implementation schedule:
June 2020 to September 2023

Maximum EU contribution:
€13,684,500

Total eligible costs:
€27,369,000

Percentage of EU support:
50%

Beneficiaries:
TenneT TSO B.V. (Netherlands)
https://www.tennet.eu

TenneT TSO GmbH (Germany)
https://www.tennet.eu

Energinet (Denmark)
https://www.energinet.dk

N.V. Nederlandse Gasunie (Netherlands)
https://www.gasunie.nl/en

Status:
Ongoing

Energy corridor:
Northern Seas offshore grid

Energy sector:
Electricity

Project(s) of Common Interest:
1.19

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

North Sea Wind Power Hub feasibility and preparation studies

1.19-0001-NLDE-S-M-20

The Action contributes to the implementation of Project of Common Interest (PCI) 1.19 One or more hubs in the North Sea with interconnectors to bordering North Sea countries (Denmark, Germany, the Netherlands), also known as North Sea Wind Power Hub. This PCI is a first building block in the hub-and-spoke concept connecting up to 12 GW future offshore wind parks to the systems of Denmark, the Netherlands and Germany.

The scope of the Action includes a series of prefeasibility and pre-FEED studies for the PCI's design and considered alternatives, technical feasibility and constructability, grid development study (cost-benefit assessment, adequacy, etc.), planning for implementation (including clarity on market arrangements), financial consequences (socio-economic/investment, risks, stakeholders, etc.) and environmental studies.

Once the Action is completed, the PCI will be ready to move on into the FEED phase and start permitting procedures pending governmental support and decisions.

Action Website:
https://northseawindpowerhub.eu

2.

North-South electricity interconnections in Western Europe

Call year:
2014

Location of the Action:
France, Spain

Implementation schedule:
September 2014 to September 2017

Maximum EU contribution:
€2,319,328

Beneficiaries:
Réseau de Transport d'Electricité (France)
http://www.rte-france.com

RED ELECTRICA DE ESPAÑA S.A.U. (Spain)
http://www.ree.es

Status:
Closed

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.7

Executive summary:
Executive Summary available here.

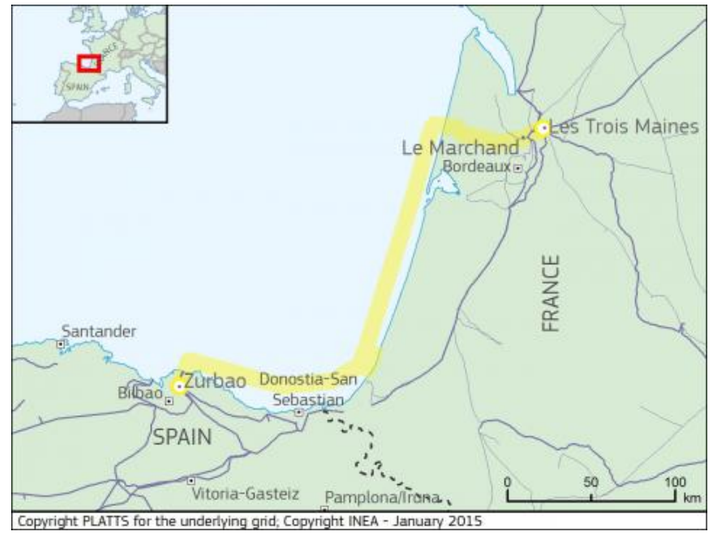
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Studies for a new Atlantic electrical interconnection between Spain and France

2.7-0023-FRES-S-M-14



The Action contributed towards the Project of Common Interest (PCI) 2.7 for the construction of an interconnector Spain and France. The length of the cable was of approximately 370 km with a total maximum capacity of 2000 MW.

The main objective of the Action was to complete the set of studies needed to determine the precise feasibility and impact of the new interconnector between Spain and France.

The Action was comprised of geological studies, environmental and social acceptance studies of the Action stakeholders, studies for the technological solutions (high voltage direct current (HVDC) technology, rate of the converters, cable and route design) and installation processes (subsea cable laying and protection).

Additional studies for the new Atlantic electrical interconnection between Spain and France

2.7-0001-FRES-S-M-16

Call year:
2016

Location of the Action:
France, Spain

Implementation schedule:
September 2016 to March 2019

Maximum EU contribution:
€6,250,000

Beneficiaries:
RESEAU DE TRANSPORT D'ELECTRICITE (France)
http://www.rte-france.com

RED ELECTRICA DE ESPANA S.A.U. (Spain)
http://www.ree.es

Status:
Closed

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.7

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributed to the Project of Common Interest (PCI) 2.7 for the construction of an interconnector between Spain and France. The length of the cable is approximately 370 km with a total maximum capacity of 2000 MW.

The main objective of the Action was to complete the set of studies needed to determine the precise feasibility and impact of the envisaged new interconnection between Spain and France, studying the entire route from both substations in both countries.

The Action comprised of submarine studies, environmental studies for the permitting process and technical studies in order to prepare the specifications for the tender phase of cable system and converter stations. The studies identified the final feasibility of the selected route and detailed the technical means to secure it. It also provided relevant information for the start of the consultation and permitting phase of the PCI after the completion of the action.

Upon completion of the Action, the PCI is ready to finalise permitting procedure and move on to the construction phase.

Works for Biscay Gulf electricity France-Spain interconnection

2.7-0013-FRES-W-M-17

Call year:
2017

Location of the Action:
France, Spain

Implementation schedule:
July 2018 to December 2024

Maximum EU contribution:
€578,487,000

Total eligible costs:
€1,630,000,000

Percentage of EU support:
35%

Beneficiaries:
Red Eléctrica de España S.A.U. (REE) (Spain)
http://www.ree.es

Réseau de Transport d'Électricité (RTE) (France)
http://www.rte-france.com

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.7

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action implements all but the system commissioning of PCI 2.7 for the construction of an interconnector between Spain and France, also known as Biscay Bay interconnector. The length of the route is estimated to be approx. 370 km of which around 280 km involves a submarine section.

The main objective of the Action is the construction of 2 independent HVDC links, comprised of 4 cables, 4 converter stations each rated 1000 MW, located close to Cubnezais (FR) and Gatika (ES) and their HVAC 400kV connection lines from the converter transformers to the existing substations in Cubnezais 400 kV and Gatika 400 kV including the extension of the latter.

The Action comprises of the procurement, purchase, supply and deployment of components, systems and services, as well as the construction and installation activities (mainly throughout turnkey contracts) related to the Capbreton canyon marine drilling, the converter stations (two in Gatika and two in Cubnezais), and the cable system (composed of 4 cables).

Once the action is completed, the PCI will be ready to be system-commissioned.

Developing the SuedLink

2.10-0017-DE-S-M-16

Call year:
2016

Location of the Action:
Germany

Implementation schedule:
November 2016 to May 2020

Maximum EU contribution:
€40,250,000

Total eligible costs:
€80,500,000

Percentage of EU support:
50%

Beneficiaries:
TransnetBW GmbH (Germany)
http://www.transnetbw.com

TenneT TSO GmbH (Germany)
http://www.tennet.eu

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.10

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the Project of Common Interest (PCI) 2.10 for the construction of the underground onshore internal lines of high voltage direct current (HDVC) with a transmission capacity of 2GW and a length of approx. 700 km between Brunsbüttel-Großgartach and Wilster-Grafenrheinfeld (DE) to increase capacity at Northern and Southern borders.

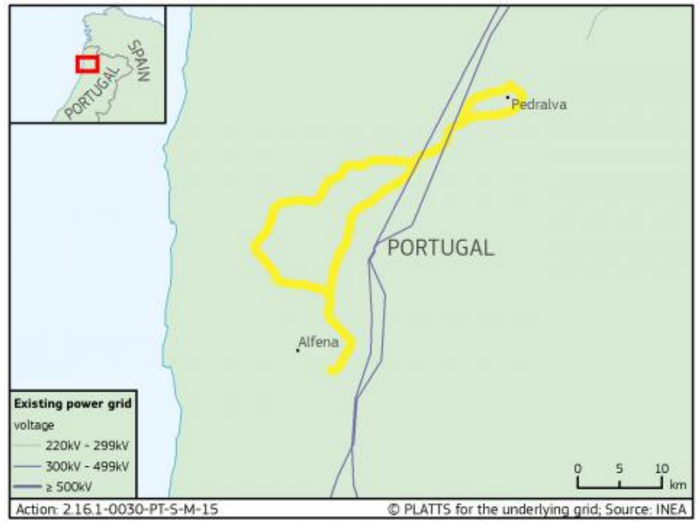
The main objective of the Action is to define a 1000 metres wide corridor route from the north to the south of Germany. This corridor proposal will be assessed within an administrative procedure called Federal Sectoral Planning (Bundesfachplanung) executed under the competent authority (the Bundesnetzagentur, BNetzA).

The Action comprises of the preparation and submission of the initial and final Federal Sectoral Planning application and the administrative decision, taken by the competent authority. The Action also covers the beneficiaries' contribution to the scoping conferences and public hearings as well as the implementation of other public acceptance measures. These include citizen information events such as expert debates, information markets and round tables and the dissemination of around 15,000 information materials.

Once the Action is completed, the Planning Approval Procedure can start, aiming to identify a more specific route of a 1,000 metres wide corridor.

Environmental and engineering studies for the development of the internal Pedralva and Alfena 400 kV double circuit OHL

2.16.1-0030-PT-S-M-15



Call year:
2015

Location of the Action:
Portugal

Implementation schedule:
March 2016 to March 2019

Maximum EU contribution:
€13,163

Beneficiaries:
REN – Rede Eléctrica Nacional, S.A. (Portugal)
http://www.ren.pt

Status:
Closed

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.16.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is part of the Project of Common Interest (PCI) 2.16.1 Internal line between Pedralva and Sobrado (PT), formerly designated Pedralva and Alfena (PT).

The studies concerned approximately 67 km, 400 kV, double circuit Over Head Line (OHL) linking the future Sobrado substation to the existing Pedralva substation.

The Action completed the basic study, including the he large scale condition factors and the stakeholder's consultation to facilitate the permitting procedure.

Action Website:
https://www.ren.pt/en-GB/o_que_fazemos/projetos_interesse_2017/#

Call year:
2015

Location of the Action:
Portugal

Implementation schedule:
October 2015 to March 2019

Maximum EU contribution:
€24,254

Beneficiaries:
REN – Rede Eléctrica Nacional, S.A. (Portugal)
http://www.ren.pt

Status:
Closed

Energy corridor:
North-South electricity interconnections in Western Europe

Energy sector:
Electricity

Project(s) of Common Interest:
2.16.3

Executive summary:
Executive Summary available here.

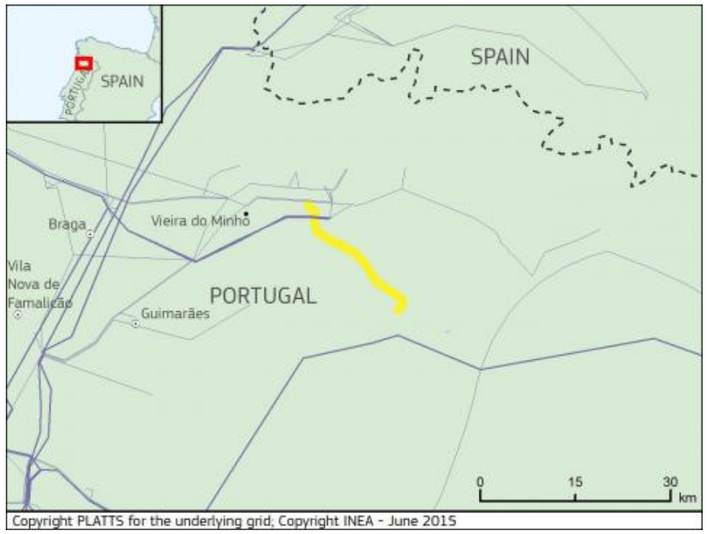
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Environmental and engineering studies for the development of the internal Ribeira de Pena – Vieira do Minho 1/2, 400 kV double circuit overhead line (PT)

2.16.3-0003-PT-S-M-15



The Action is part of the Project of Common Interest (PCI) 2.16.3 Internal line between Vieira do Minho, Ribeira de Pena and Feira (PT), formerly designated Frades B, Ribeira de Pena and Feira (PT), aiming to connect the future Ribeira da Pena substation (400/60 kV) to the existing Vieira do Minho switch station (400 kV).

The Action completed the basic study, including the he large scale condition factors and the stakeholder's consultation to facilitate the permitting procedure.

Action Website:
https://www.ren.pt/en-GB/o_que_fazemos/projetos_interesse_2017/#

3.

Electricity interconnections in Central Eastern and South Eastern Europe

Call year:
2018

Location of the Action:
Austria, Italy

Implementation schedule:
October 2018 to September 2019

Maximum EU contribution:
€160,082

Beneficiaries:
Alpe Adria Energia Srl (Italy)
https://corporate.enel.it/en/stories/a/2017/01/alpe-adria-energia

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

PCI 3.4 Interconnection Somplago (IT) - Wurmlach (AT). Study for final design & exemption application

3.4-0029-ATIT-S-M-18

The Action contributed to the implementation of the Project of Common Interest (PCI) 3.4 "Austria - Italy interconnection between Wurmlach (AT) and Somplago (IT)" which consists of a 220 kV approximately 52 km long underground line of about 300 MW capacity.

The Action had two objectives: to prepare 1) the final design of the PCI cable route and 2) the documentation needed for the third party access exemption in Austria and Italy as defined by the Regulation (EC) No 714/09.

The Action's scope covered the preparation of the technical and environmental documentation to feed into the final design of the cable route for the underground interconnector between Austria and Italy including the substation in Wurmlach and the phase shifter transformer in Austria. It also covered the preparation of the documentation for the above-mentioned third party access exemption.

Following the completion of this Action, the applications for permits and for the third party access exemption for the new underground interconnector are ready for submission to the competent authorities of Austria and Italy.

Call year:
2014

Location of the Action:
Bulgaria, Greece

Implementation schedule:
January 2015 to July 2017

Maximum EU contribution:
€269,725

Beneficiaries:
Independent Power Transmission Operator (IPTO) S.A. (Greece)
http://www.admie.gr

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.7.1

Executive summary:
Executive Summary available here.

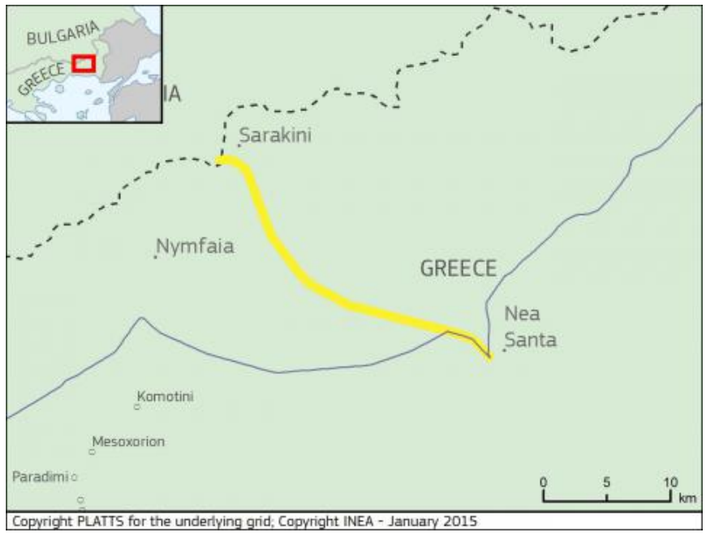
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Studies and preparatory actions for the construction of the Greek part of the 2nd interconnector between Bulgaria and Greece

3.7.1-0018-EL-S-M-14



The Action is part of the Project of Common Interest (PCI) 3.7.1 to construct a new AC 400 kV single-circuit interconnector with a capacity of 1500 MW between Bulgaria and Greece and concerned the part of the Maritsa East - Nea Santa interconnection transmission line of a total length of approximately 29 km in Greece up to the Bulgarian border. A relevant Action (3.7.1-0029-BG-S-M-14) was also undertaken by the Bulgarian TSO, ESO-EAD.

The objectives of the Action were to prepare the application file in order to proceed with the environmental permit granting process and define all of the technical details required for construction. In addition, a detailed cost-benefit analysis and business plan for the entire PCI was prepared which allowed an investment request to be submitted to the relevant national regulatory authorities of Bulgaria and Greece.

Action Website:
http://www.admie.gr/en/transmission-system/system-development/projects-of-common-interest/project/article/2194/

Call year:
2014

Location of the Action:
Bulgaria

Implementation schedule:
November 2014 to March 2018

Maximum EU contribution:
€152,736

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.tso.bg

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.7.1

Executive summary:
Executive Summary available here.

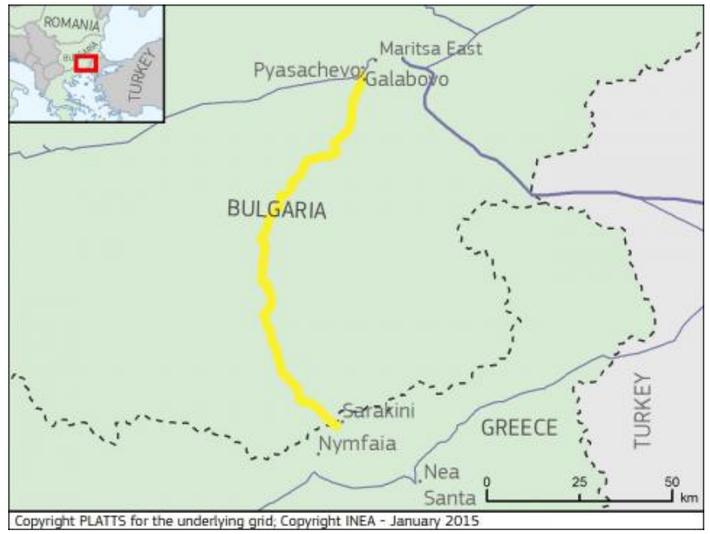
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Studies and pre-investment works for the Bulgarian part of project Interconnection between Maritsa East (BG) and Nea Santa (EL)

3.7.1-0029-BG-S-M-14



The Action is part of the Project of Common Interest (PCI) 3.7.1 to construct a new AC 400 kV single-circuit interconnector with a capacity of 1500 MW between Bulgaria and Greece and concerned the part of the Maritsa East - Nea Santa interconnection transmission line of a total length of approximately 122 km in Bulgaria up to the Greek border. A relevant Action (3.7.1-0018-EL-S-M-14) was also undertaken by the Greek TSO IPTO/ADMIE.

The aim was to prepare studies that are necessary for a final investment decision. It included the obtaining of all necessary permits for the implementation of PCI, as well as the design and preparation of the tender procedure for a contractor to carry out the construction.

Action Website:
http://projects.eso.bg/projects/maritsa-east-nea-santa/?en

Call year:
2018

Location of the Action:
Bulgaria

Implementation schedule:
January 2019 to June 2023

Maximum EU contribution:
€28,641,350

Total eligible costs:
€57,282,700

Percentage of EU support:
50%

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.eso.bg/?en

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.7.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Construction of a new 400 kV interconnection line between Maritsa East (BG) and Nea Santa (EL)

3.7.1-0023-BGEL-W-M-18

The Action implements the Bulgarian section of the Project of Common Interest (PCI) 3.7.1. "Interconnection line between Maritsa East (BG) and Nea Santa (EL)". The objective of the Action is to construct and commission an approximately 123 km long overhead transmission line on the territory of Bulgaria between the substation Maritsa East and the Bulgarian-Greece border connection point. The Action builds upon results achieved under CEF-E Actions 3.7.1-0029-BG-S-M-14 and 3.7.1-0018-EL-S-M-14.

The Action's scope covers the construction and commissioning of the line; the design, construction and commissioning of the facilities for the connection of the transmission line to the Bulgarian power system in substation Maritsa East; the supervision of the construction of the line; the investment control & Action management; and visibility, communication and transparency measures.

Once this Action is completed as well as the construction and commissioning of the Greek part of the PCI (not part of the Action), the commercial operation of the interconnector Maritsa East (BG) – Nea Santa (EL) will start.

Action Website:
http://projects.eso.bg/projects/maritsa-east-nea-santa/?en

Call year:
2014

Location of the Action:
Bulgaria

Implementation schedule:
January 2015 to July 2017

Maximum EU contribution:
€269,740

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.tso.bg

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.7.2, 3.7.3, 3.7.4

Executive summary:
Executive Summary available here.

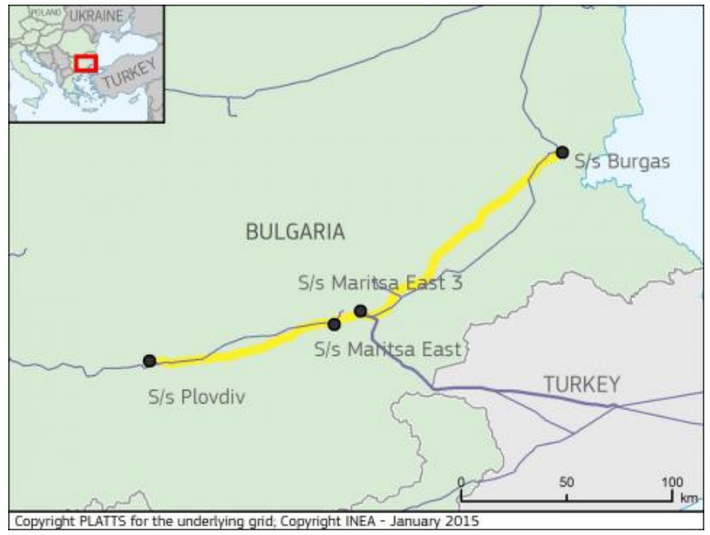
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Studies and pre-investment works for projects: Internal lines Maritsa East-Burgas, Maritsa East-Maritsa East 3 and Maritsa East-Plovdiv

3.7.4-0031-BG-S-M-14



The Action included three out of four Projects of Common Interest (PCIs) from cluster 3.7, namely three internal lines in Bulgaria:

3.7.2 Maritsa East-Plovdiv (+/- 94 km)

3.7.3 Maritsa East-Maritsa East 3 (+/- 13 km)

3.7.4 Maritsa East-Burgas (+/- 150 km)

The three 400 kV internal lines will have a capacity of 1500 MW each and total around 257 km. Their construction will contribute to security of supply, system flexibility, the transmission of electrical energy from renewable energy sources and synchronous and secure operation of the power system in southeast Europe.

The Action delivered the documentation necessary for the final investment decision. It included the final detailed development plans and of the detailed work designs for the construction of the three PCI lines. The tender dossiers for the selection of construction contractors for PCIs 3.7.3 and 3.7.4 were also prepared as part of the Action.

Action Website:
http://projects.eso.bg/projects/maritsa-east-burgas/?en

Call year:
2015

Location of the Action:
Bulgaria

Implementation schedule:
January 2016 to July 2021

Maximum EU contribution:
€28,996,650

Total eligible costs:
€57,993,300

Percentage of EU support:
50%

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.tso.bg

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.7.4

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Construction of new 400 kV OHTL between Maritsa East and Burgas

3.7.4-0008-BG-W-M-15

The Action implements the Project of Common Interest (PCI) 3.7.4. "Internal line between Maritsa East 1 and Burgas (BG)". The objective of the Action is the construction of an approximately 133 km long 400 kV overhead transmission line between substation "Maritsa East" and substation "Burgas" on the territory of Bulgaria.

The Action is composed of the construction works of the entire line, supervision of the construction and Action management, public acceptance, visibility, communication and transparency activities.

Call year:
2014

Location of the Action:
Bulgaria

Implementation schedule:
January 2015 to April 2018

Maximum EU contribution:
€180,002

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.tso.bg

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.8.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Studies and pre-investment works for project "Internal line between Dobrudja and Burgas (BG)"

3.8.1-0030-BG-S-M-14

The Action is a part of the Project of Common Interest (PCI) 3.8.1 to construct a new AC 400 kV single-circuit interconnector with a length of approximately 110 km and a capacity of 1,500 MW between the Dobrudja and Burgas substations in Bulgaria.

The aim was to prepare studies that are necessary for a final investment decision. It included the obtaining of all necessary permits for the implementation of the PCI, as well as the design and preparation of the tender procedure for the selection of a construction contractor. The construction works of this PCI are subsequently funded under Action 3.8.1-0002-BG-W-M-16.

Action Website:
http://projects.eso.bg/projects/dobrutja-burgas/?en

Call year:
2016

Location of the Action:
Bulgaria

Implementation schedule:
January 2017 to July 2021

Maximum EU contribution:
€29,857,500

Total eligible costs:
€59,715,000

Percentage of EU support:
50%

Beneficiaries:
Elektroenergien Sistemen Operator EAD (Bulgaria)
http://www.tso.bg

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.8.1

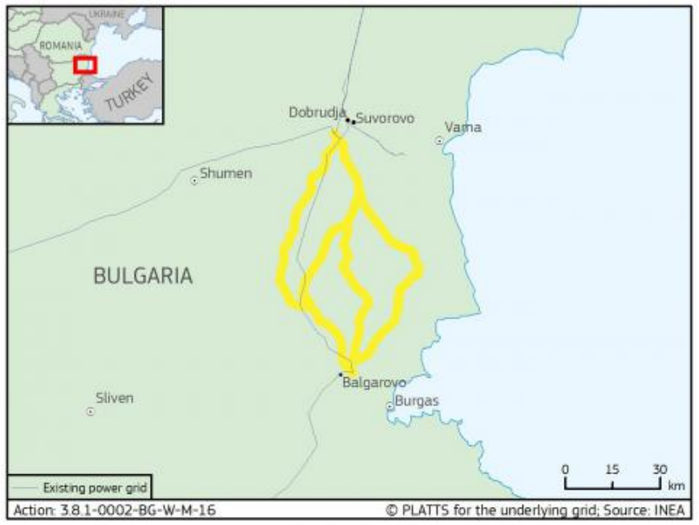
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Construction of a new 400 kV line between Dobrudja and Burgas

3.8.1-0002-BG-W-M-16



The Action contributes to the implementation of the Project of Common Interest (PCI) 3.8.1. The objective of the Action is the construction of an approximately 100 km long overhead transmission line on the territory of Bulgaria between Dobrudja and Burgas. The power capacity of this line will be 1500 MW at a voltage of 400 kV. This Action builds upon the preparatory studies financed under CEF Action 3.8.1-0030-BG-S-M-14.

The Action is composed of: the construction works of the line; the construction works and the acceptance tests of the facilities for the connection of the newly built line to the existing electricity grid; the supervision of these construction works; and activities for visibility, communication and transparency.

Call year:
2017

Location of the Action:
Romania

Implementation schedule:
November 2017 to December 2021

Maximum EU contribution:
€27,085,000

Total eligible costs:
€54,170,000

Percentage of EU support:
50%

Beneficiaries:
Compania Nationala de Transport a Energiei Electrice "Transelectrica" SA (Romania)
http://www.transelectrica.ro

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.8.4

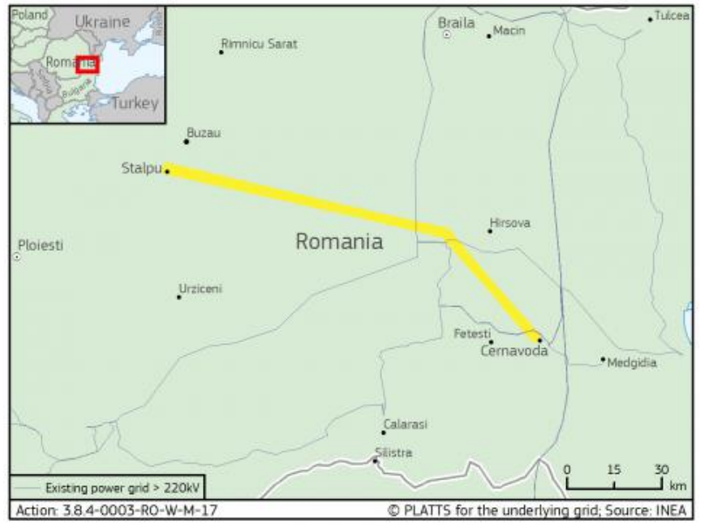
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Internal line between Cernavoda and Stalpu (PCI 3.8.4)

3.8.4-0003-RO-W-M-17



The Action fully implements the Project of Common Interest (PCI) 3.8.4. "Internal line between Cernavoda and Stalpu" (RO), which belongs to PCI Cluster 3.8 Bulgaria — Romania capacity increase [currently known as "Black Sea Corridor"] and reinforces the internal network of Romania by connecting the area of the Black sea coast to the rest of Europe, including the large scale integration of new renewable energy sources (RES), as well as increases the cross-border transfer capacity between Romania and Bulgaria.

The objective of the Action is the construction and commissioning of 400kV alternative current (AC) double circuit overhead transmission line (OHL) of approx. 160 kilometres with a capacity of 2x1380MW with an input/output circuit at the Gura Ialomitei substation between Cernavoda and Stalpu (RO). Stalpu substation will also be upgraded from 220 kV to 400 kV and the Cernavoda and Gura Ialomitei substations will be extended with 400kV switchgears that are required to support this new connection.

Once the Action is completed, the PCI will be operational.

Construction of the OHL 2x400 Cirkovce-Pince and SS 400/110 kV Cirkovce

3.9.1-0024-SI-W-M-18

Call year:
2018

Location of the Action:
Slovenia

Implementation schedule:
October 2018 to December 2021

Maximum EU contribution:
€48,221,508

Total eligible costs:
€112,143,043

Percentage of EU support:
43%

Beneficiaries:
ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja (Slovenia)
https://www.eles.si/en/

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.9.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action implements the Slovenian section of the Project of Common Interest 3.9.1 "Interconnection between Žerjavenec (HR)/Hévíz (HU) and Cirkovce (SI)". The purpose is to connect Slovenia to the existing interconnection between Croatia and Hungary, resulting in two new cross-border circuits: Cirkovce (SI) to Žerjavinec (HR) and Cirkovce (SI) to Hévíz (HU).

The Action's scope covers the construction and commissioning of an approximately 80 km long 400 kV overhead transmission line on the territory of Slovenia between the substation Cirkovce and the Slovenia-Hungary border; the construction and commissioning of new 400 kV and 110 kV switchyards in substation Cirkovce; and the removal of existing and obsolete 220 kV and 110 kV switchyards in substation Cirkovce.

Once the Action is completed, the commercial operation of the interconnection between Cirkovce (SI); Hévíz (HU) and Žerjavinec (HR) will start.

Action Website:
https://www.eles.si/en/transmission-line-2x400-kv-cirkovce-pince-and-rtp-400-110-kv-cirkovce

EuroAsia Interconnector - Design, Implementation and Environmental Studies

3.10.1-0028-CY-S-M-14

Call year:
2014

Location of the Action:
Cyprus, Greece, Israel

Implementation schedule:
January 2015 to November 2016

Maximum EU contribution:
€1,181,342

Beneficiaries:
DEH QUANTUM ENERGY LTD (Cyprus)
http://www.euroasia-interconnector.com

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.10.1, 3.10.2, 3.10.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action concerned the entire cluster 3.10. Israel – Cyprus – Greece between Hadera and Attica region [currently known as the EuroAsia Interconnector] which consists of an approximately 1,518 km long 400 kV interconnector with a capacity of around 2000 MW.

The Action defined the Technical and Technological Solution, selected the preferred route corridor among those already pre-defined including a Reconnaissance Survey, provided useful results for the cable engineering and produced the environmental study in Cyprus, Greece and Israel.

Call year:
2016

Location of the Action:
Cyprus, Greece, Israel

Implementation schedule:
June 2017 to December 2021

Maximum EU contribution:
€12,200,000

Total eligible costs:
€24,400,000

Percentage of EU support:
50%

Beneficiaries:
EuroAsia Interconnector Limited (Cyprus)
http://www.euroasia-interconnector.com

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.10.1, 3.10.2, 3.10.3

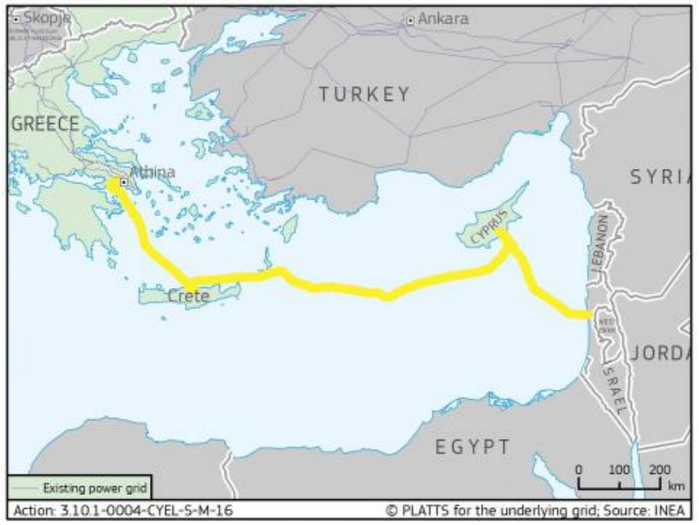
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

EuroAsia Interconnector - Final Detailed Studies

3.10.1-0004-CYEL-S-M-16



The Action contributes to the implementation of the cluster of Projects of Common Interest (PCIs) 3.10. The EuroAsia Interconnector consists of a 500 kV DC underwater electric cable and associated equipment for interconnecting the Cypriot, Israeli and Greek transmission networks. The first phase of the interconnector will have a capacity of 1,000 MW and a total length of around 1,518 km. The Action covers the entire cluster up to 4 October 2019. As from this abovementioned date, the Action applies only to PCIs 3.10.1 and 3.10.2.

Building upon the preparatory studies financed under CEF Action 3.10.1-0028-CY-S-M-14, the objective of this Action is to finalise the design of the interconnector and to procure the associated works contracts. The scope entails the Detailed Geophysical and Geotechnical Route Study; the Submarine Power Cable Installation Study; the Territorial Civil Works Study; the Front End Engineering Design Study; and procurement consultancy services.

Upon completion of the Action, the construction of PCIs 3.10.1 and 3.10.2 will be ready to be launched.

Action Website:
http://www.euroasia-interconnector.com

Call year:
2014

Location of the Action:
Czech Republic

Implementation schedule:
August 2014 to May 2016

Maximum EU contribution:
€1,013,024

Beneficiaries:
ČEPS a.s. (Czech Republic)
http://www.ceps.cz

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.11.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Documentation for zoning permit of the line 400 kV Vernerov-Vitkov, substation 400 kV Vitkov and Project study for substation 400 kV Vernerov

3.11.1-0036-CZ-S-M-14

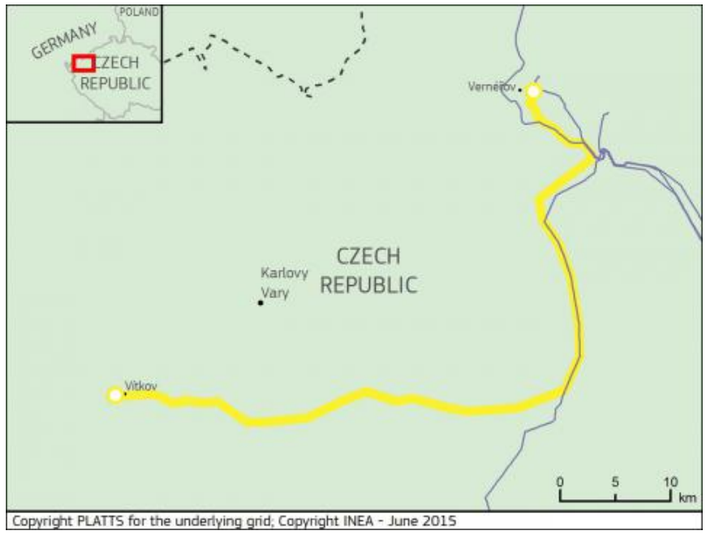
The Action is a part of the Project of Common Interest (PCI) 3.11.1 Internal line between Vernerov and Vitkov, Czech Republic. It is a 400 kV AC double circuit overhead line of approximately 75 km, with a capacity of 2x1730 MVA.

The Action consisted of the preparation and approval of the documentation for the zoning permit for the construction of the 400 kV AC double circuit overhead transmission line between Vernerov and Vítkov (onshore), as well as the documentation for the zoning and building permits for the construction of the 400 kV Vitkov substation. These documents are obligatory under the Building Act of the Czech Republic (No. 183/2006 Coll.), and among the grant permits which need to be obtained before the start of the PCI's construction.

The Action was completed with the submission of the application for the zoning and building permit to the competent authorities.

Final project documentation for substation Vítkov

3.11.1-0007-CZ-S-M-15



Call year:
2015

Location of the Action:
Czech Republic

Implementation schedule:
July 2015 to March 2017

Maximum EU contribution:
€271,408

Beneficiaries:
ČEPS, a.s. (Czech Republic)
http://www.ceps.cz

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.11.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is a part of the Project of Common Interest (PCI) 3.11.1 Internal line between Vernéřov and Vítkov (Czech Republic), which concerns the construction of a 400 kV AC double circuit overhead line of approximately 75 km and with a capacity of 2x1730 MVA. For the purpose of the line the new 400 kV substation Vítkov will be constructed using a special Gas-Insulated Substation (GIS) technology.

The Action aimed to complete the preparatory work for the construction of the substation Vítkov and consisted of the preparation and approval of the final project documentation, including the tendering documentation, as well as of the tendering procedure of the GIS based technology substation.

Action Website:
https://ceps.cz/en/internal-line-between-vernerov-and-vitkov-pci-3-11-1

Documentation for zoning permit of the line Vítkov-Přeštice

3.11.2-0006-CZ-S-M-15

Call year:
2015

Location of the Action:
Czech Republic

Implementation schedule:
May 2015 to June 2016

Maximum EU contribution:
€926,804

Beneficiaries:
ČEPS, a.s. (Czech Republic)
http://www.ceps.cz

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.11.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action is part of the Project of Common Interest (PCI) 3.11.2 Internal line between Vítkov and Přeštice (CZ) which concerns the building of a new 400 kV AC double circuit overhead line (OHL) of approximately 86 km and with a capacity of 2x1730 MVA between Vitkov and Přeštice (onshore) in the Czech Republic.

The Action consisted of the preparation of the documentation for the zoning permit for the construction of the 400 kV AC double circuit overhead transmission line between Vítkov and Přeštice and for the zoning permit for the construction of the substation Přeštice.

The Action was completed by the submission of the applications for the zoning permits for the electricity connection line from Vítkov to Přeštice and for the substation Přeštice to the competent authorities.

Call year:
2017

Location of the Action:
Czech Republic

Implementation schedule:
October 2017 to December 2018

Maximum EU contribution:
€552,717

Beneficiaries:
ČEPS, a.s. (Czech Republic)
http://www.ceps.cz

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.11.2

Executive summary:
Executive Summary available here.

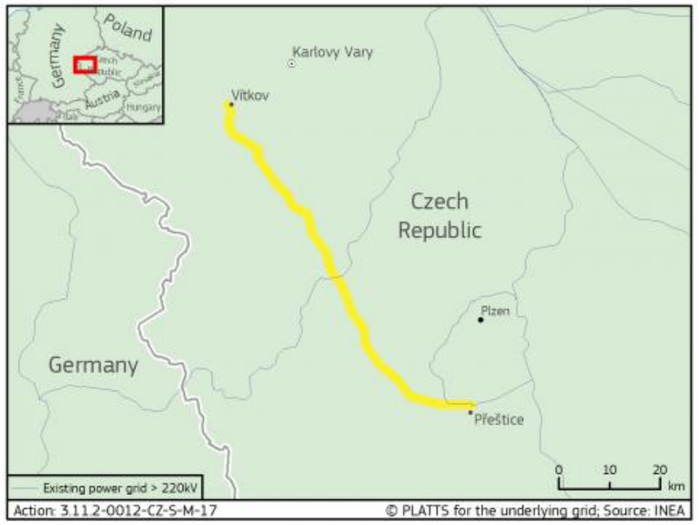
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Final project documentation for the line between Vítkov and Přeštice

3.11.2-0012-CZ-S-M-17



The Action contributed to the implementation of the Project of Common Interest (PCI) 3.11.2 Internal line between Vítkov and Přeštice (CZ) which concerns the building of a new 400 kV AC double circuit overhead transmission line (OHTL) of approximately 86 km and with a capacity of 2x1730 MVA between Vítkov and Přeštice in the Czech Republic. This Action built upon the results of CEF Action 3.11.2-0006-CZ-S-M-15 under which the application to the zoning permit of the line was prepared.

The main objective of the Action was to support the issuance of all the technical reports constituting the final project documentation as defined under the Czech Building Act and of the tender documentation for the line Vítkov-Přeštice.

Upon completion of the Action, the selection of contractors for the construction works for the electricity line Vítkov-Přeštice was launched.

Call year:
2015

Location of the Action:
Czech Republic

Implementation schedule:
November 2015 to June 2018

Maximum EU contribution:
€1,081,874

Beneficiaries:
ČEPS, a.s. (Czech Republic)
http://www.ceps.cz

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.11.3, 3.11.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Final project documentation of the electricity line Kočín-Mírovka

3.11.4-0039-CZ-S-M-15

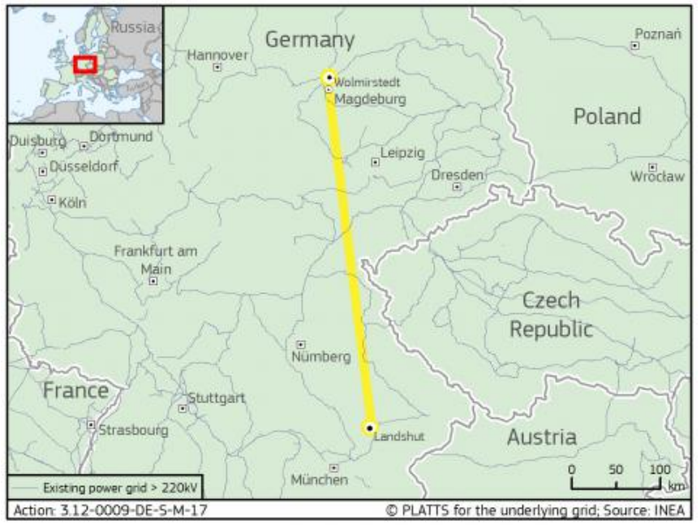
The Action contributed to the implementation of the Project of Common Interest (PCI) 3.11.3 Internal line between Přeštice and Kočín (CZ) and PCI 3.11.4 Internal line between Kočín and Mírovka (CZ).

The Action consisted of the preparation of the final project documentation and tender documents for the extension and upgrade of the existing substation Kočín, the construction of the loop between the OHL V413/416 and the existing substation Mírovk as well as the construction of the electricity line Kočín-Mírovka.

Action Website:
https://www.ceps.cz/en/pci-projects-of-common-interest

Developing the SuedOstLink

3.12-0009-DE-S-M-17



Call year:
2017

Location of the Action:
Germany

Implementation schedule:
October 2017 to March 2022

Maximum EU contribution:
€70,000,000

Total eligible costs:
€140,000,000

Percentage of EU support:
50%

Beneficiaries:
TenneT TSO GmbH (Germany)
http://www.tennet.eu

50Hertz Transmission GmbH (Germany)
http://www.50hertz.com

Status:
Ongoing

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.12

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the implementation of the Project of Common Interest (PCI) 3.12 "Internal line in Germany between Wolmirstedt and Bavaria to increase internal North-South transmission capacity" with a capacity of at least 2,000 MW and an approx. length of 600 km.

The main objective of the Action is the granting of the Federal Sectoral Planning (Bundesfachplanung) and of the Planning Approval (Planfeststellungsverfahren) for the construction of the electricity line. These planning procedures are part of the German Grid Expansion Acceleration Act (Netzausbaubeschleunigungsgesetz, NABEG).

The scope of the Action covers the preparation and submission of the applications to the Federal Sectoral Planning and to the Planning Approval along with the execution of supporting technical studies, as well as public acceptance and consultation measures. The outcome will be the granting of the Federal Sectoral Planning and of the Planning Approval by the competent authority.

Upon completion of the Action, the construction works of the electricity line will be ready to start.

Preparation of Gönyű (HU) – National Border (HU) 400 kV interconnection line

3.16.1-0039-HU-S-M-14

Call year:
2014

Location of the Action:
Hungary

Implementation schedule:
August 2014 to September 2017

Maximum EU contribution:
€139,034

Beneficiaries:
MAVIR Magyar Villamosenergia-ipari Átviteli Rendszerirányító ZRt. (Hungary)
http://www.mavir.hu

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.16.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action was part of the Project of Common Interest (PCI) 3.16.1 which involves the construction of a new double circuit 400 kV interconnection line of approximately 20 km between the substations of Gönyű (Hungary) and Gabčíkovo (Slovakia). The aim is to increase the cross-border transfer capacity between the two countries' transmission systems, promote security of supply and help to integrate renewable energy sources.

The Action referred to the section of the 400 kV and approximately 1 km long double circuit line of optical ground wire between Gönyű and the Slovak border, as well as the upgrade of the Gönyű substation.

The Action was comprised of preparation of the preliminary and detailed feasibility studies for the Hungarian section of the overhead line, the planning and designing of this line and the extension of the Gönyű substation. Other tasks included obtaining and purchasing the necessary permits, ensuring the technical engineering and supervision during the planning phase, as well as the preparation of the MAVIR internal decision regarding the necessity of the submission of an investment request under EU Regulation 347/2013, including a request for a cross-border cost allocation decision.

Call year:
2015

Location of the Action:
Slovakia

Implementation schedule:
September 2016 to June 2018

Maximum EU contribution:
€360,756

Beneficiaries:
Slovenská elektrizačná prenosová sústava, a. s. (Slovakia)
http://www.sepsas.sk

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.16.1

Executive summary:
Executive Summary available here.

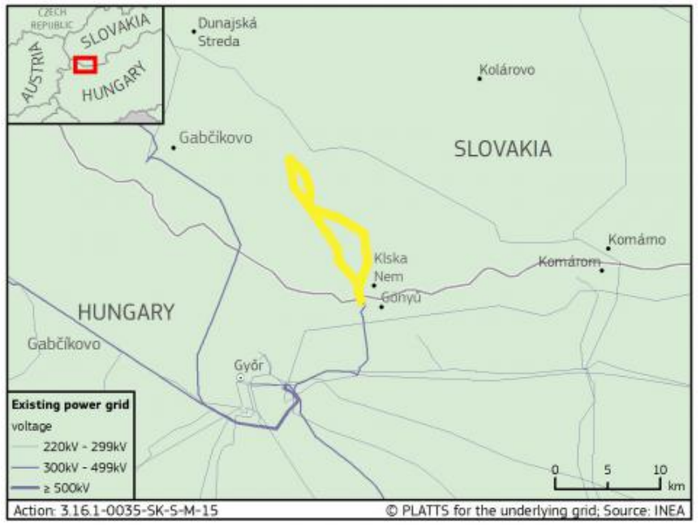
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Design documentation and activities related to permit granting process and final building approval process

3.16.1-0035-SK-S-M-15



The Action contributed to the implementation of the Project of Common Interest (PCI) 3.16.1 "Interconnection between Gönyü (HU) and Gabcíkovo (SK)", which aims to build an interconnector of approximately 20 km of 400 kV AC double line with GTC contribution 1,000 MW between Slovakia and Hungary.

The Action covered the administrative preparation for the construction of approximately 18.5 km of the line on the Slovak territory.

The main objective of the Action was to prepare all necessary documentation required for the permit granting procedures and to ensure the issuance of the permits by the Building Office (Competent Authority) for the construction of the PCI. The Action also covered the preparation of the tendering procedure for the construction contractor.

The deliverables of the Action were the issued building permit and prepared public procurement documentation for the construction contractor.

Action Website:
http://www.mhsr.sk/energetika/medzinarodna-spolupraca/projekty-spolocneho-zaujmu-pci/elektroenergetika/3161-vedenie-2-x-400-kv-gabcikovo-sk-goenyu-hu-velky-dur-sk

Call year:
2015

Location of the Action:
Slovakia

Implementation schedule:
September 2016 to June 2018

Maximum EU contribution:
€633,575

Beneficiaries:
Slovenská elektrizačná prenosová sústava, a. s. (Slovakia)
http://www.sepsas.sk

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.17

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Design documentation and activities related to permit granting process and final building approval process

3.17-0032-SK-S-M-15

The Action contributed to the implementation of the Project of Common Interest (PCI) 3.17 "Interconnection between Sajoivánka (HU) and Rimavská Sobota (SK)" which aims to build an interconnector of approximately 49 km of 400 kV AC double line with GTC contribution 1,000 MW between Slovakia and Hungary.

The Action covered the administrative preparation for the construction of approximately 27 km of the line on the Slovak territory.

The main objective of the Action was to prepare all necessary documentation required for the permit granting procedures and to ensure the issuance of the permits by the Building Office (Competent Authority) for the construction of the PCI. The Action also covered the preparation of the tendering procedure for the construction contractor.

The deliverables of the Action were the issued building permit and prepared public procurement documentation for the construction contractor.

Action Website:
http://www.mhsr.sk/energetika/medzinarodna-spolupraca/projekty-spolocneho-zaujmu-pci/elektroenergetika/317-vedenie-2-x-400-kv-rimavska-sobota-sk-sajoivanka-hu

Study and validation of the optimal technologies for submarine/terrestrial line HVDC Slovenia-Italy

3.21-0024-SI-S-M-14

Call year:
2014

Location of the Action:
Slovenia

Implementation schedule:
November 2014 to June 2016

Maximum EU contribution:
€181,951

Beneficiaries:
ELES, Ltd., Electricity Transmission System Operator (Slovenia)
http://www.eles.si

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.21

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action was a study for the implementation of a part of the Project of Common Interest (PCI) 3.21 PCI Italy-Slovenia interconnection up to 1000 MW between Salgareda (IT) and Divača - Beričevo region (SI). The Action covered only Slovenian territory, from Divača or Beričevo to the Italo-Slovenian sea-border in the Gulf of Trieste, covering a distance between 48 km and 128 km, depending on the connection point – Divača or Beričevo – which is yet to be determined.

The main objectives of the Action were to establish the optimum technology solution of the planned High Voltage Direct Current (HVDC) connection between the two countries and to prepare the Strategic Environmental Assessment (SEA) which are both necessary for the implementation of the PCI.

For this purpose, firstly an analysis of the suitability of different HVDC technologies was performed and, based on technical considerations the most suitable technological solution was identified. Secondly, the Action focused on the preparation of the Strategic Environmental Assessment (SEA), analysing and identifying the environmental risks, screening potential environmental impacts and studying the sensitivity of the environment.

Hydro-pumped storage in Bulgaria - Yadenitsa

3.23-0063-BG-S-M-14

Call year:
2014

Location of the Action:
Bulgaria

Implementation schedule:
August 2014 to January 2018

Maximum EU contribution:
€1,267,799

Beneficiaries:
NATSIONALNA ELEKTRICHESKA KOMPANIA EAD (Bulgaria)
http://www.nek.bg

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.23

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

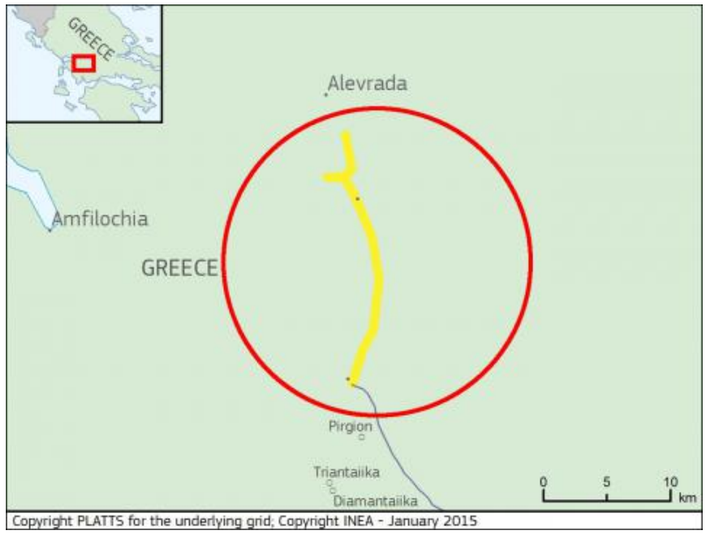
European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action was part of the Project of Common Interest (PCI) 3.23 "Hydro-pumped storage in Bulgaria" which aims to increase the production potential of the Chaira Pump Storage Hydro Power Plant via the construction of the Yadenitsa Dam.

This Action comprised the preparation all of the required documentation, procedures and permits for the PCI's construction. It included: the environmental impact assessment (EIA), detailed design, tender documents for the selection of the contractor for the construction works; the financial analysis and risk assessment, the detailed site development plan and the construction permit.

Design and EIA of the PCI Hydro-pumped storage in Greece – Amfilochia

3.24-0013-EL-S-M-14



Call year:
2014

Location of the Action:
Greece

Implementation schedule:
August 2014 to December 2016

Maximum EU contribution:
€3,882,375

Beneficiaries:
TERNA ENERGY S.A. (Greece)
http://www.terna-energy.com

Status:
Closed

Energy corridor:
North-South electricity interconnections in Central Eastern and South Eastern Europe

Energy sector:
Electricity

Project(s) of Common Interest:
3.24

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action was part of Project of Common Interest (PCI) 3.24 Hydro-pumped storage in Greece (Amfilochia) which consists of two independent upper reservoirs (Agios Georgios and Pyrgos) and a common lower reservoir (Kastraki Lake). The equipment for energy production and energy pumping will be installed in two independent powerhouses located near the Kastraki Lake. The existing infrastructure will be upgraded, helping to reduce the environmental impact and avoid the construction of a new “lower” reservoir.

The Action prepared the detailed design studies, including the tender documents for the Agios Georgios and Pyrgos reservoirs. Its deliverables included the detailed design reports, drawings, the decision on the environmental terms approval and the tender documents for the Agios Georgios and Pyrgos reservoirs.

4.

Baltic Energy Market interconnection Plan in electricity

Call year:
2014

Location of the Action:
Estonia, Latvia

Implementation schedule:
January 2015 to June 2021

Maximum EU contribution:
€112,301,701

Total eligible costs:
€172,771,847

Percentage of EU support:
65%

Beneficiaries:
Elering AS (Estonia)
http://www.elering.ee

Augstsprieguma tikls AS (Latvia)
http://www.ast.lv

Latvijas elektriskie tikli AS (Latvia)
http://www.let.lv

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.2.1, 4.2.2

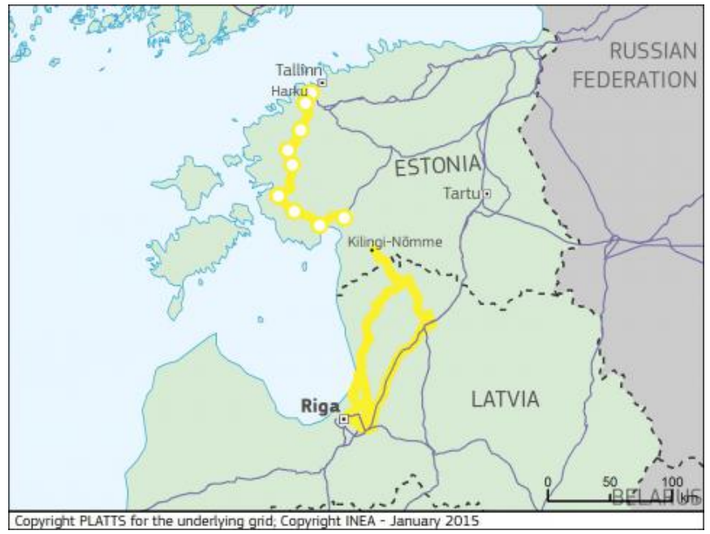
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Interconnection between Kilingi-Nõmme (EE) and Riga CHP2 substation (LV)

4.2.1-0027-LVLV-P-M-14



The Action implements Projects of Common Interest (PCIs) 4.2.1 and 4.2.2 which belong to the cluster 4.2: Cluster Estonia-Latvia between Kilingi-Nõmme and Riga. Known as the 3rd interconnection between Estonia and Latvia, it aims to increase the security of supply and develop the electricity market in the Baltic region.

The goal of the Action is dual. Firstly, on the cross-border section between Estonia and Latvia, it aims to build an interconnection between Kilingi-Nõmme, Estonia and the combined heat and power substations in the Latvian capital of Riga. Secondly, in Estonia the Action will build the internal line between Harku and Sindi for the effective and secure operation of PCI 4.2.1. A major part of the new internal connection will be established on existing lines on the western part of the Estonian mainland.

Call year:
2016

Location of the Action:
Latvia

Implementation schedule:
April 2017 to December 2020

Maximum EU contribution:
€9,990,000

Total eligible costs:
€19,980,000

Percentage of EU support:
50%

Beneficiaries:
AS "Augstsprieguma tīkls" (Latvia)
http://www.ast.lv

Latvijas elektriskie tikli AS (Latvia)
http://www.let.lv

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.2.3

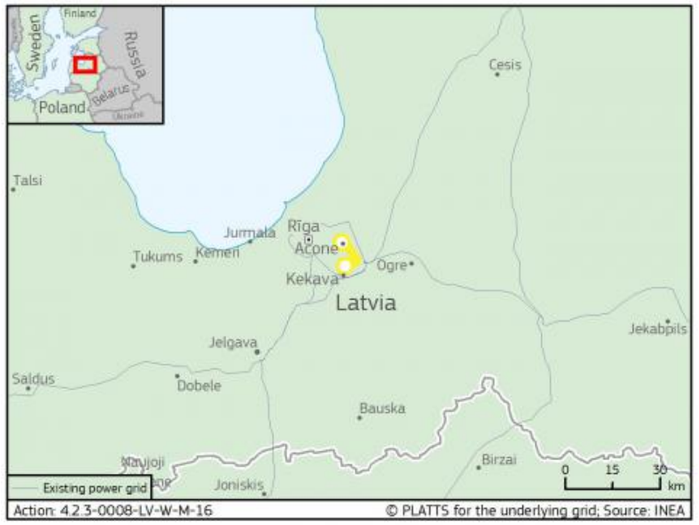
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Internal line between Riga CHP2 and RigaHPP (LV)

4.2.3-0008-LV-W-M-16



The Action implements the Project of Common Interest (PCI) 4.2.3 "Internal line between Riga CHP 2 and Riga HPP (LV)" which belongs to PCI Cluster 4.2 Estonia — Latvia between Kilingi-Nõmme and Riga.

The Action's scope is to build the internal line between two power plants: Riga's second Combined Heat Power Plant (Riga CHP2) and Riga Hydro Power Plant (HPP) in Latvia.

It will cover:

- construction of a new 330 kV transmission line between the 330 kV substations of Riga CHP2 and Riga HPP, including all the necessary design, construction and civil engineering works;
- construction of a new line bay in the existing Riga CHP2 330kV switchyard, including the installation of new high voltage AC equipment and switchgear components;
- conversion of the existing 330 kV Riga HPP substation from H-type scheme to two busbar scheme with a new AC switchgear and its auxiliary components.

Call year:
2014

Location of the Action:
Lithuania

Implementation schedule:
September 2014 to April 2015

Maximum EU contribution:
€125,000

Beneficiaries:
LITGRID AB (Lithuania)
http://www.litgrid.eu

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Identification of technical requirements and costs for integration of large scale generating unit into the Baltic states' Power System Operating synchronously with the Continental Europe Networks

4.3-0002-LT-S-M-14

The Action was part of Project of Common Interest (PCI) 4.3, which aims to address the synchronous operation of the Baltic States' electricity system with the European continental networks.

The Action's specific goal was to complement a 2013 feasibility study by the Baltic States' Transmission System Operators, by providing the final technical requirements for a large scale generating unit to be integrated into the Baltic electricity system. It evaluated various operating requirements and parameters of the synchronous zone and related costs compared to different scenarios. The study covered all system reinforcements, stability improvements, technical measures or operational limitations (if no other measures were available), as well as the implementation plan. Its main deliverable was the set up the package of the final technical requirements necessary for the integration of the large scale generating unit into the transmission network.

Internal line between Ventspils, Tume and Imanta (LV)

4.4.1-0004-LVLV-P-M-14

Call year:
2014

Location of the Action:
Latvia

Implementation schedule:
July 2014 to December 2019

Maximum EU contribution:
€55,089,000

Beneficiaries:
Augstsprieguma tikls AS (Latvia)
http://www.ast.lv

Latvijas elektriskie tikli AS (Latvia)
http://www.let.lv

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.4.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

This Action fully implemented the Project of Common Interest (PCI) 4.4.1 Internal line between Ventspils, Tume and Imanta.

The goal of this Action was to deliver the following infrastructure:

1. The construction of a double circuit 330 kV and 110 kV overhead line from Ventspils-Tume-Imanta measuring approximately 210 km and current rating of 1600A for 330 kV line;
2. The extension of the 330 kV "Imanta" substation for the transmission line connection to the network, where a new AC switchgear and auxiliary components were delivered and installed;
3. The construction of the new 330 kV and extension of the existing 110 kV "Tume" substation, including one 330/110 kV autotransformer, reactive power compensation equipment and new 110 kV bay for autotransformer connection to the transmission network;
4. In total ten 110 kV substations were reconstructed or upgraded in view of the transit current rating increase.

The line was commissioned in December 2019.

LitPol Link construction

4.5.1-0005-LT-W-M-15

Call year:
2015

Location of the Action:
Lithuania

Implementation schedule:
April 2015 to February 2016

Maximum EU contribution:
€27,375,582

Beneficiaries:
LITGRID AB (Lithuania)
http://www.litgrid.eu

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.5.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action implemented the first part of Project of Common Interest (PCI) 4.5.1 which is the interconnection between the Lithuanian and the Polish electricity system at the Lithuanian/Polish border called “LitPol Link”.

The Action's goal was the construction and commissioning of approximately 51 km double circuit 400 kV AC overhead line (OHL) between Alytus (Lithuania) to the Polish border. This consisted of the construction of OHL foundations, in the Lithuanian territory and the construction and commissioning of a 500 MW High Voltage Direct Current (HVDC) back-to-back converter station with a 400 kV switchyard in Alytus (Lithuania). There is an 8 single-phase converter station transformers, of which 2 aree spare ones.

The Action paves the way for the commencement of the second phase of the LitPol Link.

Call year:
2018

Location of the Action:
Poland

Implementation schedule:
April 2018 to December 2022

Maximum EU contribution:
€3,330,148

Total eligible costs:
€6,660,296

Percentage of EU support:
50%

Beneficiaries:
Polskie Sieci Elektroenergetyczne S.A. (Poland)
https://www.pse.pl/web/pse-eng

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.5.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

EIA and design studies for 400 kV line between Stanisławów and Ostrołęka

4.5.2-0008-PL-S-M-18

The Action contributes to the implementation of the PCI 4.5.2 “Internal line between Stanisławów and Ostrołęka (PL)” which aims to construct a new 400 kV AC double-circuit overhead line (OHL) with a length of approx. 108 km and capacity of 2x1870 MVA between Stanisławów and Ostrołęka, together with extension of Stanisławów and Ostrołęka substations and construction of Wyszków substation.

The Action's aim is to obtain the EIA decisions and building permits for the OHL and substations, to prepare the related preliminary and detailed designs, and to implement social communication activities.

Once the Action is completed, the construction of the PCI is ready to start.

Call year:
2019

Location of the Action:
Estonia

Implementation schedule:
July 2019 to March 2021

Maximum EU contribution:
€1,187,020

Total eligible costs:
€2,374,040

Percentage of EU support:
50%

Beneficiaries:
Energiasalv Pakri OÜ (Estonia)
http://energiasalv.ee/

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.6

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Estonian PHES studies

4.6-0002-EE-S-M-19

The Action contributes to the implementation of the Project of Common Interest 4.6. “Hydro-pumped electricity storage in Estonia” which aims to construct a hydro-pumped storage of 500 MW and storage capacity of 6 GWh which enables saving in generation capacity of 16-20 million euro a year.

The objective of the Action is to conduct studies and prepare a set of documents necessary for obtaining a construction permit for the hydro pumped storage (PHES) in Estonia.

The Action's scope covers the following:

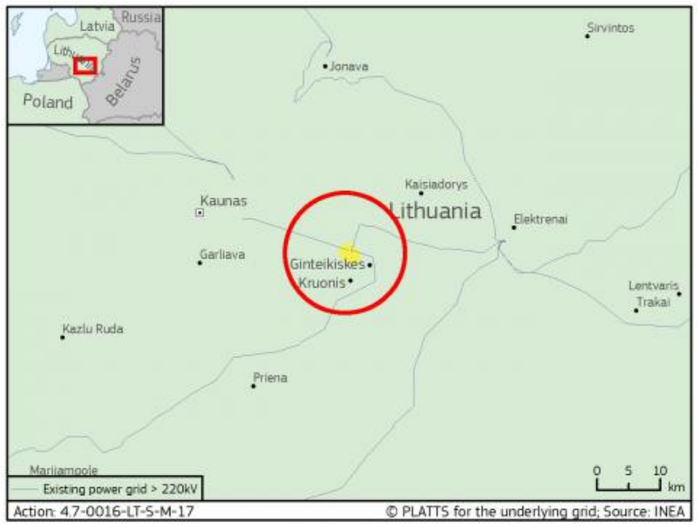
- Geological investigations necessary to obtain information about soil and rock conditions for the design;
- Concept review with conceptual design and FEED;
- Environmental and technical studies necessary to obtain the construction permit and relevant process management and public involvement activities;
- Action management.

Once the Action is completed, the construction permit can be issued.

Action Website:
http://energiasalv.ee/

Evaluation of technical condition of the infrastructure and penstock site for the Kruonis PSPP Expansion

4.7-0016-LT-S-M-17



Call year:
2017

Location of the Action:
Lithuania

Implementation schedule:
December 2017 to September 2019

Maximum EU contribution:
€38,608

Beneficiaries:
Ignitis gamyba, AB (Lithuania)
http://www.gamyba.le.lt

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.7

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributed to the implementation of the Project of Common Interest (PCI) 4.7. “Capacity increase of hydro-pumped storage in Lithuania — Kruonis” which aims to install a new 225 MW variable speed (asynchronous) unit in Kruonis pumped storage power plant.

The Action aimed to prepare a study in order to assess the condition of the technological infrastructure built in 1985 and its suitability for the implementation of the Kruonis pumped storage power plant (PSPP) PCI. The action consisted of two activities: a) data collection and testing related to the concrete strength of the building, characteristics of penstock poles and the geology of the penstock area; b) the analysis of the data gathered and the preparation of summary reports which includde concrete strength protocols, geological survey report, technical documentation regarding the depth and structural integrity of the poles.

The PCI is now expected to enter the Final Investment Decision's phase.

Evaluation of Suitability of Different Technological Solutions and Socioeconomic Analysis

4.7-0004-LT-S-M-18

Call year:
2018

Location of the Action:
Lithuania

Implementation schedule:
September 2018 to October 2019

Maximum EU contribution:
€0

Beneficiaries:
"Lietuvos energijos gamyba", AB (Lithuania)
http://www.gamyba.le.lt

Status:
Terminated

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.7

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributed to the implementation of the PCI 4.7. “Capacity increase of hydro-pumped storage in Lithuania—Kruonis,” which aims to install a new 225 MW variable speed (asynchronous) unit.

The Action's aimed to carry out studies determining the most suitable technological solution to be selected for Kruonis hydro pumped-storage power plant's (HPSPP) expansion, as well as to assess the long-term socioeconomic benefits to the grid and the market in the regional context in the light of the integration of the Baltic States' electricity network into the Continental European network.

The Action was terminated due to significant changes to the Action’s scope and budget which occurred during its implementation.

Evaluation of different technological solutions for the extension of Kruonis Hydro Pumped Storage Power Plant (HPSPP) and socioeconomic analysis

4.7-0005-LT-S-M-19

Call year:
2019

Location of the Action:
Lithuania

Implementation schedule:
July 2019 to July 2020

Maximum EU contribution:
€123,785

Beneficiaries:
AB Ignitis gamyba (Lithuania)
https://ignitisgamyba.lt

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

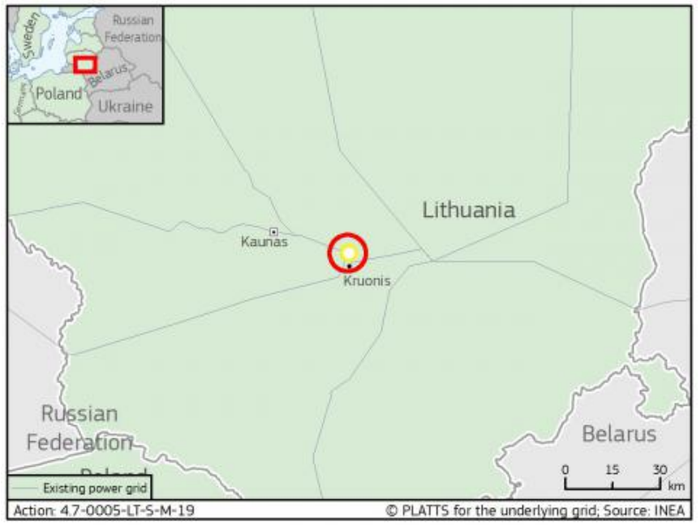
Project(s) of Common Interest:
4.7

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/



The Action contributed to the implementation of the Project of Common Interest (PCI) 4.7 "Capacity increase of hydro-pumped storage in Lithuania — Kruonis," which aimed to install a new 225 MW variable speed unit.

The Action's aim was to carry out two studies to determine the most suitable technological solution for Kruonis hydro pumped-storage power plant's (HPSPP) expansion, and to assess the long-term socioeconomic benefits of such alternatives determining which one generates the greatest socio-economic returns.

Upon completion of the Action the PCI entered the final investment decision phase.

Baltic Synchronisation Project – Phase 1

4.8.1-0021-LTLV-W-M-18

Call year:
2018

Location of the Action:
Estonia, Latvia, Lithuania

Implementation schedule:
January 2019 to December 2025

Maximum EU contribution:
€322,792,500

Total eligible costs:
€430,390,000

Percentage of EU support:
75%

Beneficiaries:
LITGRID AB (Lithuania)
http://www.litgrid.eu/

AS "Augstsprieguma tīkls" (Latvia)
http://www.ast.lv/en

Elering AS (Estonia)
https://www.elering.ee/en

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

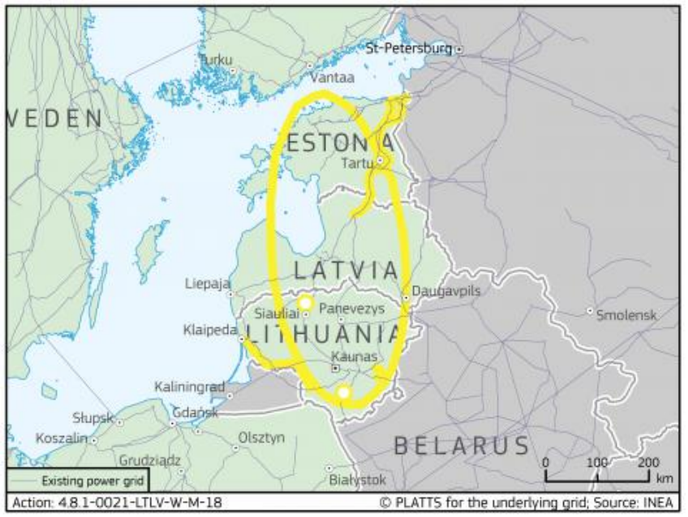
Energy sector:
Electricity

Project(s) of Common Interest:
4.8.1, 4.8.2, 4.8.3, 4.8.4, 4.8.8, 4.8.9

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/



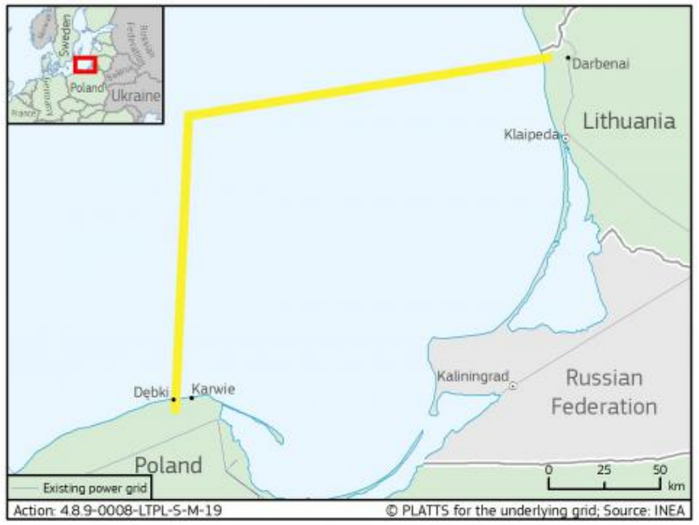
The Action contributes to the implementation 6 PCIs of the Cluster 4.8 Integration and synchronisation of the Baltic States' electricity system with the European network, namely 4.8.1 Interconnection between Tartu (EE) and Valmiera (LV); 4.8.2 Internal line between Balti and Tartu (EE); 4.8.3 Interconnection Tsirguliina (EE) and Valmiera (LV); 4.8.4 Internal line between Eesti and Tsirguliina (EE); 4.8.8 Internal line between Vilnius and Neris (LT); 4.8.9 Further infrastructure aspects of the synchronisation of the Baltic States' electricity system with the European networks. The Action fully implements Phase 1 - Internal transmission network reinforcements in the Baltic States - of the entire Synchronisation project.

The Action's scope covers the construction or reconstruction, including dismantling, of new or existing lines in Latvia, Lithuania and Estonia; the construction of new autotransformers and switchyard in Lithuania; installation of new voltage control units, equipment for providing of inertia and frequency regulation in the Baltics and preparatory works of the AGC and frequency control monitoring systems in the Baltics.

Once the Action is completed together with Phase II of the Baltic Synchronisation project the Baltic States will be ready to operate in synchronous mode with Central European Network (CEN).

Baltic Synchronisation Project Phase II. Preparatory phase for Harmony Link interconnector

4.8.9-0008-LTPL-S-M-19



Call year:
2019

Location of the Action:
Lithuania, Poland

Implementation schedule:
July 2019 to April 2023

Maximum EU contribution:
€10,289,750

Total eligible costs:
€20,579,500

Percentage of EU support:
50%

Beneficiaries:
LITGRID AB (Lithuania)
https://www.litgrid.eu

Polskie Sieci Elektroenergetyczne S.A. (Poland)
https://www.pse.pl

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.8.9

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the implementation of the Project of Common Interest (PCI) 4.8. “Integration and synchronisation of the Baltic States’ electricity system with the European Network”. The Action is part of the Baltic Synchronisation Project Phase II, which includes the construction of a new submarine HDVC link between Lithuania and Poland (Harmony link).

The Action's scope is the selection of a route for the Harmony link, seabed survey of the route, tasks related to territorial planning and environmental assessments as applicable as well as the preparation of technical and tender specifications for the design and construction phase.

Once the Action is completed, the construction phase of the Harmony link will be launched.

Implementation of Baltic Synchronisation Project Phase II

4.8.10-0005-LVEE-W-M-20

Call year:
2020

Location of the Action:
Estonia, Latvia, Lithuania, Poland

Implementation schedule:
October 2020 to December 2025

Maximum EU contribution:
€719,692,500

Total eligible costs:
€959,590,000

Percentage of EU support:
75%

Beneficiaries:
Polskie Sieci Elektroenergetyczne S.A. (Poland)
https://www.pse.pl/web/pse-eng

Elering AS (Estonia)
https://elering.ee/en

LITGRID AB (Lithuania)
https://www.litgrid.eu/

Augstsprieguma tikls AS (Latvia)
https://www.ast.lv/en

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.8.10, 4.8.18, 4.8.20, 4.8.21, 4.8.22, 4.8.23

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action contributes to the implementation of the Synchronisation Project Phase II. It follows Phase I, which aims to strengthen the local grids of the three Baltic States through the reconstruction and reinforcement of its infrastructure. It implements 6 PCIs of the Cluster 4.8 Integration and synchronisation of the Baltic States' electricity system with the European network, namely 4.8.10; 4.8.18, 4.8.20; 4.8.21; 4.8.22 and 4.8.23.

The Action's scope covers:

- the launch and completion of the procurement, design, manufacturing and construction of the new submarine HVDC (High Voltage Direct Current) interconnector between Lithuania and Poland (Harmony Link);
- the design, installation and commissioning of six synchronous condensers in Latvia, Estonia and Lithuania (two per country);
- the procurement, construction of one and modernisation of three new or existing OHLs (Over Head Lines) in Poland as applicable.

Once the Action is completed and subject to the completion of the rest of the Baltic Synchronisation project, Lithuania, Latvia and Estonia will be ready to operate in synchronous mode with the Central European Network (CEN) and achieve a fully functioning and connected internal energy market increasing energy security in the Baltic States.

Call year:
2016

Location of the Action:
Estonia, Latvia, Lithuania

Implementation schedule:
April 2016 to August 2017

Maximum EU contribution:
€105,000

Beneficiaries:
LITGRID AB (Lithuania)
http://www.litgrid.eu

AS “Augstsprieguma tīkls” (Latvia)
http://www.ast.lv

Elering AS (Estonia)
http://www.elering.ee

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.9

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Study of Isolated Operation of Baltic Power System

4.9-0014-LTLV-S-M-16

The Action was part of the Project of Common Interest (PCI) 4.9. "Various aspects of the integration of the Baltic States’ electricity network into the continental European Network, including their synchronous operation".

The Study which determined if the Baltic States power system is capable of operating in isolated mode was carried out under the Action. It covered:

a. Data collection, description of scenarios, creation of common model
b. Steady state and transient stability analysis
c. Set up of the technical requirements and
d. Final report and stakeholder communication in the form of a press release and stakeholder workshop

The deliverable was the Final study report covering the analysis of continental Europe's or the Nordic Network for synchronous zone requirements for island operation, including guidelines and a timeline for performing the Test. The study provided the basis on which to prepare for the Test; the Test itself, however, was not within the Action's scope.

Call year:
2017

Location of the Action:
Estonia, Latvia, Lithuania, Poland

Implementation schedule:
December 2017 to July 2018

Maximum EU contribution:
€105,000

Beneficiaries:
LITGRID AB (Lithuania)
http://www.litgrid.eu

AS “Augstsprieguma tīkls” (Latvia)
http://www.ast.lv

ELERING AS (Estonia)
http://www.elering.ee

Polskie Sieci Elektroenergetyczne S.A (Poland)
http://www.pse.pl

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.9

Executive summary:
Executive Summary available here.

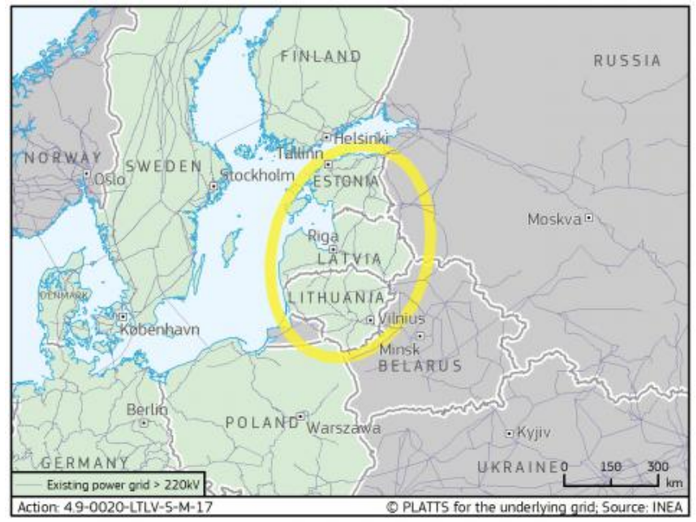
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Study on Dynamic behavior of synchronously interconnected Baltic States and Continental European electricity network

4.9-0020-LTLV-S-M-17



The Action contributed to the implementation of the Project of Common Interest (PCI)4.9 "Various aspects of the integration of the Baltic States' electricity network into the Continental European network, including their synchronous operation".

The Action's goal was to carry out the dynamic study to determine the feasibility of the extension of the Continental European synchronous zone in terms of stability phenomena facilitating the Baltic States' system synchronization process.

The Action covered:

- data collection, description of scenarios, creation of the steady state analysis;
- transient and small signal stability analysis and
- preparation of final study report and stakeholder communication measures.

Upon completion, the feasibility of the extension of Continental European synchronous zone in terms of stability phenomena have been determined.

Developing the 3rd AC interconnection Finland-Sweden

4.10.1-0016-FISE-S-M-18

The Action contributes to the implementation of the Projects of Common Interest (PCIs) 4.10.1 and 4.10.2, which belong to cluster 4.10 Finland-Sweden [currently known as "Third interconnection Finland-Sweden"]. It aims to construct a third AC 400 kV, approx. 235 km overhead line between northern Finland and northern Sweden as well as 400 kV, approx. 155 km overhead internal line between Keminmaa and Pyhänselkä in Finland.

The Action's aim is to carry out environmental impact assessments (EIAs), permitting and technical design for transmission lines, series compensation stations and substations in Sweden and Finland.

Once the Action is completed, the preparation of the tender for the PCIs construction works will be launched.

Call year:
2018

Location of the Action:
Finland, Sweden

Implementation schedule:
June 2018 to December 2023

Maximum EU contribution:
€4,325,000

Total eligible costs:
€8,650,000

Percentage of EU support:
50%

Beneficiaries:
Fingrid Oyj (Finland)
https://www.fingrid.fi/en/

Svenska kraftnät (Sweden)
https://www.svk.se/

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in electricity

Energy sector:
Electricity

Project(s) of Common Interest:
4.10.1, 4.10.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

5.

North-South gas interconnections in Western Europe

Call year:
2016

Location of the Action:
Ireland, United Kingdom

Implementation schedule:
May 2017 to November 2018

Maximum EU contribution:
€571,293

Beneficiaries:
Gas Networks Ireland (Ireland)
http://www.gasnetworks.ie

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.1.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Physical reverse flow at Moffat interconnection point (IE/UK)

5.1.1-0005-UKIE-S-M-16

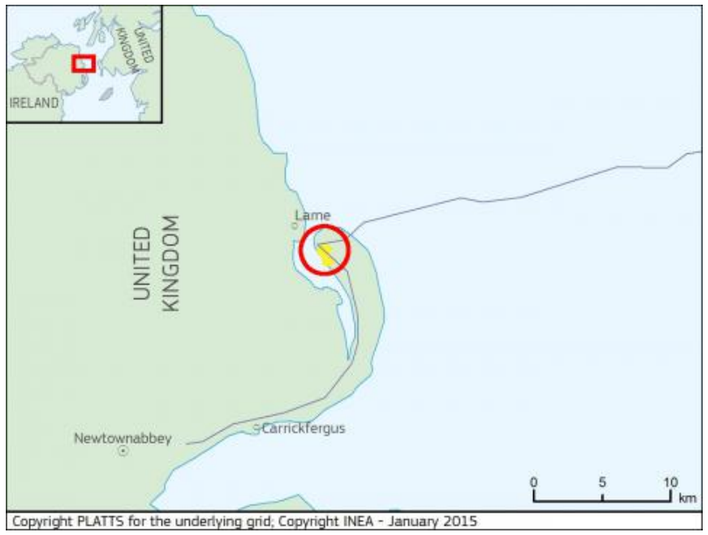
The Action contributed to the implementation of Project of Common Interest (PCI) 5.1.1 "Physical reverse flow at Moffat interconnection point (IE/UK)", which aims to allow reverse flow of gas between Ireland and the UK, by building a compressor station in Ireland and deodorisation facilities at Moffat in Scotland, UK. This would enable bidirectional flow of gas from Great Britain to Ireland and for the first time from supply sources in Ireland to Great Britain.

The objective of the Action was a comprehensive multi-disciplinary study (including Pipeline Routing & Environmental screening, Networks Analysis Modelling, Conceptual Engineering and Design, Preliminary Planning Stakeholder consultations and Financial Viability analysis), which has assessed all aspects of the proposed project to facilitate physical reverse flow between Scotland (Moffat) and Ireland.

The Action is the next logical step in the PCI development and it represents a significant enabler for the development of the Islandmagee Underground Gas Storage (UGS) facility in Northern Ireland (UK) (PCI 5.1.3).

Islandmagee Gas Storage Facility

5.1.3-0035-UKUK-S-M-14



Call year:
2014

Location of the Action:
United Kingdom

Implementation schedule:
August 2014 to January 2016

Maximum EU contribution:
€2,500,000

Beneficiaries:
InfraStrata plc (United Kingdom)
http://www.infrastrata.co.uk/

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.1.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of the Project of Common Interest (PCI) 5.1.3 Development of the Islandmagee Underground Gas Storage (UGS) facility at Larne (Northern Ireland), which aims to improve the security of supply and increase the amount of flexibility available in the gas markets of Great Britain, Northern Ireland and the Republic of Ireland. It also enables greater interconnectivity across these three neighboring markets, while supporting the achievement of national renewable and carbon reduction targets. The PCI concerns the development of a salt cavity gas storage facility located in Larne, UK and will provide a working gas volume of 500 million cubic meters (mcm) and allow for a withdrawal capacity of 22 mcm per day and injection capacity of 12 mcm per day.

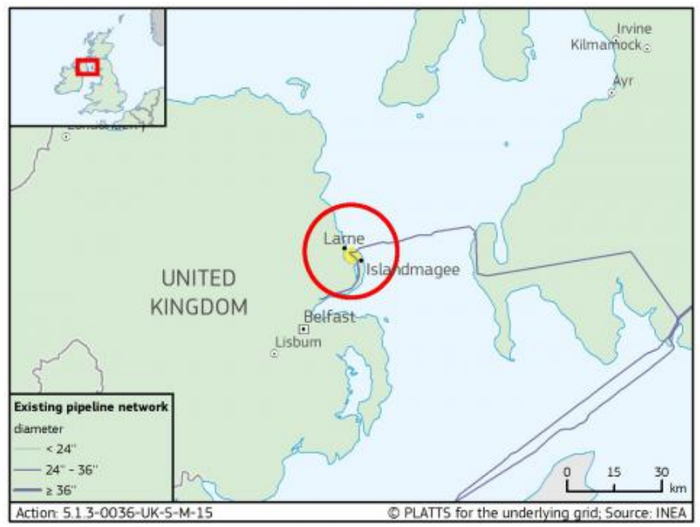
The goal of the Action was to obtain salt core samples and related data to confirm the feasibility of the Permian salt layer for the creation of underground salt caverns and the delivery of an updated basis of design for the surface facilities.

The outcome of the Action has confirmed the feasibility of this development of an underground gas storage facility in salt caverns and confirmed the economic viability of the project.

Action Website:
http://www.islandmageestorage.com/

Islandmagee Gas Storage Facility – FEED and In situ Downhole Testing

5.1.3-0036-UK-S-M-15



Call year:
2015

Location of the Action:
United Kingdom

Implementation schedule:
July 2016 to December 2018

Maximum EU contribution:
€2,909,000

Beneficiaries:
InfraStrata plc (United Kingdom)
http://www.infrastrata.co.uk

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.1.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The current Action was part of PCI 5.1.3 Development of the Islandmagee Underground Gas Storage (UGS) facility at Larne (Northern Ireland), which aims to improve the security of supply and increase the amount of flexibility available in the gas markets in Great Britain, Northern Ireland and the Republic of Ireland and enable greater interconnectivity across these three neighboring markets, whilst supporting the achievement of national renewable and carbon reduction targets. The PCI concerns the development of a salt cavity gas storage facility located in Larne (UK) and will provide a working gas volume of 500 million cubic meters (MCM) and allow for a withdrawal capacity of 22 MCM/day and an injection capacity of 12 MCM/day.

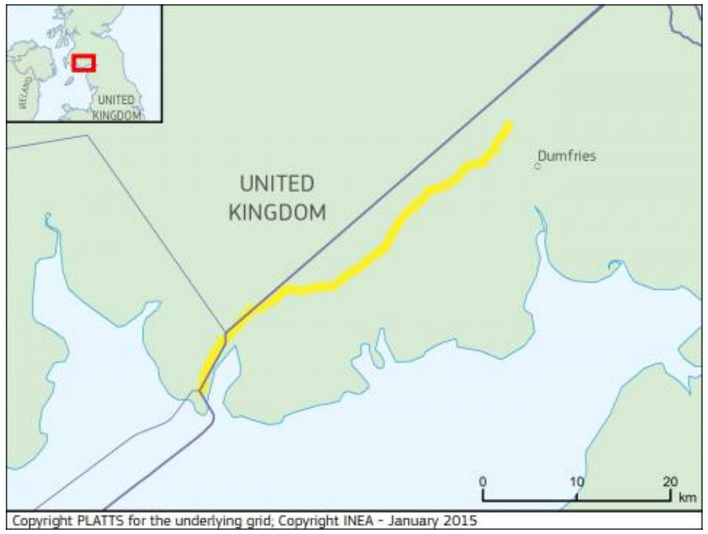
The goal of this Action was to perform the Front End Engineering and Design (FEED) study for the Islandmagee Storage Facility and carry out the in situ downhole testing to determine the stress state of the Permian salt.

As a result, the FEED study has identified technical requirements and design parameters for the project and greater certainty on the main project costs and key project risks.

Action Website:
http://www.islandmageestorage.com/

PCI Twinning of Southwest Scotland onshore System between Cluden & Brighouse Bay (UK)

5.2-0042-UK-P-M-14



Call year:
2014

Location of the Action:
United Kingdom

Implementation schedule:
August 2014 to November 2018

Maximum EU contribution:
€33,764,185

Beneficiaries:
GNI (UK) Limited (United Kingdom)
http://www.gasnetworks.ie

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action has implemented the Project of Common Interest (PCI) 5.2 "Twinning of Southwest Scotland onshore System between Cluden and Brighouse Bay". It involved the construction of the remaining 50 km system of transmission pipeline, with a 914 mm diameter, that will operate as a high pressure transmission pipeline and transport an additional quantity of 1.1 bcm/year of natural gas to Ireland.

The Action addressed the current pressure restriction in the onshore system and completed a dual pipeline system between Ireland and the UK. It has also removed security of supply concerns, thus increased the operational pressures by around 20% and gas capacity by around 10% in the network. Other activities associated with the Action's implementation included environmental studies, material procurement and construction - leading to the commissioning of the pipeline and the successful completion of the Action. While for the 50 km section of the pipeline there are valid planning consents, the local deviation of 7 km at Dumfries has been subject to the consent of the competent environmental authorities.

The completion of the Action has, as a result, reduced compressor fuel gas usage and increased pipeline storage and technical capacity, bringing about environmental benefits through a reduction in greenhouse gas emissions.

Engineering studies (basic and detailed design) for the development of the PCI - 3rd Interconnection between Portugal and Spain

5.4-0001-PT-S-M-15

Call year:
2015

Location of the Action:
Portugal

Implementation schedule:
July 2015 to December 2017

Maximum EU contribution:
€97,359

Beneficiaries:
REN-Gasodutos, S.A. (Portugal)
http://www.ren.pt/

Status:
Terminated

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action "Engineering studies (basic and detailed design) for the development of the PCI - 3rd Interconnection between Portugal and Spain" was part of the PCI 5.4 "3rd interconnection point between Portugal and Spain", which aims to connect both gas systems between Celorico da Beira (Portugal) and Zamora (Spain).

The Action relates to the first phase of the 3rd Interconnection point between Portugal and Spain and the related auxiliary installations with a total estimated length of 162 km in Portuguese territory.

The scope of this Action included technical and environmental studies necessary to obtain the project permit and to develop the construction of the Celorico-Vale de Frades pipeline.

Conceptual and FEED studies (French part of the Midcat project)

Call year:
2015

Location of the Action:
France

Implementation schedule:
January 2016 to September 2019

Maximum EU contribution:
€1,941,662

Beneficiaries:
Terega (France)
https://www.terega.fr/en/

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.5

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

5.5-0048-FR-S-M-15

The current Action was part of the Project of Common Interest (PCI) 5.5 “Eastern Axis Spain-France interconnection point between Iberian Peninsula and France at Le Perthus [currently known as Midcat]", aiming to interconnect Spain and France gas networks through the Eastern Pyrenees.

The goal of this Action was to perform the conceptual and FEED studies as well as the public consultation for the implementation of the first phase of the project on the French side. This first phase of the Midcat project (which is known as STEP) corresponds in France to the connection between the Spanish gas system at the border and the compressor station of Barbaira.

The expected outcome of the Action was to confirm the feasibility of the STEP project in France from a technical, planning and financial point of view. The Action was terminated due to the non-continuation of the implementation of STEP and its activities were only partially implemented. The conceptual studies and the public consultation were carried out, whereas the FEED studies were not completed.

Engineering studies of Midcat project

Call year:
2015

Location of the Action:
Spain

Implementation schedule:
January 2016 to December 2016

Maximum EU contribution:
€402,333

Beneficiaries:
Enagás Transporte S.A.U. (Spain)
http://www.enagas.es/portal/site/enagas

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.5

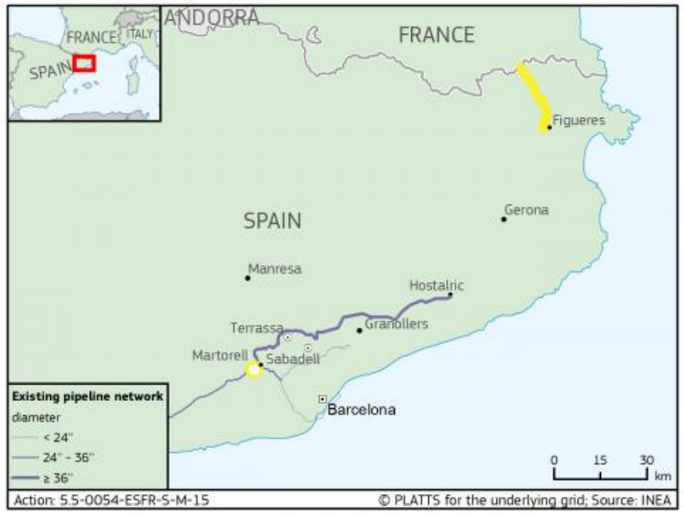
Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

5.5-0054-ESFR-S-M-15



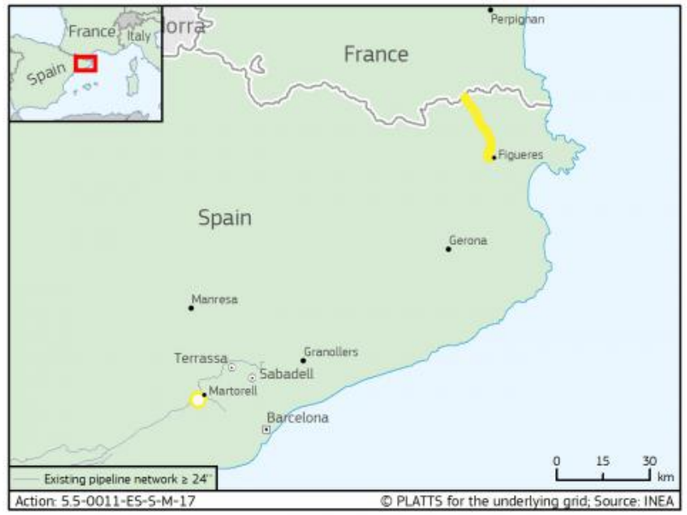
This Action was part of the Project of Common Interest (PCI) 5.5 "Eastern Axis Spain-France interconnection point between Iberian Peninsula and France at Le Perthus [currently known as Midcat]" and aims to interconnect Spain and France gas networks through the Eastern Pyrenees. The PCI will have an approximate length of 180 km, a maximum capacity of 80 GWh/d in the direction France to Spain and 230 GWh/d in the direction Spain to France and a maximum operating pressure of 80 bar(g). The pipeline section between Figueras to the French border will have an approximate length of 28 km.

The goal of this Action was to carry out the engineering studies of Martorell compressor station and the engineering studies of the pipeline from Figueras to the French border, both associated to the implementation of the Midcat project on the Spanish side.

The outcome of this Action allows continuing with the next steps in the PCI implementation on the Spanish side, which are the procurement, the permitting and the construction of both infrastructures.

Studies for permit granting process of STEP (MIDCAT)

5.5-0011-ES-S-M-17



Call year:
2017

Location of the Action:
Spain

Implementation schedule:
February 2018 to December 2019

Maximum EU contribution:
€174,864

Beneficiaries:
Enagás Transporte S.A.U. (Spain)
http://www.enagas.es

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.5

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

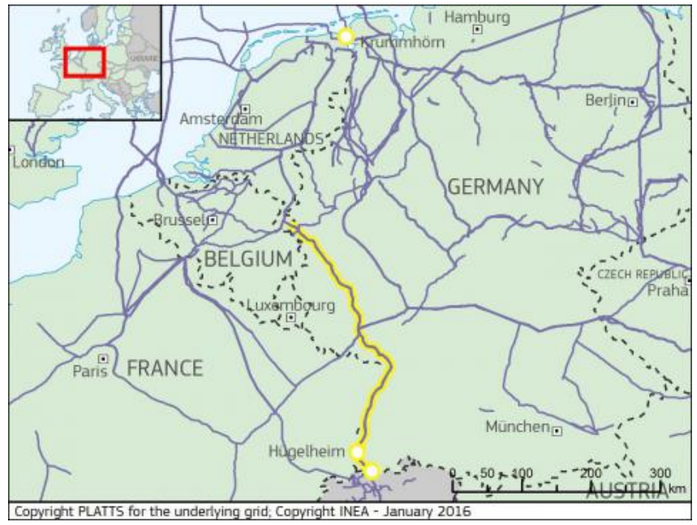
European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributed to the implementation of the Project of Common Interest (PCI) 5.5 Eastern Axis Spain-France interconnection point between Iberian Peninsula and France at Le Perthus [currently known as Midcat], which aims to interconnect Spain and France gas networks through the Eastern Pyrenees, and in particular to its first phase (South Transit East Pyrenees project, currently known as "STEP").

The objective of this Action was to carry out the studies required for the permit granting process of the pipeline from Figueras to the French border and the Martorell compressor station on the Spanish side of STEP and included a report on the outcome of the public consultation and the building permit application for both infrastructures. The Action was only partially implemented. It resulted in the completion and approval of the concept of public participation, as well as the consultation for the Environmental Impact Study (EIS). The report on the outcome of the public consultation and the authorisation request (building permit application) were not completed.

Reverse Flow TENP - Studies

5.10-0010-DE-S-M-15



Call year:
2015

Location of the Action:
Germany

Implementation schedule:
April 2015 to November 2017

Maximum EU contribution:
€440,384

Beneficiaries:
Fluxys TENP GmbH (Germany)
http://www.fluxys.com/

Trans Europa Naturgas Pipeline GmbH & Co. KG (Germany)
http://www.fluxys.com/

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.10

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action “Reverse Flow on TENP – Studies” was part of the Project of Common Interest (PCI) 5.10 "Reverse flow interconnection on TENP pipeline in Germany", which aims to design and engineer the reversal of the TENP pipeline to transport gas from Switzerland to Germany.

The scope of this Action included the construction of a test deodorisation facility in Krummhörn and included the technical and engineering studies aimed at providing input for the tender for works for the reversal of Hügelheim compressor station and the basic design for an industrial scaled deodorisation plant in Schwörstadt region.

The Action aimed to simulate and assess under what operative conditions the gas flow from North to South could be reversed.

Reverse Flow on TENP – Works

5.10-0031-DE-W-M-15

Call year:
2015

Location of the Action:
Germany

Implementation schedule:
July 2016 to October 2020

Maximum EU contribution:
€8,665,000

Total eligible costs:
€17,330,000

Percentage of EU support:
50%

Beneficiaries:
Fluxys TENP GmbH (Germany)
http://www.fluxys.com/

Trans Europa Naturgas Pipeline GmbH & Co. KG (Germany)
http://www.fluxys.com/

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.10

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

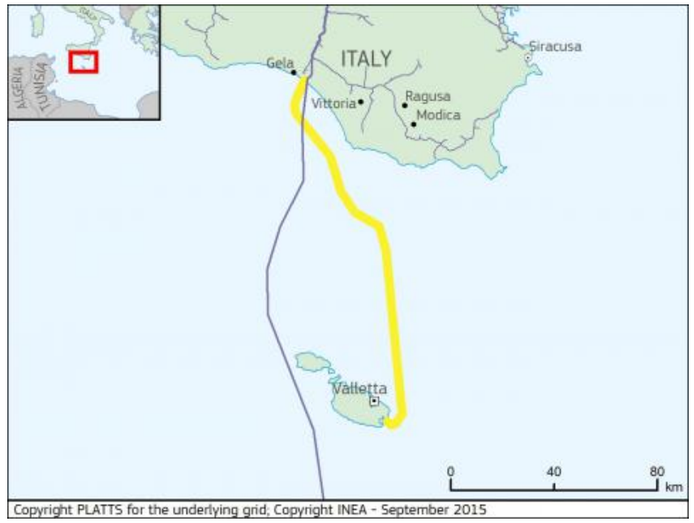
The Action “Reverse Flow on TENP – Works” implements the Project of Common Interest (PCI) 5.10 "Reverse flow interconnection on TENP pipeline in Germany", which aims to design and engineer the reversal of the TENP pipeline to transport gas from Switzerland to Germany.

The Action covers the procurement and execution of works necessary to enable the creation of 10 GWh/h of entry capacity at the cross-border interconnection point Wallbach towards the Virtual Trading Point (VTP) of the market area NetConnect Germany (NCG). The scope of this Action includes two Activities: the TENP reversal, which aims to add a reverse flow functionality at the compressor station of Hügelheim, and the construction of an innovative industrial-scale deodorisation facility in the district of Freiburg in order to remove the odorant in the gas.

The outcome of the Action will allow importing gas from Italy/France via Switzerland into Germany.

Route identification study including conceptual design and preparatory activities for the permitting process for a gas pipeline connection between Malta and Sicily

5.19-0011-MTIT-S-M-15



Call year:
2015

Location of the Action:
Italy, Malta

Implementation schedule:
July 2015 to June 2017

Maximum EU contribution:
€352,848

Beneficiaries:
Ministry for Energy and Health (Government of Malta) (Malta)
https://www.gov.mt/

Status:
Closed

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.19

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of the Project of Common Interest (PCI) 5.19 "Connection of Malta to the European gas network (gas pipeline with Italy at Gela and Floating LNG Storage and Regasification Unit (FSRU))" and relates to a gas pipeline between Gela (Sicily) to Delimara (Malta), of approx. 155 km, DN 543 mm, estimated capacity 2 bcm/y, and the related auxiliary installations. The primary aim is to enable gas flows from Italy to Malta, thus ending Malta’s isolation from the European gas network.

The scope of this Action entailed the identification of the optimal 1.2 km wide pipeline route corridor through a detailed desktop Route Identification Study, including the conceptual design of the pipeline and related infrastructure and preparatory activities for the commencement of the Italian and Maltese permitting processes.

The completion of the Action allowed commencing with the pre-application permitting procedures and the preparation of tender specifications for conducting future studies.

Call year:
2017

Location of the Action:
Malta

Implementation schedule:
November 2017 to November 2021

Maximum EU contribution:
€3,680,000

Total eligible costs:
€7,360,000

Percentage of EU support:
50%

Beneficiaries:
Republic of Malta (Maltese State) (Malta)
https://www.gov.mt

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Western Europe

Energy sector:
Gas

Project(s) of Common Interest:
5.19

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Studies for Malta-Italy Gas Interconnection: ESIA, marine survey, FEED, EPC tender preparation & financial engineering

5.19-0006-ITMT-S-M-17

The Action contributes to the implementation of the Project of Common Interest (PCI) 5.19 "Connection of Malta to the European gas network (gas pipeline with Italy at Gela and Floating LNG Storage and Regasification Unit (FSRU))" and relates to a gas pipeline between Gela (Sicily) to Delimara (Malta), of approx. 159 km (151 km offshore and 8 km onshore) in length, a diameter of 22" (DN 560), with a capacity 2 bcm/y, and the related auxiliary installations. The primary aim is to enable gas flows from Italy to Malta, thus ending Malta's isolation from the European gas network.

The scope of this Action is to conduct the permitting studies for the gas pipeline between Gela (Sicily) to Delimara (Malta). This includes the Environmental and Social Impact Assessment (ESIA) in Malta and Italy, a Preliminary Marine Route Survey (PMRS) of the entire offshore route and related post-survey studies, the Front-End Engineering Design study (FEED) as well as the preparation for an Engineering, Procurement and Construction (EPC) contract and the preparation and obtainment of the CBCA decision.

The completion of this Action will contribute to allow for the Final Investment Decision (FID) and the launch of the procurement procedure for the award of an EPC contract.

6.

North-South gas interconnections in Central Eastern and South Eastern Europe

Call year:
2014

Location of the Action:
Czech Republic, Poland

Implementation schedule:
September 2014 to October 2017

Maximum EU contribution:
€1,360,868

Beneficiaries:
NET4GAS, s.r.o. (Czech Republic)
http://www.net4gas.cz

Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.1.1

Executive summary:
Executive Summary available here.

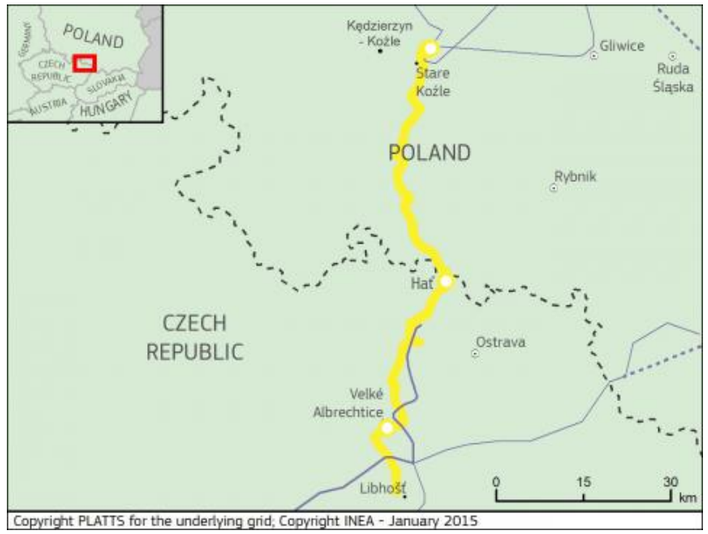
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Preparatory studies for the Poland-Czech Republic interconnection [known as Stork II] between Libhošť (CZ)-Hať (CZ-PL) - Kędzierzyn (PL)

6.1.1-0054-CZPL-S-M-14



The Action was part of preparatory activities for the implementation of Project of Common Interest (PCI) 6.1.1 Poland-Czech Republic Interconnection (Stork II). The scope covered pre-investment activities for the Poland-Czech Republic interconnector, i.e. the Libhošť (CZ) – Hať (CZ-PL) – Kędzierzyn (PL) pipeline (52 km on the Czech side and 55 km on the Polish side) with its auxiliary installations and the Kędzierzyn compressor station on the Polish side. The expected transmission capacity of the interconnector is around 13.7 mcm/day in the direction from PL to CZ and around 19.6 mcm/day in the reverse direction (Stage I).

On the Czech side, the activities covered preparation of the building permit documentation for of the Libhošť – Hať pipeline, for tendering a general contractor and for the purchase of material. On the Polish side, the activities included obtaining location decisions, environmental consent, performing basic and detailed design and acquiring building permits for the Hať – Kędzierzyn pipeline and its auxiliary installations, as well as obtaining of location decision, performing FEED and basic design and acquiring building permit for the Kędzierzyn compressor station.

The completed Action enables the launch of the construction phase of the Poland-Czech Republic gas interconnector.

Design works for upgrade of CS Břeclav

6.1.12-0010-CZ-S-M-17

Call year:
2017

Location of the Action:
Czech Republic

Implementation schedule:
January 2018 to December 2019

Maximum EU contribution:
€268,750

Total eligible costs:
€537,500

Percentage of EU support:
50%

Beneficiaries:
NET4GAS, s.r.o. (Czech Republic)
https://www.net4gas.cz/en/home/

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

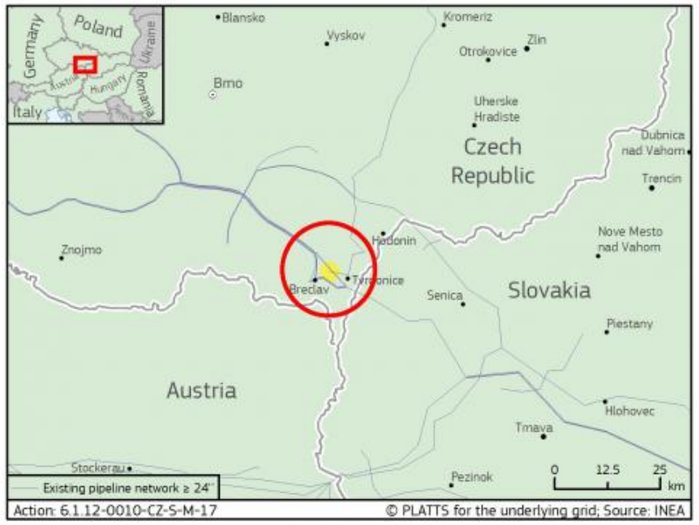
Energy sector:
Gas

Project(s) of Common Interest:
6.1.12

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/



This Action is part of the PCI 6.1.12 "Tvrdonice-Libhošť pipeline, including upgrade of CS Břeclav (CZ)", which aims at the construction of a new onshore pipeline Tvrdonice - Libhošť and the upgrading of the Břeclav compressor station in the Czech Republic. This PCI is part of the cluster 6.1, consisting of 3 PCIs that address the construction of the Czech – Polish natural gas interconnection (known as STORK II) and reinforcements of the related infrastructure in western Poland.

The scope of the current Action covers the preparation of a set of documents for upgrading the existing compressor station in Břeclav (CZ) with an additional compression power. It aims at preparing the feasibility study and drawing up the basic and detailed design for the compressor station. This additional compression power will be fully dedicated to the Northern Moravian region and the CZ-PL gas interconnection (STORK II), allowing operating pressure at the cross-border point CZ-PL and PL-CZ (both directions).

This Action is complementary to CEF Action 6.1.1-0054-CZPL-S-M-14 (Preparatory activities for the Poland-Czech Republic interconnection - STORK II). The completion of this Action will significantly contribute to the implementation of the PCI 6.1.12 and will allow to obtain a building permit and proceed with the construction of the PCI.

Action Website:
https://www.net4gas.cz/en/home/

Preparatory studies and engineering works for the Poland - Slovakia Gas Interconnection

6.2.1-0065-PLSK-S-M-14

Call year:
2014

Location of the Action:
Poland, Slovakia

Implementation schedule:
August 2014 to April 2019

Maximum EU contribution:
€2,828,362

Beneficiaries:
Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

eustream, a.s. (Slovakia)
http://www.eustream.sk

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.2.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of preparatory activities for the Project of Common Interest (PCI) 6.2.1 Poland-Slovakia interconnection, which belongs to the cluster 6.2 Poland-Slovakia interconnection and related internal reinforcements in Eastern Poland. The Action covered pre-investment activities for the Poland-Slovakia interconnector, with a length of approx. 164 km and an expected transmission capacity of 12.9 mcm/day in the direction PL to SK and 15.6 mcm/day in the opposite direction.

On the Polish side, the activities covered obtainment of the relevant environmental consents, location decisions, Front-End Engineering Design (FEED), building permits and preparation of a basic engineering design for the Strachocina – Łupkowska pipeline, metering station and the compressor station. On the Slovak side, the Action entailed preparation of spatial planning design, obtaining of location permits and environmental consents, completion of basic and detailed engineering and obtaining building permits for the Slovak pipeline and for the modification of the Veľké Kapušany compressor station.

The Action completes preparatory procedures on both sides of the Poland-Slovakia gas interconnection and allows to proceed with the construction phase.

Construction works for the Poland – Slovakia Gas Interconnection

6.2.1-0019-SKPL-W-M-16

Call year:
2016

Location of the Action:
Poland, Slovakia

Implementation schedule:
January 2017 to May 2022

Maximum EU contribution:
€97,280,256

Total eligible costs:
€243,200,640

Percentage of EU support:
40%

Beneficiaries:
Eustream, a.s. (Slovakia)
http://www.eustream.sk

Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.2.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

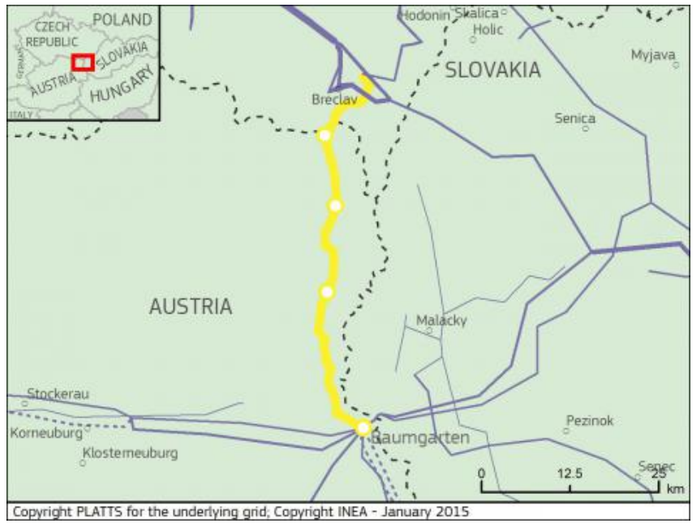
The Action implements the Project of Common Interest (PCI) 6.2.1 Poland-Slovakia interconnector, which aims to connect the natural gas transmission networks in both countries. The scope of the Action is the construction of the Slovak and Polish sections of the pipeline as well as the installation of the auxiliary infrastructure on both sides.

The range of tasks on the Slovak side covers the construction of a pipeline of approx. 103 km, DN 1000, with a maximum operating pressure (MOP) of 8.5 MPa from the PL-SK border to the metering station and 7.45 MPa from the metering station to the Veľké Kapušany compressor station. On the Slovak side, it also includes the modification of the compressor station in Veľké Kapušany. The Polish section covers the construction of a pipeline of approx. 59 km, DN 1000, MOP 8.4 MPa, from Łupkowska Pass (cross-border crossing point) to Strachocina as well as the construction of the gas node in Strachocina.

Once constructed, the total length of the pipeline will be approx. 165 km and the nominal transfer capacity will be up to 15.6 mcm/d in the direction from SK to PL and 12.9 mcm/d in the reverse direction. The Action will result in the first interconnection between the Polish and Slovak gas transmission systems being established.

Preparatory studies for the first bidirectional AT-CZ interconnection ('BACI')

6.4-0055-CZAT-S-M-14



Call year:
2014

Location of the Action:
Austria, Czech Republic

Implementation schedule:
October 2014 to December 2015

Maximum EU contribution:
€41,993

Beneficiaries:
NET4GAS, s.r.o. (Czech Republic)
http://www.net4gas.cz

GAS CONNECT AUSTRIA GmbH (Austria)
http://www.gasconnect.at

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of the Project of Common Interest (PCI) 6.4 Bidirectional Austria - Czech interconnection (BACI) between Baumgarten (AT)-Reinthal (CZ/AT)-Břeclav (CZ), which involves the construction of a new gas pipeline of approximately 61 km of length with a transmission capacity of around 18 mcm/day.

In particular, the activities of the Action included the establishment of a business plan, an assessment of market demand, a financial analysis, the performance of a cost-benefit analysis (CBA) and the preparation of a proposal for a cross-border cost allocation (CBCA) decision.

This Action, comprised of activities on both the Austrian and Czech sides, completed the preparatory stage necessary for the future joint investment request.

Call year:
2014

Location of the Action:
Croatia

Implementation schedule:
August 2014 to April 2017

Maximum EU contribution:
€4,758,382

Beneficiaries:
LNG Hrvatska d.o.o. (Croatia)
http://www.lng.hr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Studies for LNG terminal Krk: legal & financial advisory, FEED, main design, tender documentation for EPC, power supply system documentation

6.5.1-0037-HR-S-M-14

The Action was part of the preparatory activities for the implementation of the Project of Common Interest (PCI) 6.5.1, Liquefied Natural Gas (LNG) terminal in Krk island in Croatia. The LNG terminal will be developed in 3 stages: 1) floating terminal, covering the installation of infrastructure for a floating storage and regasification unit (FSRU), approx. send-out capacity of 2 bcm/year; 2) onshore terminal, covering the installation of infrastructure for the onshore processing and storage of the LNG, approx. send-out capacity of 3.5 bcm/year and 3) onshore terminal, covering the installation of infrastructure for the onshore processing and storage of the LNG, approx. maximum send-out capacity of 5 bcm/year.

The Action covered business, legal and financial advising, Front-end engineering design, main design of the onshore LNG terminal, studies on power supply. The Action delivered two sets of EPC tender documentation, one for the FSRU jetty and its utilities and another for the onshore LNG storage and process related infrastructure. Both tenders will be conducted at a later stage of the project development.

Call year:
2015

Location of the Action:
Croatia

Implementation schedule:
July 2015 to March 2016

Maximum EU contribution:
€514,994

Beneficiaries:
LNG Hrvatska d.o.o. (Croatia)
http://www.lng.hr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Field and laboratory investigation studies and preparation of reports

6.5.1-0026-HR-S-M-15

This Action was part of preparatory activities for the implementation of the Project of Common Interest (PCI) 6.5.1 LNG regasification vessel in Krk, which envisaged the construction of a first onshore LNG (liquefied natural gas) terminal on Krk island in Croatia. The final terminal was expected to have two 180,000 m3 LNG storage tanks and an approximate maximum send-out capacity of 6 bcm/year.

The Action consisted of a set of studies covering both onshore and offshore areas of the terminal. Both onshore and offshore studies focused on the geological, geotechnical, geophysical, seismological and archaeological aspects, whereas studies on the coastal part of the LNG terminal, in addition, included geodetic and hydrographic surveying.

The objective of the Action was to gather and assess data on the composition and the geological structure of the onshore LNG terminal foundation soil. The Action contributed to the design stage of the PCI 6.5.1 and provided important input for the onshore LNG terminal building permit.

Studies for the LNG terminal Krk FSRU solution

6.5.1-0014-HR-S-M-16

Call year:
2016

Location of the Action:
Croatia

Implementation schedule:
March 2017 to May 2018

Maximum EU contribution:
€747,000

Beneficiaries:
LNG Hrvatska d.o.o. (Croatia)
http://www.lng.hr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributed to the Project of Common Interest (PCI) 6.5.1, which consists of the phased development of an LNG terminal on the island of Krk in Croatia.

The Action activities covered the preparation of a set of multi-disciplinary studies, which assessed all remaining aspects of the project in order to reach the Final Investment Decision (FID) and to start the construction of the floating LNG terminal (1st phase of PCI).

As a result of the Action, the requests for the development consent, the location and construction permits were submitted to the competent authorities. The Action allowed for the adoption of LNG terminal services tariffs and initiated the LNG terminal Rules of Operation. The deliverables of the Action were Environmental Impact Assessment, Front-End Engineering Design, Conceptual and Main designs completed for the floating unit's jetty, the connecting pipeline and related infrastructure as well as documents for the Floating Storage Regasification Unit (FSRU) procurement. As a result, the Action enabled contract with the selected FSRU contractor to be signed.

The Action was complementary to the studies carried out under other CEF Actions (6.5.1-0037-HR-S-M-14 and 6.5.1-0026-HR-S-M-15) and preceded the construction of the FSRU terminal, also financed by CEF under Action 6.5.1-0018-HR-W-M-16.

Construction of LNG terminal Krk

6.5.1-0018-HR-W-M-16

Call year:
2016

Location of the Action:
Croatia

Implementation schedule:
February 2018 to December 2020

Maximum EU contribution:
€101,400,000

Total eligible costs:
€220,004,340

Percentage of EU support:
46%

Beneficiaries:
LNG Hrvatska d.o.o. (Croatia)
http://www.lng.hr

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action implements the first phase of the Project of Common interest (PCI) 6.5.1 developing a Liquefied Natural Gas (LNG) terminal on the island of Krk in Croatia. The objective of the Action is to procure and put into operation a Floating Storage and Regasification Unit (FSRU) and to construct a dedicated jetty and a connecting pipeline with an approx. send-out capacity of 2 bcm/year. The investments will form an integrated facility to unload, store and regasify LNG and will allow for anchoring special purpose LNG vessels, refilling LNG into the tanks.

The planned activities include: construction of the jetty and auxiliary systems, construction of the connecting high-pressure (HP) gas pipeline and purchase and delivery of an FSRU.

The completion of the Action will enhance the diversification of natural gas supply for Central Eastern & South Eastern Europe, it will increase security of gas supply, improve competitiveness in the region and provide for a more effective integration of key infrastructure projects like in Central Eastern and South Eastern Europe into the European gas market. This Action represents the next step in the PCI development, following the preparatory studies carried out under other CEF-funded Actions (6.5.1-0037-HR-S-M-14, 6.5.1-0026-HR-S-M-15 and 6.5.1-0014-HR-S-M-16).

Construction works for the LNG Evacuation Gas Pipeline section Omišalj-Zlobin

6.5.1-0014-HR-W-M-17

Call year:
2017

Location of the Action:
Croatia

Implementation schedule:
February 2018 to December 2020

Maximum EU contribution:
€16,433,500

Total eligible costs:
€32,867,000

Percentage of EU support:
50%

Beneficiaries:
Plinacro d.o.o. (Croatia)
http://www.plinacro.hr

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributes to the implementation of the Project of Common Interest (PCI) 6.5.1 Phased development of a Liquefied Natural Gas (LNG) terminal in Krk. The Action represents the next step in the PCI development, following the preparatory studies (6.5.1-0037-HR-S-M-14, 6.5.1-0026-HR-S-M-15 and 6.5.1-0014-HR-S-M-16) and the LNG terminal construction works (6.5.1-0018-HR-W-M-16).

The Action covers the construction of the Omišalj – Zlobin gas pipeline, which will enable the transmission of re-gasified gas from the LNG terminal to the national gas transmission system. Upon construction, the pipeline will have a total approximate length of 18 km, with a diameter of DN 800 and a maximum operating pressure (MOP) of 100 bar. It will initially ensure a nominal gas transfer capacity up to 2.6 bcm/y, but will accommodate the capacity increase up to 3.5 bcm/y and 6.5 bcm/y with the development of further stages of PCI 6.5.1 Phased development of an LNG terminal in Krk and 6.5.2 Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica gas pipeline.

The completion of the Action will contribute to the enhancement of security of gas supply in the region and will increase competition in the regional gas market as an alternative source of gas will be available in South-Eastern and South-Central Europe.

Pre-investment phase for the project of the main LNG transit gas pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica

6.5.2-0015-HR-S-M-15

Call year:
2015

Location of the Action:
Croatia

Implementation schedule:
July 2015 to March 2019

Maximum EU contribution:
€1,216,424

Beneficiaries:
Plinacro d.o.o. (Croatia)
http://www.plinacro.hr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.5.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action was part of preparatory activities for the Project of Common Interest (PCI) 6.5.2, which concerns the construction of Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica pipeline located in Croatia. The total estimated length of the pipeline is 308 km. The existing Kozarac-Slobodnica section will be upgraded by constructing a parallel pipeline of DN800, max operating pressure of 75 bar and transmission capacity 6.5 bcm/year. The other sections will be built with DN1000, MOP 100 bar and a transmission capacity of 10 bcm/year. The realization of the pipeline is intrinsically linked to the implementation of the Krk LNG terminal (PCI 6.5.1), as the pipeline represents the main evacuation route for the re-gasified LNG to a number of countries in Central-Eastern and South-Eastern Europe.

The Action covered the feasibility study, market test, Cost-Benefit Analysis, business plan, preparation of documents for the Cross-border Cost Allocation decision and detailed design.

The Action was partly implemented. Drawing up of a detailed design for the gas pipeline section Kozarac-Slobodnica was not pursued, as the need for the capacity that justifies the upgrade of the Kozarac-Slobodnica gas pipeline is not justified in the next mid-term perspective. The deliverables of the Action allow starting the construction of the PCI 6.5.2.

Call year:
2015

Location of the Action:
Croatia

Implementation schedule:
July 2016 to February 2020

Maximum EU contribution:
€4,825,000

Total eligible costs:
€9,650,000

Percentage of EU support:
50%

Beneficiaries:
Plinacro d.o.o. (Croatia)
http://www.plinacro.hr/

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.6

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Interconnection Croatia - Slovenia (Bosiljevo-Karlovac-Lucko-Zabok-Rogatec (SI)) - Studies for Phase I

6.6-0046-HR-S-M-15

The Action is part of preparatory activities for the implementation of the Croatian part of the Project of Common Interest (PCI) 6.6 Interconnection Croatia-Slovenia (Bosiljevo-Karlovac-Lucko-Zabok-Rogatec (SI)), which aims at constructing a bidirectional natural gas transmission pipeline of approximately 144 km with a capacity of 165 GWh/day in both flow directions and three compressor stations. The scope of the Action is limited to Phase I elements, namely the Lucko-Zabok-Rogatec pipeline section of approximate length 69 km, DN 700 diameter and maximum operating pressure 75 bar and the two compressor stations (location to be confirmed).

The activities of the Action cover the preparation of the main and detailed design, functional specifications and basic documentation for the pipeline and the compressor stations. The Action also covers the preparation of the environmental impact assessment for the compressor stations.

The Action will result in the obtainment of the necessary location, environment and building permits, thereby allowing to proceed with the construction of the Phase I of the PCI.

Call year:
2015

Location of the Action:
Bulgaria

Implementation schedule:
January 2016 to October 2018

Maximum EU contribution:
€520,087

Beneficiaries:
Bulgartransgaz EAD (BTG) (Bulgaria)
https://www.bulgartransgaz.bg/en

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.8.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Preparatory activities in the frame of the PCI 6.8.2 Necessary rehabilitation, modernization and expansion of the Bulgarian transmission system

6.8.2-0055-BG-S-M-15

This Action contributed to the implementation of the Project of Common interest (PCI) 6.8.2 "Necessary rehabilitation, modernization and expansion of the Bulgarian transmission system", which aims at improving the transmission system's efficiency, reliability and flexibility, ensuring the necessary capacities. The project aims to adapt the existing gas infrastructure to the new market requirements and new realities, in the context of the infrastructure development plans in the region.

This Action consisted of preparatory and engineering activities for the rehabilitation and reinforcement of the Bulgarian gas transmission system. It was mainly focused on executing activities linked to the Northern semi-ring of the gas transmission system and the modernisation of three gas compressor stations (CSs), by means of integrating low emission gas turbine compressor units and in-line inspections of two pipeline sections. It clarified some detailed technical elements of the project and set-up a cost structure.

The results of this Action serve as a basis for completing the preparatory phase of the overall PCI. The outcomes will allow Bulgartransgaz EAD to obtain the necessary decisions and building permissions and to prepare the actual launch of the construction works for the pipeline section of the Northern semi-ring.

Preparatory activities for rehabilitation of the transmission system's section PF Valchi dol-VS Preselka

6.8.2-0026-BG-S-M-16

Call year:
2016

Location of the Action:
Bulgaria

Implementation schedule:
November 2016 to December 2018

Maximum EU contribution:
€15,898

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
https://bulgartransgaz.bg/en

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.8.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The current Action contributed to the implementation of Project of Common Interest (PCI) 6.8.2 "Necessary rehabilitation, modernization, and expansion of the Bulgarian transmission system", which aims at adapting the existing gas infrastructure on the territory of Bulgaria to the new market requirements and new realities in the context of the infrastructure development plans in the region, as well as increasing its reliability and efficiency.

The Action was part of a series of preparatory activities necessary for the implementation of PCI 6.8.2. It was the next logical step in the PCI development and consisted of pre-investment (preparatory) operations before the start of the construction and installation work regarding the necessary replacement of the pipeline section Pigging Facility (PF) Valchi Dol - Valve Station (VS) Preselka. It also clarified detailed technical elements of the project, providing for a more accurate cost structure.

The outcomes of the current Action allowed Bulgartransgaz EAD to complete the pre-investment (preparatory) phase for this PCI and to prepare for the launch of the construction works.

Construction works for PCI 6.8.2 Rehabilitation, modernization and expansion of the Bulgarian transmission system-Phase2

6.8.2-0034-BG-W-M-18

Call year:
2018

Location of the Action:
Bulgaria

Implementation schedule:
January 2019 to June 2022

Maximum EU contribution:
€27,184,518

Total eligible costs:
€67,961,296

Percentage of EU support:
40%

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
https://bulgartransgaz.bg

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.8.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

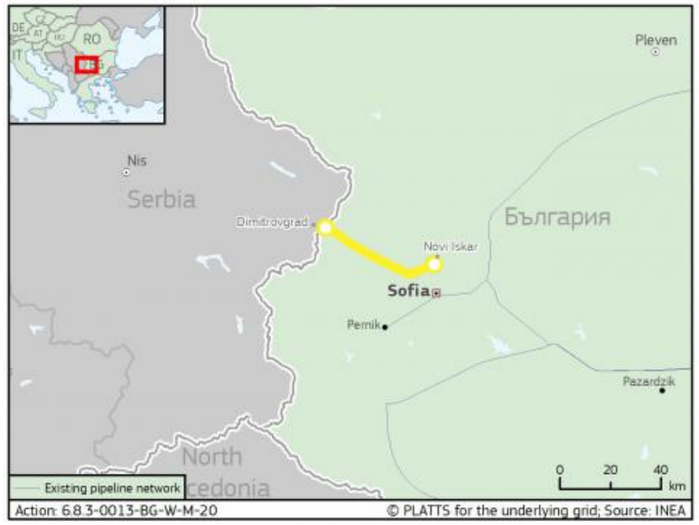
The Action contributes to the implementation of PCI 6.8.2 "Rehabilitation, modernization and expansion of the Bulgarian transmission system".

The objective of the Action is to execute the rehabilitation of the two sections of the Northern semi-ring of the Bulgarian gas transmission network to ensure secure and reliable gas transmission, to increase natural gas transmission capacity and to improve the conditions for injection and withdrawal of the Bulgarian underground gas storage facility. The Action covers the supply of materials and equipment and the rehabilitation of sections 'PIG Beglej - VA Dermantsi - VA Batultsi - VA Kalugerovo' of approximately 58 km length and 'PIG Valchi Dol - VA Preselka' of approximately 23 km length; each DN 700 with a maximum operating pressure of 5.4 MPa. It builds upon the results of actions 6.8.2-0055-BG-S-M-15 and 6.8.2-0026-BG-S-M-16, namely, the conclusions on the technical condition of the sections, the preparatory activities for obtaining building permits and for procurement of construction activities.

By implementing the Action, the rehabilitation of the two sections will be completed. This will provide technical possibilities for transporting additional natural gas quantities across the country and facilitating several interconnectors with neighboring countries.

Gas Interconnection Bulgaria-Serbia (IBS) - Construction works

6.8.3-0013-BG-W-M-20



Call year:
2020

Location of the Action:
Bulgaria

Implementation schedule:
October 2020 to August 2022

Maximum EU contribution:
€27,602,809

Total eligible costs:
€76,674,469

Percentage of EU support:
36%

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
https://bulgartransgaz.bg/en/

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.8.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributes to the implementation of the Project of Common Interest (PCI) 6.8.3 Gas Interconnection Bulgaria-Serbia [currently known as IBS], which aims at the construction of a gas pipeline, ensuring bi-directional interconnection of the gas transmission networks of the Republic of Bulgaria and the Republic of Serbia.

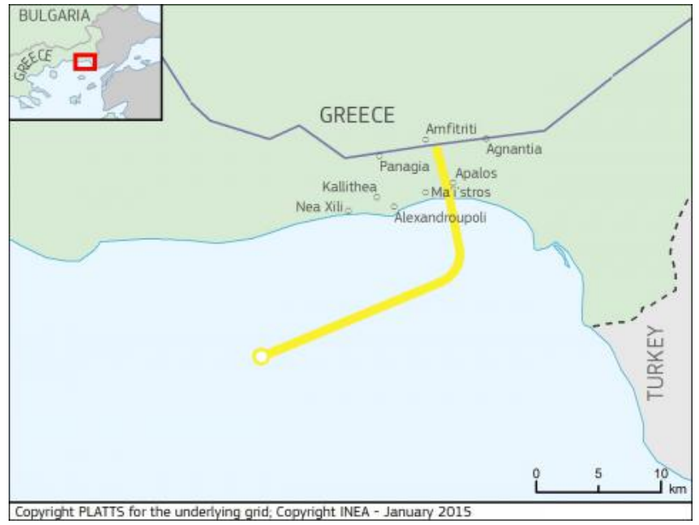
The main objective of the current Action is to build and commission the Bulgarian section of Gas Interconnection Bulgaria-Serbia. The total length of IBS on Bulgarian territory is approximately 62 km, from the town of Novi Iskar to the Bulgarian-Serbian border. Besides the gas pipeline network, the Action entails the construction of technological facilities, such as pigging facilities (PF), valve assemblies (VA), two automated gas-regulating stations (AGRS) at Slivnitsa and Dragoman as well as a gas metering station (GMS) at Kalotina. Following its construction, the gas interconnection will have an estimated throughput capacity of 1.8 bcm/y with a reverse flow capability.

As a result of the Action implementation, the new gas pipeline and technological facilities will be built and commissioned, increasing the security and diversification of gas supplies and routes and the interconnectivity of the gas transmission system in the Republic of Bulgaria.

Action Website:
https://bulgartransgaz.bg/en/pages/6-8-3-mezhdusistemna-gazova-vrazka-balgariya-sarbiya-ibs-191.html

Front End Engineering Design (FEED) & Preparation of the EPC/ITT dossier

6.9.1-0021-EL-S-M-14



Call year:
2014

Location of the Action:
Greece

Implementation schedule:
August 2014 to September 2017

Maximum EU contribution:
€592,419

Beneficiaries:
GASTRADE S.A. (Greece)
http://www.gastrade.gr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.9.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

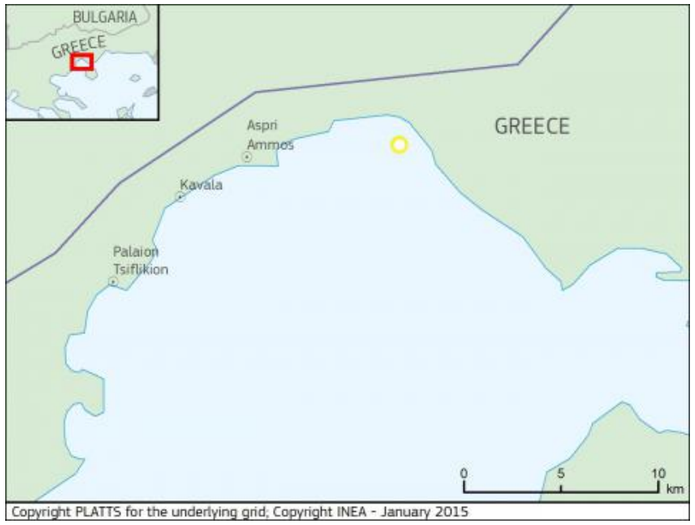
European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of the preparatory activities required for the implementation of the Project of Common Interest (PCI) 6.9.1 ''Independent Natural Gas System LNG Greece'', consisting of the construction of a new offshore LNG floating storage and regasification unit and a mooring and pipeline system, connecting the floating unit to the national natural gas transmission system in north-eastern Greece, offshore of the town of Alexandroupolis. The storage capacity on the floating unit is expected to be 170.000 m3 and the estimated maximum send-out capacity is 16.8 mcm/day.

This Action's deliverables included the Front-End Engineering Design (FEED), the Engineering, Procurement and Construction (EPC) and Invitation to Tender dossier (ITT). The FEED described all the main technological components of the infrastructure; it provided the specifications, developed the required material lists for all the core equipment and defined the main design and key operating principles for the system's development and estimated costs. Whereas finalised EPC and ITT allowed the beneficiary to proceed with engagement of a construction contractor and to purchase the long lead items.

Aegean LNG – Studies related to permitting procedure

6.9.2-0008-EL-S-M-14



Call year:
2014

Location of the Action:
Greece

Implementation schedule:
January 2015 to July 2015

Maximum EU contribution:
€0

Beneficiaries:
Public Gas Corporation of Greece (DEPA) S.A. (Greece)
http://www.depa.gr

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.9.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action was part of preparatory activities for the implementation of the Project of Common Interest (PCI) 6.9.2 Aegean LNG import terminal, which aimed to construct a new Aegean offshore Liquefied Natural Gas (LNG) Floating Storage and Regasification Unit (FSRU) in Greece of a send-out capacity of 3-5 bcm/year and approximately 150.000 m3 of storage capacity and a system of marine facilities such as a mooring terminal, ship-to-ship and ship-to-shore transfer system.

The activities included studies on safety, operation and maintenance of the FSRU, an investigation for the potential marine antiquities in the area of the future LNG infrastructure and a study on the environmental impact of dispersal of cold seawater returning after the LNG regasification process. The goal of the Action was to assess the functionality and different LNG supply chain models of progressively (from 25,000 m3 to 150,000 m3) increasing FSRU.

The Action was to lead to the next stage of the PCI's implementation, i.e. Front-End Engineering Design (FEED) and obtaining of environmental and installation permits. The Action was closed due to the development of the alternative project - LNG terminal in Northern Greece (Alexandroupolis LNG – PCI 6.9.1).

Preparation of the Basic Engineering Documentation for the Hungarian part of the Romania-Hungary-Austria transmission corridor

6.13.1-0043-HU-S-M-15

Call year:
2015

Location of the Action:
Hungary

Implementation schedule:
August 2016 to July 2017

Maximum EU contribution:
€640,126

Beneficiaries:
FGSZ Natural Gas Transmission Private Company Limited by Shares (Hungary)
http://www.fgsz.hu

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.13.1, 6.13.2, 6.13.3, 6.14

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributed to the implementation of the four Projects of Common Interest (PCIs): 6.13.1, 6.13.2, 6.13.3 and 6.14, that together aim to implement the Hungarian part of the Romanian-Hungarian-Austrian natural gas transmission corridor. PCI 6.13.1 concerns the construction of Városföld-Ercsi-Gyor pipeline (approx. 210 km, DN1000, PN100) and reinforcement of the existing Városföld compressor station (CS) with an additional power of 5.7 MW. PCI 6.13.2 concerns the construction of Ercsi-Százhalombatta pipeline (approx. 11 km, DN800, PN63). Merged PCIs 6.13.3 and 6.14 concern an upgrade of the Csanadpalota CS with an additional power of 13.5 MW. Cumulatively, the above investments will increase the annual bidirectional transmission capacity HU-RO up to 4.17 bcm and AT-HU up to 4.93 bcm.

The Action's activities covered the preparation of the basic engineering package for the above investments in Hungary, aiming to define their geographical location of the infrastructure and prepare the technical design documentation of the pipeline and the compressor stations.

The completed Action allows launching the preparation of the Environmental Impact Assessment for these PCIs.

Call year:
2015

Location of the Action:
Bulgaria

Implementation schedule:
July 2015 to April 2021

Maximum EU contribution:
€3,900,000

Total eligible costs:
€7,800,000

Percentage of EU support:
50%

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
http://www.bulgartransgaz.bg/en

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.20.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Conduct of 3D seismic surveys as a part of the Chiren UGS expansion project 6.20.2

6.20.2-0021-BG-S-M-15

The Action contributes to the implementation of the Project of Common Interest (PCI) 6.20.2 "Chiren UGS Expansion", the only gas storage on the territory of Bulgaria, with a projected working gas volume of between 720 MCM and 1000 MCM, projected maximum withdrawal capacity 10 MCM/day and projected injection capacity 10 MCM/day. The PCI aims at undertaking measures, such as performance of studies and subsequent works, for the staged gas storage capacity expansion to achieve the targeted technical parameters.

The 3D onshore seismic surveys to be carried out under this Action consist of geophysical and geological studies aiming at the characterisation of the Chiren gas reservoir. The current Action is the next required implementation step of the PCI, in order to fully perform the planned geological and geophysical studies.

The results of the complete set of studies will serve as a basis for defining the best option for the expansion of Chiren underground gas storage facility and subsequently the next steps of PCI implementation, such as the design and construction of above and subsurface facilities.

Call year:
2016

Location of the Action:
Bulgaria

Implementation schedule:
September 2016 to December 2017

Maximum EU contribution:
€0

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
https://www.bulgartransgaz.bg/en

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.20.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Implementation of a software package to model and determine the optimum operating regimes of the Chiren UGS expansion project

6.20.2-0011-BG-S-M-16

The Action contributes to the implementation of the Project of Common Interest (PCI) 6.20.2 "Chiren UGS Expansion (BG)", which aims at undertaking the necessary measures (performance of studies and subsequent works) for a staged capacity expansion in the existing Underground Gas Storage (UGS) facility of Chiren, in order to achieve a projected working gas volume of between 720 MCM and 1000 MCM, projected withdrawal capacity maximum 10 MCM/day and projected injection capacity 8-10 MCM/day.

The objective of the Action was the customisation, supply and installation of a software package (called Programme product for determining the optimum operating mode - PPDOOM) to model and determine the optimum operating regimes of Chiren UGS, in connection with its expansion.

However, the Action's implementation has not started until its completion date, as the Action has been negatively impacted by the delays incurred during the implementation of the "3D seismic survey study, part of the project for the expansion of Chiren UGS" 6.20.2". The Action has thus been closed.

Underground natural gas storage facilities in South Kavala (UGS) technical study

6.20.3-0016-EL-S-M-19

Call year:
2019

Location of the Action:
Greece

Implementation schedule:
October 2019 to March 2021

Maximum EU contribution:
€1,687,000

Total eligible costs:
€3,374,000

Percentage of EU support:
50%

Beneficiaries:
Hellenic Republic Asset Development Fund S.A. (Greece)
https://www.hradf.com/

Status:
Ongoing

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.20.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action is part of preparatory activities required for the implementation of the Project of Common Interest (PCI) 6.20.3 South Kavala Underground Storage (UGS) facility, which covers conversion of the depleted offshore natural gas field of South Kavala into the UGS that will be connected to the national natural gas system of Greece via pipeline. The approximate projected working gas volume of the UGS is 360 mcm, withdrawal capacity is about 4 mcm/day and its injection capacity is estimated at 5 mcm/day.

This Action includes activities related to existing data assessment, studies on the suitability of the infrastructure of the gas field to become an UGS, environmental and technical studies. The latter will define technology and equipment, provide for the basic engineering design, estimate the capital and operating expenses as well as assess the technical risks.

The objective of the Action is to review the existing data and conduct technical and environmental studies for conversion of the gas field to the UGS facility. The completed Action will allow for to the next step in the PCI development, namely launching the tender for the selection of a company to develop and operate the South Kavala UGS.

Studies for the gas transmission pipeline R15/1 Pince - Lendava - Kidričevo

6.23-0019-SI-S-M-14

Call year:
2014

Location of the Action:
Slovenia

Implementation schedule:
January 2015 to December 2017

Maximum EU contribution:
€344,500

Beneficiaries:
Plinovodi, Družba za upravljanje s prenosnim sistemom, d.o.o. (Slovenia)
http://www.plinovodi.si

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.23

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action was part of preparatory activities for the implementation of the Project of Common Interest (PCI) 6.23 PCI Hungary-Slovenia interconnection, which aims at the construction of a bidirectional gas pipeline connecting Hungary and Slovenia. It is expected that the pipeline will be approximately 113 km and it will ensure maximum transmission capacity of 3.4 mcm/day.

The Action's activities covered investments on the Slovenian side only, i.e. construction of a 71 km of the pipeline, construction and upgrade of compressor station, border metering and control station. The Action concerned the development of the National Spatial Plan (analysing and incorporating the pipeline's future layout and basic design), determining the exact location, functional, general technical and design characteristics of the interconnector. The Action also covered the preparation of the environmental impact report, describing the effects of the future interconnector and proposing ways to avoid and/or mitigate its negative effects.

The Action's outcome and deliverables will allow for the adoption of the Decree on the National Spatial Plan in Slovenia; the beneficiary will be able to apply for the environmental permit and to proceed with the detailed design study for the interconnector.

Call year:
2016

Location of the Action:
Hungary

Implementation schedule:
May 2017 to December 2018

Maximum EU contribution:
€0

Beneficiaries:
FGSZ Natural Gas Transmission Private Company Limited by Shares (Hungary)
http://www.fgsz.hu

Status:
Terminated

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.24.1, 6.24.4, 6.24.5, 6.24.6, 6.24.9

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Preparation of EIA and obtainment of the environmental permits for the Hungarian part of the RO-HU-AT corridor

6.24.1-0011-HU-S-M-16

The Action was part of implementation of the cluster of Projects of Common Interest (PCIs) 6.24, which concerned a bidirectional phased capacity increase in the Bulgaria-Romania-Hungary-Austria natural gas transmission corridor (known as ROHUAT/BRUA) with an objective to ensure transportation of 1.75 bcm/y from and to RO (phase I) and 4.4 bcm/y on the RO-HU border and 5.2 bcm/y on the HU-AT border (phase II).

The Action concerned the Hungarian part of the BRUA section only and its activities covered studies needed for the obtainment of the following: Emission Point Source Permit of Operation and Greenhouse Gases Emissions Permit for Point-Source for PCIs 6.24.1 (construction of approx. 9 MW compressor station in Csanádpalota) and 6.24.9 (its upgrade to approx. 13.5 MW); Environmental Impact Assessment permits for PCI 6.24.4 (construction of Városföld-Ercsi-Győr pipeline) and for PCI 6.24.5 (construction of Ercsi-Százhalombatta pipeline); amended Integrated Pollution Prevention and Control Permit for PCI 6.24.6 (upgrade of Városföld compressor station).

The Action was terminated due to significant changes in the concept of realisation of the cluster 6.24, which affected the scope of the Action and impeded its implementation timeline.

Call year:
2016

Location of the Action:
Bulgaria, Hungary, Romania, Slovakia

Implementation schedule:
November 2016 to September 2018

Maximum EU contribution:
€438,257

Beneficiaries:
eustream, a.s. (Slovakia)
http://www.eustream.sk

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.25.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Feasibility Study for the Eastring project

6.25.1-0010-SKHU-S-M-16

This Action was the first step in the implementation of the Project of Common Interest (PCI) 6.25.1 Pipeline system from Bulgaria to Slovakia (currently known as EASTRING), which aims to develop a new bi-directional transmission pipeline system that will interconnect the natural gas transmission networks of Bulgaria, Hungary, Romania and Slovakia.

The objective of the Action was to conduct a Feasibility Study. The study activities covered defining the main technical aspects of the planned interconnections, including the possible routing options, identifying the viability of the project under various scenarios at several implementation stages. Overall, nine routing options were defined and analysed, out of which three final routes were selected and further assessed with a focus on the costs (CAPEX and OPEX), hydraulics and on the potential environmental and social impacts and benefits of the project.

The completion of this Action contributes to the implementation of the PCI 6.25.1 by bringing relevant information on the legal, technical and economic feasibility of the project. The outcome of the Feasibility Study forms the grounds for further basic and detailed engineering works and will contribute to the further decision making process for the PCI 6.25.1.

Action Website:
http://www.eastring.eu

Feasibility Study on the Balkan Gas Hub

6.25.4-0015-BG-S-M-16

The Action contributed to the implementation of the Project of Common interest (PCI) 6.25.4, which aims at the construction of a gas distribution center on the territory of Bulgaria. The concept is based on bringing significant gas quantities from various sources to enter the region of Varna for further transportation and trade through a gas hub. The Balkan Gas Hub includes additional infrastructure to bring new gas to Central/Western, South-Eastern and Eastern Europe enhancing the security of supply by providing access to additional large-scale, high capacity supply streams.

The objective of the feasibility study was to assess the project's commercial and technical viability, define the business model, assess project risks, finalise the regulatory design and financing structure. The results allowed Bulgartransgaz EAD to decide upon a detailed schedule for the upcoming development phases and develop a detailed financing structure.

The results of the study allowed Bulgartransgaz EAD to define the final project parameters and the basis for subsequent engineering works for the best identified route. The study provided information on length, diameter, pressure and necessary above ground equipment. The outcome of the Action determined the further development of the Balkan Gas Hub project.

Call year:
2016

Location of the Action:
Bulgaria

Implementation schedule:
January 2017 to December 2018

Maximum EU contribution:
€630,467

Beneficiaries:
Bulgartransgaz EAD (Bulgaria)
http://www.bulgartransgaz.bg

Status:
Closed

Energy corridor:
North-South gas interconnections in Central Eastern and South Eastern Europe

Energy sector:
Gas

Project(s) of Common Interest:
6.25.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

7.

Southern Gas Corridor

Call year:
2014

Location of the Action:
Turkey

Implementation schedule:
August 2014 to December 2019

Maximum EU contribution:
€2,014,740

Beneficiaries:
Tanap Doğalgaz İletim Anonim Sirketi (Turkey)
http://www.tanap.com

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

Executive summary:
Executive Summary available here.

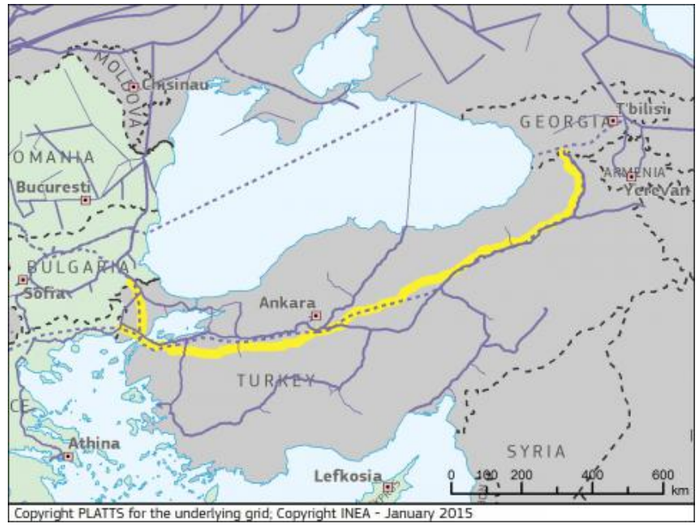
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Environmental monitoring

7.1.1-0051-TR-S-M-14



The Action is part of the Project of Common Interest (PCI) 7.1.1, concerning the gas pipeline from the Georgian-Turkish border at Türkgözü/Posof/Ardahan where it connects to SCP and ends at Turkish-Greek border in Ipsala/Edirne, where it feeds into the TAP Pipeline.

This specific Action's scope included the environmental monitoring of the TANAP Natural Gas Pipeline Project (entire PCI), as committed in the ESIA (Environmental and Social Impact Assessment) Report. The Action concerned third-party environmental monitoring by the beneficiary during all of the construction works, as legally required by the Turkish Ministry of Environment and Urbanization and per international best practice.

Its objective was to ensure that all environmental components in terms of soil, air, water and related habitats (including flora and fauna) will be protected. It also aimed to minimise any possible negative human impact during TANAP project activities. The mitigation measures were defined in the ESIA Report.

The beneficiary's reports will be shared with government authorities, TANAP and the company in charge of all construction contractors.

Action Website:
https://www.tanap.com/tanap-project/2015-2016-first-annual-environmental-and-social-monitoring-report/

Engineering studies for TANAP Scada System and Crossings under Dardanelle Strait and Evros River

Call year:
2015

Location of the Action:
Turkey

Implementation schedule:
May 2015 to July 2017

Maximum EU contribution:
€2,559,000

Beneficiaries:
Tanap Doğalgaz İletim Anonim Sirketi (Turkey)
http://www.tanap.com/

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

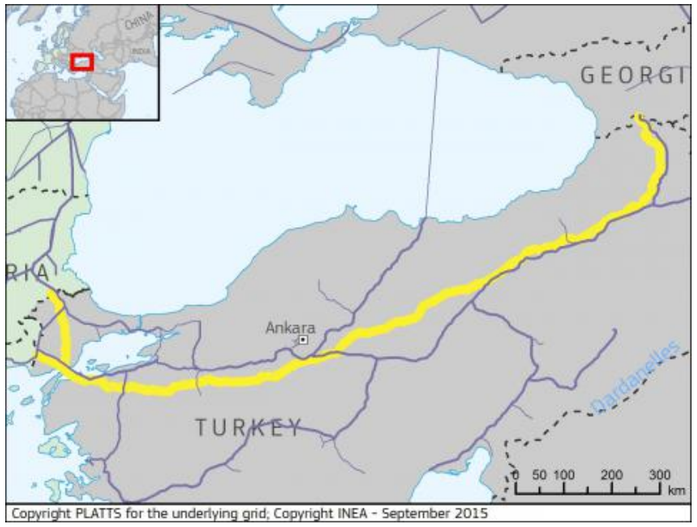
Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

7.1.1-0014-TR-S-M-15



This Action is part of the Project of Common Interest (PCI) 7.1.1 "Gas pipeline from the EU to Turkmenistan via Turkey, Georgia, Azerbaijan and the Caspian, currently known as the combination of the "Trans Anatolia Natural Gas Pipeline" (TANAP), the "Expansion of the South-Caucasus Pipeline" (SCP-(F) X) and the "Trans-Caspian Gas Pipeline" (TCP)".

The Action focused on the implementation of the TANAP pipeline in Turkey and was composed of 3 activities: detailed Engineering for SCADA (a real-time supervisory, control and data acquisition system), for Evros River Crossing and for Dardanelle Strait Crossing.

The expected result of the Action was the development of sound engineering packages, allowing the minimisation of construction risks and safe transmission operations, as per the defined requirements stipulated in the relevant project documents, such as the basis of design and technical specifications.

Detailed Engineering for Pipeline Security System (PSS)

Call year:
2015

Location of the Action:
Turkey

Implementation schedule:
November 2015 to June 2016

Maximum EU contribution:
€1,846,540

Beneficiaries:
Tanap Doğalgaz İletim Anonim Sirketi (Turkey)
http://www.tanap.com/

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

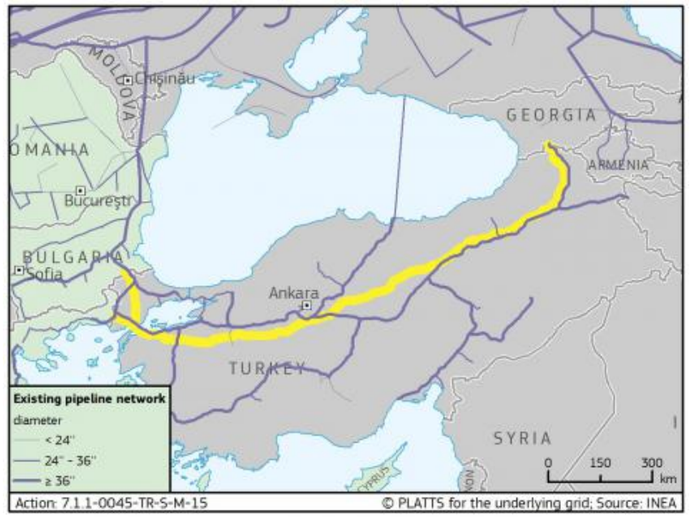
Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

7.1.1-0045-TR-S-M-15



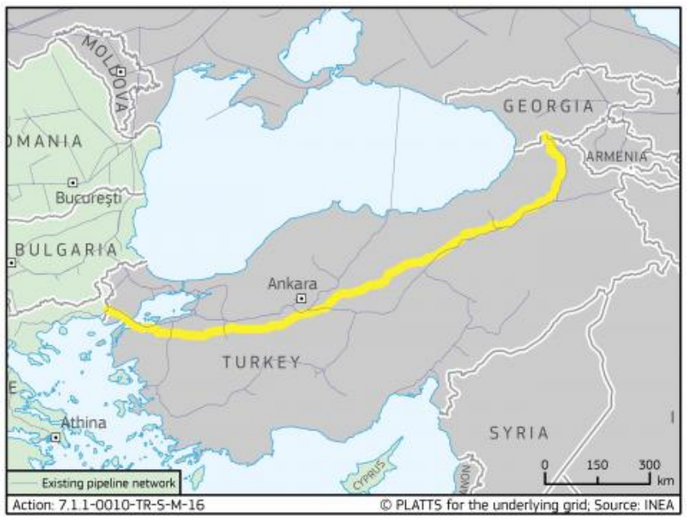
This Action is part of the Project of Common Interest (PCI) 7.1.1 "Gas pipeline from the EU to Turkmenistan via Turkey, Georgia, Azerbaijan and the Caspian, currently known as the combination of the "Trans Anatolia Natural Gas Pipeline" (TANAP), the "Expansion of the South-Caucasus Pipeline" (SCP-(F) X) and the "Trans-Caspian Gas Pipeline" (TCP)".

The Action was composed of one main activity concerning the detailed engineering for the Pipeline Security System (PSS), covering 4 metering stations (including the pigging areas), 2 compressor stations (including off take compressor station and pigging areas), 49 block valve stations, 5 pigging areas of future possible compressor stations and 2 pigging stations located at each side of Dardanelle Straight Crossing.

The completion of this Action ensured the delivery and installation of a proper PSS package in accordance with international and local rules and standards and enables the security operator to supervise all stations from the local security room or in a centralized manner from the control centres. It also enhanced the security of gas transmission through the TANAP pipeline, ensuring the uninterrupted flow of gas to the European market.

Design of Commercial Operations and Asset Integrity Management Systems

7.1.1-0010-TR-S-M-16



Call year:
2016

Location of the Action:
Turkey

Implementation schedule:
July 2016 to July 2018

Maximum EU contribution:
€1,720,257

Beneficiaries:
Tanap Doğalgaz İletim Anonim Sirketi (Turkey)
http://www.tanap.com

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

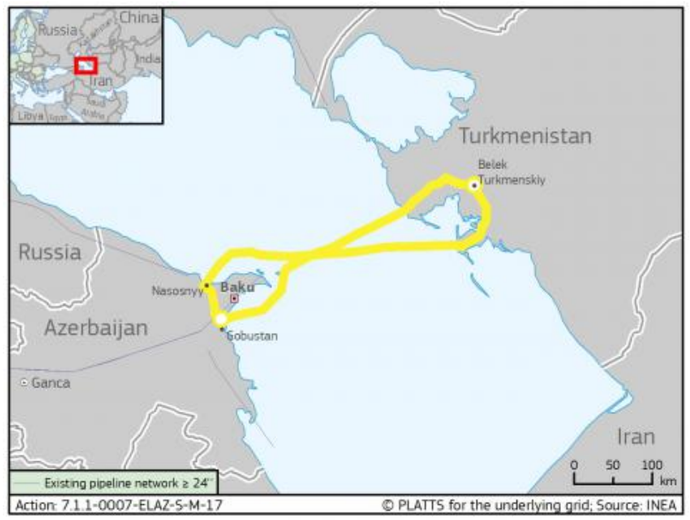
This Action is part of the Project of Common Interest (PCI) 7.1.1 "Gas pipeline to the EU from Turkmenistan and Azerbaijan, via Georgia and Turkey [currently known as the combination of "Trans-Caspian Gas Pipeline" (TCP), "Expansion of the South-Caucasus Pipeline" (SCP-(F)X and "Trans Anatolia Natural Gas Pipeline" (TANAP)]".

The Action was composed of two main activities aiming to develop two software systems. The first activity concerned the design and development of AIMS (Asset Integrity Management System). The second activity concerned the design and development of COS (Commercial Operations System).

As a result of this Action, two specialised software platforms have been developed: one has helped reducing the overall risk of equipment and pipeline failure, contributing to a reliable gas delivery to the European gas market; and the other has enabled gas market operators to use a common Commercial Operations System, upon completion of all commercial arrangements.

Pre-FEED, Reconnaissance Surveys and Strategic and Economic Evaluations of the Trans-Caspian Pipeline

7.1.1-0007-ELAZ-S-M-17



Call year:
2017

Location of the Action:
Azerbaijan, Turkmenistan

Implementation schedule:
April 2018 to April 2020

Maximum EU contribution:
€1,871,725

Total eligible costs:
€3,743,450

Percentage of EU support:
50%

Beneficiaries:
W-Stream Caspian Pipeline Company OÜ (Estonia)
http://www.white-stream.com

Status:
Ongoing

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

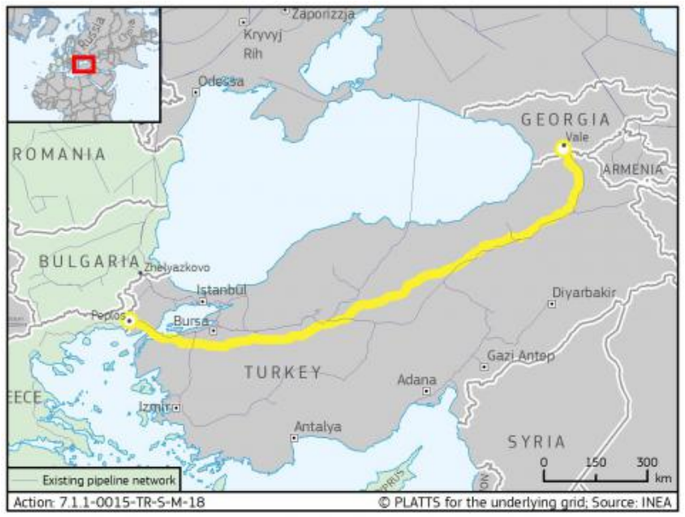
This Action is part of the PCI 7.1.1 «Gas pipeline to the EU from Turkmenistan and Azerbaijan, via Georgia and Turkey, [currently known as the combination of “Trans-Caspian Gas Pipeline” (TCP), “Expansion of the South-Caucasus Pipeline” (SCP-(F) X) and “Trans Anatolian Natural Gas Pipeline” (TANAP)].

The main aim of the Action is to define the pre-Front-End Engineering Design (pre-FEED) of the Trans Caspian Pipeline (TCP) to transport natural gas from Turkmenistan to Azerbaijan crossing the Caspian Sea. The pre-FEED design is divided in two sections. An initial phase, where the basic data, engineering and preliminary routing will be established and a follow-up phase where the proposed route reconnaissance survey contracts will be defined and awarded and where the mechanical design will be developed to proceed with the FEED.

The implementation of the current Action will contribute to the further development of the PCI by establishing and evaluating the feasibility and basic cases for the routing and the mechanical design of the pipeline. The completion of the current Action will lead to a satisfactory level of development of the pre-FEED, enabling the implementation of a detailed FEED, including a reliable estimation of materials and costs needed for a successful development of the PCI.

Cathodic protection verification and re-modification studies for "As-Built" design

7.1.1-0015-TR-S-M-18



Call year:
2018

Location of the Action:
Turkey

Implementation schedule:
April 2018 to June 2021

Maximum EU contribution:
€5,044,394

Total eligible costs:
€10,088,788

Percentage of EU support:
50%

Beneficiaries:
Tanap Doğalgaz İletim Anonim Sirketi A.S. (Turkey)
http://www.tanap.com/

Status:
Ongoing

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

This Action contributes to the implementation of the PCI 7.1.1 "Gas pipeline to the EU from Turkmenistan and Azerbaijan, via Georgia and Turkey [currently known as the combination of "Trans-Caspian Gas Pipeline" (TCP), "Expansion of the South- Caucasus Pipeline" (SCP-(F)X and "Trans Anatolia Natural Gas Pipeline" (TANAP)]", which aims to have an initial throughput capacity of 16 bcm/year, with a potential to expand up to 31 bcm/year.

The Action contributes to the development of the TANAP pipeline by ensuring the review of cathodic protection design, site supervision during construction works and performance of verification surveys, prolonging the operating period of the infrastructure and providing operational integrity of the pipeline itself, as well as of every single installation along the route including compressor, metering and block valve stations. In addition, the Action also aims to deliver re-modification studies for the “As-Built design”, aiming to assess design changes during construction, validating the integrity of pipeline and stations due to such changes and making sure that those changes are reflected in the final engineering drawings as “As-Built design”.

The results of the Action will provide support and enable safe and efficient operation of the TANAP pipeline.

Archaeological Trial Trench Investigations & Rescue Excavations

7.1.3-0013-ELIT-S-M-16

Call year:
2016

Location of the Action:
Greece

Implementation schedule:
November 2016 to September 2018

Maximum EU contribution:
€14,018,347

Beneficiaries:
Trans Adriatic Pipeline AG (Switzerland)
https://www.tap-ag.com/

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributed to the implementation of Project of Common Interest (PCI) 7.1.3 "Gas pipeline from Greece to Italy via Albania and the Adriatic Sea [currently known as the "Trans-Adriatic Pipeline" (TAP)]", which aims to transport natural gas from the Shah Deniz II field in Azerbaijan to Europe. The construction of the pipeline has started in 2016 and the pipeline is currently close to completion.

The objective of the Action was to carry out a series of archaeological trial trench investigations in the Greek regions of Kavala, Drama, Kilkis, Thessaloniki, Serres, Florina, Pella, Imathia, Kozani and Kastoria, in order to determine the presence of buried archaeological remains, as well as any rescue excavation activities which arose as a result of the trial cuts or from chance finds. The Action's deliverables were full and complete clearance of all cultural heritage issues that arose along the proposed pipeline route in Greece.

Once built, TAP will provide a direct and cost-effective transportation route completing the Southern Gas Corridor, a 3500 km gas value chain stretching from the Caspian Sea to Europe. TAP will be 879 km in length and will cross the territory of Greece (551 km), Albania (215 km), the Adriatic Sea (105 km) and Italy (8 km).

Call year:
2014

Location of the Action:
Romania

Implementation schedule:
January 2015 to June 2017

Maximum EU contribution:
€797,447

Beneficiaries:
Societatea Nationala de Transport Gaze Naturale TRANSGAZ S.A. (Romania)
http://www.transgaz.ro/en

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.5

Executive summary:
Executive Summary available here.

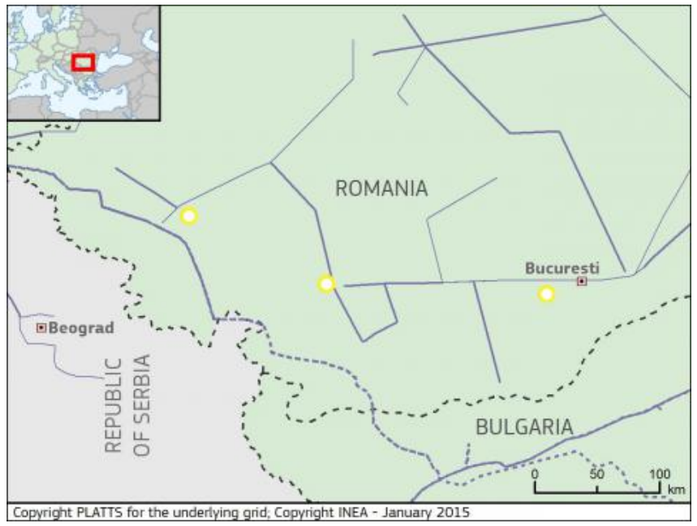
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

FEED for three Compressor Stations in the corridor PCI 7.1.5 – Romanian section

7.1.5-0026-RO-S-M-14



The Action is part of the Project of Common Interest (PCI) 7.1.5, the gas pipeline from Bulgaria to Austria, via Romania and Hungary. The Romanian part of this PCI consisted of a pipeline and three compressor stations.

The scope of the Action was the preparation of the Front End Engineering Design (FEED) for the construction of three Gas Compressor Stations on the Romanian territory.

The FEED Action aimed at providing all construction details for the stations, as set out in the Scope of Work, the bill of quantities and the material take-off for the construction of three Compressor Stations located at Podisor, Bibesti and Jupa areas, as well as granting of all approvals, permits and authorizations necessary for the construction permit mandatory for works execution.

The Action resulted in obtaining the technical-economical documentation, the tender documentation for the purchase of the compressor units, the tender documentation for the procurement and execution phase, the permits and the construction permit for the three compressor stations. The achievement of these results led to an increased maturity of the project, contributed to providing relevant information to the promoter for the purpose of the investment decision and allowed the start of the necessary activities for the execution phase of the compressor stations.

Call year:
2015

Location of the Action:
Romania

Implementation schedule:
July 2016 to August 2021

Maximum EU contribution:
€159,449,379

Total eligible costs:
€398,623,447

Percentage of EU support:
40%

Beneficiaries:
Societatea Nationala de Transport Gaze Naturale TRANSGAZ S.A. (Romania)
http://www.transgaz.ro/en

Status:
Ongoing

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.5

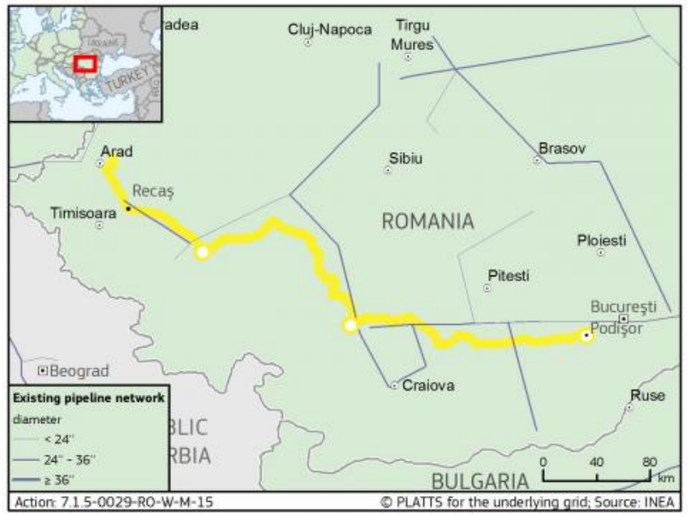
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Development on Romanian territory of the National Gas Transmission System on the Bulgaria-Romania-Hungary-Austria direction, execution works Stage 1

7.1.5-0029-RO-W-M-15



The Action contributes to the implementation of the Project of Common Interest (PCI) 7.1.5 “Gas pipeline from Bulgaria to Austria via Romania and Hungary”, which consists in a new onshore pipeline with a length of approx. 1318 km and with a delivery capacity of 6.1 mcm/day in Bulgaria, 6.1 mcm/day in Romania, 6.1 mcm/day in Hungary and 52 mcm/day in Austria. The initial throughput capacity is of 23 bcm/year. The power of the compressor stations amounts to a total of 345 MW.

The Action implements the Stage 1 of the PCI and consists in the construction of a gas transmission pipeline from the Technological Node (TN) Podisor up to the TN Recas, as well as three compressor stations.

The achievement of this Action will ensure the interconnection of the gas transmission systems in Bulgaria and Hungary with the gas transmission system in Romania through the interconnection pipelines Romania-Bulgaria and Romania-Hungary, ensuring the interconnectivity between the low pressure system in Romania and the high pressure systems in Bulgaria and Hungary.

The performance of the works and services related to the current Action will allow for the implementation of Stage 2 of PCI 7.1.5, by upgrading the transmission capacity and increasing the related pressures.

Front End Engineering Design (FEED) Metering Regulating station at Nea Messimvria for the interconnection with TAP

7.1.6-0007-EL-S-M-16

Call year:
2016

Location of the Action:
Greece

Implementation schedule:
May 2016 to March 2018

Maximum EU contribution:
€243,250

Beneficiaries:
HELLENIC GAS TRANSMISSION SYSTEM OPERATOR (DESFA) S.A. (Greece)
http://www.desfa.gr/

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.1.6

Executive summary:
Executive Summary available here.

This Action was part of the Project of Common Interest (PCI) 7.1.6 Metering and Regulating Stations for the Connection of the Greek transmission system with the Trans-Adriatic Pipeline (TAP), which consists of two metering and regulating stations, one at Komotini and one at Nea Messimvria respectively, which will enable the flow of gas from TAP to the Greek National Natural Gas System (NNGS).

The Action consisted of the Front End Engineering and Design (FEED) study for the construction of the metering and regulating station at Nea Messimvria. The FEED study has defined the technical requirements, such as operational systems and technical specifications and identified design parameters for the project required to start the tendering of the Engineering Procurement Construction (EPC) contract. The Action has also helped defining the exact length and location of the pipeline as well as the tie-in point and the technical capacity (minimum 3.65 bcm/y).

The objective of the Action was to define the precise interconnecting point of the NNGS and TAP to enable the unidirectional flow from TAP to the NNGS, as well as preparing the required procedures for land acquisition, which included an environmental assessment.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Eastern Mediterranean Natural Gas Pipeline – Pre-FEED Studies

7.3.1-0025-ELCY-S-M-15

Call year:
2015

Location of the Action:
Cyprus, Greece

Implementation schedule:
May 2015 to March 2018

Maximum EU contribution:
€1,927,924

Beneficiaries:
NATURAL GAS SUBMARINE INTERCONNECTOR GREECE-ITALY (Greece)
http://www.igi-poseidon.com/en/

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.3.1

Executive summary:
Executive Summary available here.

The Action is part of the Project of Common Interest (PCI) 7.3.1 "Pipeline from offshore Cyprus to Greece mainland via Crete".

The Action included activities and studies in relation to the Pre-FEED (Front-End-Engineering Design) phase of the PCI Eastern Mediterranean Gas Pipeline (East Med), namely technical feasibility studies, reconnaissance marine survey, as well as economic, financial and competitiveness studies.

The objective of the Action was to provide the necessary information to producers and downstream gas market operators, allowing the assessment and possible selection of the project, as preferred export option, for part of the Levantine Basin gas resources, ensuring a new reliable source of supply via a diversified route.

The Action contributed to enhancing the maturity of the project with a detailed and complete technical and economic assessment, enabling the project promoter to provide reliable data to the upstream producers and to downstream operators for the selection of the PCI as preferred export route.

The Action has allowed project promoters to timely proceed with the development of the PCI and in particular with the FEED phase.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

EastMed Pipeline Project – Development Phase

7.3.1-0023-CYEL-S-M-17

Call year:
2017

Location of the Action:
Cyprus, Greece

Implementation schedule:
May 2018 to December 2021

Maximum EU contribution:
€34,500,000

Total eligible costs:
€69,000,000

Percentage of EU support:
50%

Beneficiaries:
Natural Gas Submarine Interconnector Greece-Italy Poseidon S.A. (Greece)
http://www.igi-poseidon.com/en/

Status:
Ongoing

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.3.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributes to the implementation of the PCI 7.3.1 'EastMed Pipeline', aiming at contributing to the diversification of gas supply sources and routes to the EU, ending the isolation of Cyprus and Crete, developing new gas production in the Eastern Mediterranean region and facilitating gas exchanges in Southeast Europe.

The main objective of the Action is to carry out the studies required to provide the necessary technical inputs for starting the implementation phase of the PCI. The Action will build on the results of the Pre-FEED analysis and include the main remaining steps, leading to the Final Investment Decision for the PCI. In particular, the Action entails detailed design (FEED) and marine survey activities, including all the engineering details for project implementation, as well as permitting activities in Cyprus and Greece.

The successful completion of the Action will lead to the identification of the project routing, the definition of the project costs and the technical specifications required for tendering the construction phase of the project, and will result in the submission of the Environment Impact Assessment (EIA) application to obtain the relevant permits from the competent authorities in Cyprus and Greece, paving the way to start of the construction and operation of the EastMed Pipeline.

Removing internal bottlenecks to end isolation & allow transmission of NG from Eastern Mediterranean (CyprusGas2EU)

7.3.2-0026-CY-W-M-17

Call year:
2017

Location of the Action:
Cyprus

Implementation schedule:
March 2018 to December 2022

Maximum EU contribution:
€101,255,320

Total eligible costs:
€253,138,300

Percentage of EU support:
40%

Beneficiaries:
Republic of Cyprus represented by the Ministry of Energy, Commerce and Industry (Cyprus)
http://www.mcit.gov.cy/

Status:
Ongoing

Energy corridor:
Southern Gas Corridor

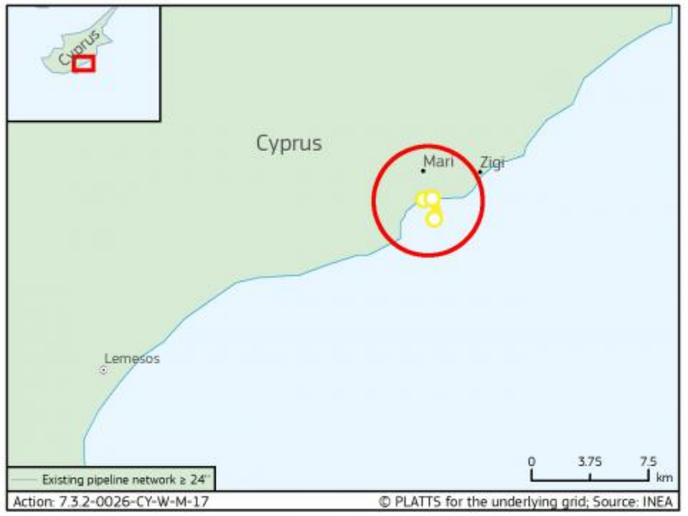
Energy sector:
Gas

Project(s) of Common Interest:
7.3.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/



The Action contributes to the implementation of the Project of Common Interest (PCI) 7.3.2 "Removing internal bottlenecks in Cyprus to end isolation and to allow for the transmission of gas from the Eastern Mediterranean region". The main objective of the Action is to build the LNG infrastructure for importing natural gas on the island of Cyprus and facilitate its use mainly for power generation purposes but also for other industrial and urban uses.

The Action entails the deployment of an offshore LNG facility (Floating Storage and Regasification Unit – FSRU) as well as the construction of several onshore natural gas facilities along the Port of Lemesos – Terminal 2 (Vassiliko), namely: a jetty for the unit's safe mooring, a jetty-borne natural gas pipeline, an onshore gas pipeline, a shoreside block valve facility, an onshore natural gas buffer solution and a pressure reduction and metering station. These facilities constitute a critical infrastructure prerequisite for the successful import of natural gas on the island of Cyprus.

As an outcome of the Action, the island of Cyprus will acquire an entry point for natural gas and possible synergies between Cyprus and other Member States will occur in the procurement of natural gas optimizing delivery schedules, creating economies of scale and enhancing solidarity.

Action Website:
http://cyprusgas2eu.eu/index.php/en/

Call year:
2014

Location of the Action:
Bulgaria

Implementation schedule:
March 2015 to January 2016

Maximum EU contribution:
€142,620

Beneficiaries:
Bulgartransgaz (Bulgaria)
https://www.bulgartransgaz.bg/en

Status:
Closed

Energy corridor:
Southern Gas Corridor

Energy sector:
Gas

Project(s) of Common Interest:
7.4.2

Executive summary:
Executive Summary available here.

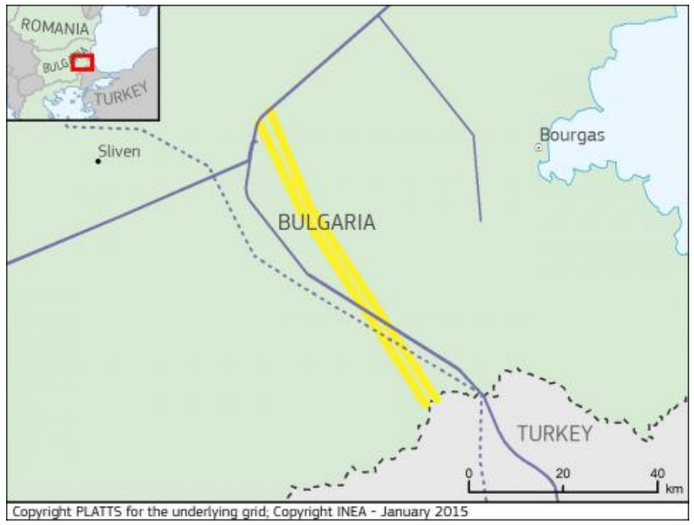
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Feasibility Study for the Interconnection Turkey-Bulgaria (ITB)

7.4.2-0061-BG-S-M-14



The Action was part of the Project of Common Interest (PCI) 7.4.2 "Interconnector between Turkey and Bulgaria" currently known as "ITB", which aims to create alternative supply routes, as well as the relevant infrastructure and is a new onshore pipeline of about 200 km (approx. 75 km Bulgarian section and approx. 130 km Turkish section) and with a daily capacity of 9 MCM/day (3 BCM/y).

The main scope of the Action was to prepare the Feasibility Study (FS), including all technical, economic, environmental, market and social aspects of the PCI "Interconnection Turkey-Bulgaria", for the section on the Bulgarian territory. The goal of the FS was to assess the technical, financial and market aspects, as well as the potential of the respective PCI to the level of detail that would allow Bulgartransgaz to evaluate and select the optimal option of the PCI implementation. Preliminary data such as length, diameter, capacity, pressure, above ground equipment, financial results, as well as the time schedule have been defined in the FS.

The Action was implemented in close cooperation with the Turkish part, in order to have a common and coordinated approach, in terms of process and deadlines, for the development of the ITB project.

8.

Baltic Energy Market interconnection Plan in gas

Call year:
2014

Location of the Action:
Estonia, Finland

Implementation schedule:
August 2014 to March 2018

Maximum EU contribution:
€3,822,160

Beneficiaries:
Elering AS (Estonia)
http://www.elering.ee

Gasum Oy (Finland)
http://www.gasum.com

Baltic Connector Oy (Finland)
http://www.balticconnector.fi

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.1.1

Executive summary:
Executive Summary available here.

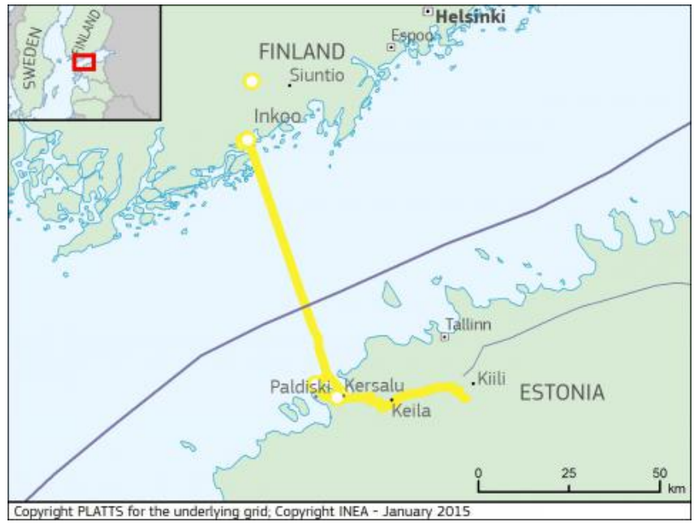
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Studies for Balticconnector

8.1.1-0040-FIEE-S-M-14



This Action relates to the Project of Common Interest (PCI) 8.1.1. Interconnector between Estonia and Finland ("Balticconnector"), which is a bi-directional offshore pipeline that will physically connect the Finnish and Estonian gas networks.

Balticconnector consists of three sections: the 22 km-long onshore pipeline in Finland (including a compressor and custody metering station), the 81 km-long offshore pipeline, and the 54 km-long onshore pipeline in Estonia (including a compressor and custody metering station).

The objective of this Action was to carry out preparatory studies aimed at getting technical and financial information in order to obtain the necessary permits for the pipeline's offshore and onshore sections, as well as prepare the Final Investment Decision (FID) for Balticconnector. It included both business model and environmental and technical studies.

The business model studies were composed of the market analysis/market modelling and preparations for the business plan and investment request to the national regulatory authorities.

The environmental and technical studies consisted of the Environmental Impact Assessment (EIA) report, Front-End Engineering Design (FEED) and detailed engineering tasks, including geotechnical and geophysical studies and procurement procedures for construction.

Balticconnector works

Call year:
2016

Location of the Action:
Estonia, Finland

Implementation schedule:
May 2017 to March 2021

Maximum EU contribution:
€187,500,000

Total eligible costs:
€250,000,000

Percentage of EU support:
75%

Beneficiaries:
Baltic Connector Oy (Finland)
http://www.balticconnector.fi

Elering AS (Estonia)
http://www.elering.ee

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.1.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

8.1.1-0004-FIEE-W-M-16

The Action implements the Project of Common Interest (PCI) 8.1.1 Interconnector between Estonia and Finland (currently known as "Balticconnector"), which aims to interconnect the natural gas transmission networks of both countries.

The scope of the Action is the construction of three pipeline sections: an onshore pipeline section in Finland (approx. 22 km, DN500, 80 bar), an onshore section in Estonia (approx. 50 km, DN700, 55 bar) and an offshore section between Estonia and Finland (approx. 80 km, DN500, 80 bar), as well as the installation of auxiliary equipment including a pressure reduction station in Estonia and compressor and metering stations in both countries. This specific Action covers the purchase of equipment and the construction works for the whole infrastructure.

The Action will fully implement PCI 8.1.1 and will result in establishing a physical interconnection between the Finnish and Estonian gas transmission systems, which will become an important element of expansion of the BEMIP gas network, connecting Finland to the EU gas market. Furthermore, Balticconnector (together with the enhancement of the EE-LV interconnection) will increase the diversification of gas supplies in the Baltic region, enhancing competitiveness and strengthening the liberalization process of the gas markets in the Baltic States.

The Feasibility Study and Cost-Benefit Analysis for the Enhancement of Latvia-Lithuania Interconnection

Call year:
2017

Location of the Action:
Latvia, Lithuania

Implementation schedule:
October 2017 to September 2018

Maximum EU contribution:
€147,785

Beneficiaries:
AS Conexus Baltic Grid (Latvia)
http://www.conexus.lv

AB Amber Grid (Lithuania)
http://www.ambergrid.lt

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.2.1

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

8.2.1-0001-LTLV-S-M-17

The Action contributed to the implementation of the Project of Common Interest (PCI) 8.2.1 Enhancement of Latvia-Lithuania, which aims to increase the interconnection capacity between the gas systems of both Member States.

The objective of this Action was to prepare a feasibility study aimed at analysing the possibility to enhance the interconnection capacity between Latvia and Lithuania, in order to address the increasing demand of gas flow between both countries as well as to adapt to a changing gas market. The feasibility study allowed to assess the available technical options and identify the most efficient solution, as well as determine the needed cross-border capacity for the elimination of the possible bottlenecks between Latvia and Lithuania.

The completion of this Action contributed to the implementation of the PCI 8.2.1 by determining the precise technical scope of the project and preparing a solid basis for taking further crucial steps towards the Final Investment Decision (FID) to implement the project and start the design and construction phase.

Call year:
2019

Location of the Action:
Latvia, Lithuania

Implementation schedule:
July 2019 to December 2023

Maximum EU contribution:
€4,885,500

Total eligible costs:
€9,771,000

Percentage of EU support:
50%

Beneficiaries:
AS Conexus Baltic Grid (Latvia)
http://www.conexus.lv

AB Amber Grid (Lithuania)
http://www.ambergrid.lt

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.2.1

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Construction works for the Enhancement of Latvia-Lithuania interconnection

8.2.1-0001-LVLT-W-M-19

The Action contributes to the implementation of the Project of Common Interest (PCI) 8.2.1 “Construction works for the Enhancement of the Latvia-Lithuania interconnection”.

The Action concerns the upgrade and reconstruction works of the following infrastructure elements:

1. Re-adjustment of piping of the Panevezys Compressor Station, increasing the Maximum Operating Pressure (MOP)up to 54 bar and enhancement of the capacity of the Kymani Gas Metering Station on the territory of Lithuania.
2. Enhancement of the capacity of the Latvian cross-border transmission gas pipelines: namely the Rīga–Panevėžys, Rīga–Inčukalns UGS line I (Underground Gas Storage), Rīga–Inčukalns UGS line II, Voldaj–Pskov–Riga, Izborsk–Inčukalns UGS and Vireši–Tallinn; including complex diagnostic works and change of pipelines segments to increase the MOP from 40 bar up to 50 bar.

The Action builds upon the results of the CEF Energy co-funded Action 8.2.1-0001-LTLV-S-M-17. The completion of this Action will implement PCI 8.2.1. The interconnection capacity between the gas systems of Latvia and Lithuania will be increased, up to 130.47 GWh/d in the direction Lithuania-Latvia and up to 119.5 GWh/d in the direction Latvia-Lithuania, providing for more effective use of the existing Inčukalns UGS facility.

Call year:
2016

Location of the Action:
Estonia

Implementation schedule:
July 2016 to June 2021

Maximum EU contribution:
€18,625,000

Total eligible costs:
€37,250,000

Percentage of EU support:
50%

Beneficiaries:
Elering AS (Estonia)
http://www.elering.ee

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.2.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Estonia-Latvia gas interconnection enhancement

8.2.2-0005-EE-W-M-16

The Action implements the Project of Common Interest (PCI) 8.2.2 "Enhancement of Estonia-Latvia interconnection".

The scope of the Action is the construction of gas network infrastructure in three different locations: a gas metering station near the Estonia-Latvia border in Karksi; a border valve in Lilli (between Karksi and the Estonia-Latvia border)and a bidirectional compressor station in South Estonia in Puiatu.

This Action covers the tendering for engineering, procurement and construction, as well as the execution of the construction works and the commissioning of the whole infrastructure.

The Action will fully implement the PCI 8.2.2 and its completion will result in improving the gas transmission infrastructure to allow bidirectional gas flow between the Estonian and Latvian gas transmission systems as well as increasing the overall cross-border transmission capacity.

Construction of the Klaipeda-Kursenai Gas Transmission Pipeline

8.2.3-0001-LT-P-M-14

Call year:
2014

Location of the Action:
Lithuania

Implementation schedule:
July 2014 to March 2016

Maximum EU contribution:
€24,739,293

Beneficiaries:
AB "Amber Grid" (Lithuania)
http://www.ambergrid.lt

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

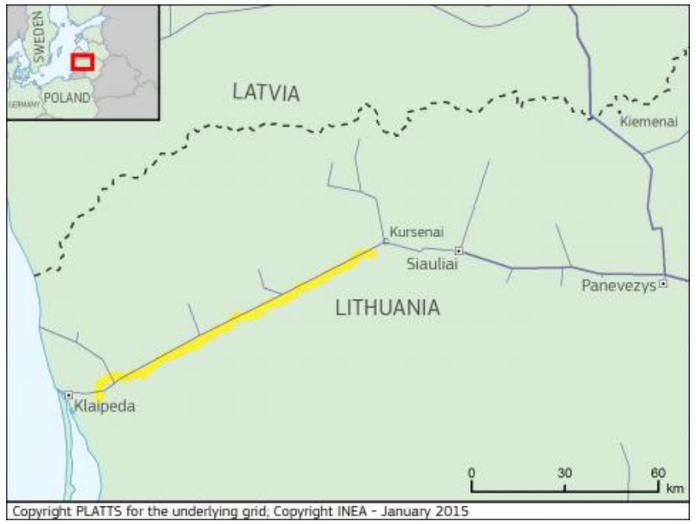
Project(s) of Common Interest:
8.2.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/



The Action contributed to the implementation of the Project of Common Interest (PCI) 8.2.3. capacity enhancement of Klaipeda-Kiemenai pipeline in Lithuania.

This Action involved the construction of the Klaipeda–Kursenai gas transmission pipeline, which connects the LNG (liquefied natural gas) terminal infrastructure in Klaipeda to the gas transmission system towards Kursenai. The +/- 111 km pipeline has a nominal diameter of DN 800 mm (DN 250 mm and DN 150 mm of the bypass line in valve stations and exhaust pipes) and a designed pressure of 5.4 MPa.

The construction of this pipeline has eliminated a bottleneck in the gas transmission system and has enhanced the capacity of the Klaipeda-Kiemenai pipeline, enabling the transport of substantial gas volumes (up to 10.3 mcm/d) from the new supply route (the LNG terminal in Klaipeda).

Furthermore this Action has contributed to enhance security of the gas supply and competition in the gas market of the Baltic states.

Inčukalns underground gas storage-study of increased flexibility and use as strategic gas storage

8.2.4-0025-LV-S-M-16

Call year:
2016

Location of the Action:
Latvia

Implementation schedule:
February 2017 to November 2017

Maximum EU contribution:
€150,000

Beneficiaries:
Conexus Baltic Grid (Latvia)
http://www.conexus.lv

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

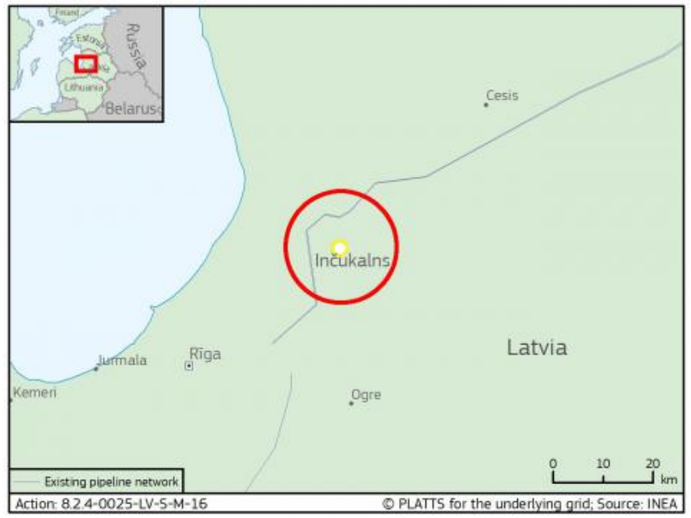
Project(s) of Common Interest:
8.2.4

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/



The Action contributed to the implementation of the Project of Common Interest (PCI) 8.2.4 Enhancement of Inčukalns Underground Gas Storage (LV) which aims to upgrade and extend an existing aquifer gas storage facility in Latvia.

The main Action's objective was to carry out a study aimed at analysing the possibility to enhance the existing Inčukalns Underground Gas Storages (UGS) both from a technical and commercial point of view, as well as to increase the use of the storage and better contribute to the regional security of supply.

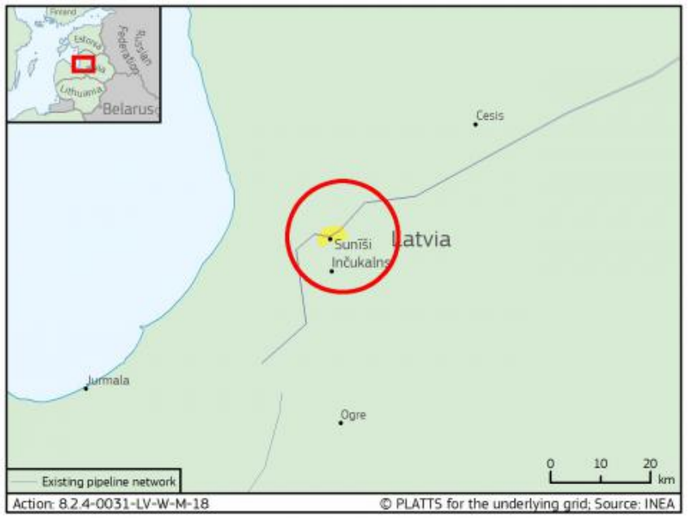
The study covered five main elements:

- Market analysis on the need and value for a more flexible gas storage
- Analysis on regional security of supply
- Assessment and modelling of reservoir and wells
- Surface facilities analyses in view of increased flexibility
- Preparation of a business plan and a roadmap in view of possible changes in the use of the existing gas storage facility.

Enhancing the use of the Inčukalns UGS facility will result in improved security of gas supply and will contribute to ending energy isolation and market integration in the Baltic Energy Market Interconnection Plan (BEMIP). The completion of this Action has provided relevant input and a solid basis for making a decision on the next phase of the project.

Enhancement of Inčukalns Underground gas storage

8.2.4-0031-LV-W-M-18



Call year:
2018

Location of the Action:
Latvia

Implementation schedule:
October 2018 to December 2025

Maximum EU contribution:
€44,000,000

Total eligible costs:
€88,000,000

Percentage of EU support:
50%

Beneficiaries:
Conexus Baltic Grid (Latvia)
http://www.conexus.lv

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.2.4

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributes to the implementation of the Project of Common Interest (PCI) 8.2.4 Enhancement of Inčukalns Underground Gas Storage (UGS) which aims to enhance an existing aquifer gas storage facility in Latvia.

The objective of the Action is the construction and reconstruction works of the following infrastructure elements part of the existing UGS facility: the surface infrastructure, the wells and the compression units.

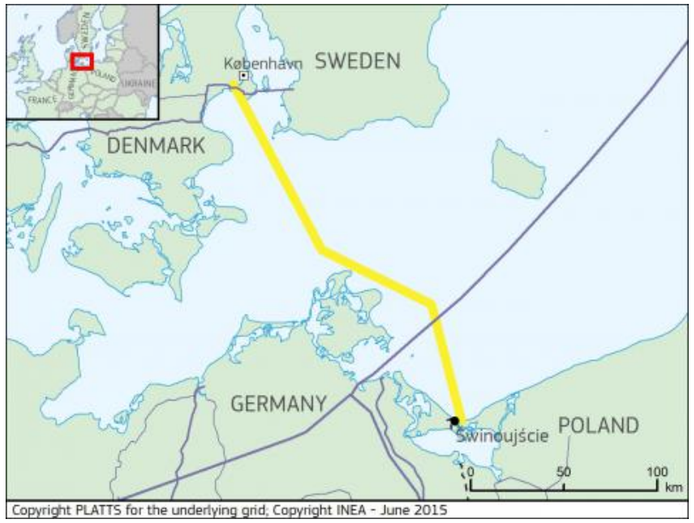
The implementation of the Action will significantly improve the operational efficiency of the UGS facility. Overall the Action will increase the gas injection UGS capacity from 17 mcm/day to approx. 21-23 mcm/day, the gas compression withdrawal capacity from current 0 mcm/day to approx. 12-15 mcm/day as well as the overall wells' productivity by 5% (from 8,145 mcm/day to approx. 8,600 mcm/day).

The Action builds upon the results of the concluded CEF Energy co-funded action 8.2.4-0025-LV-S-M-16, which relates to feasibility studies.

The completion of this Action will implement the PCI 8.2.4 and will contribute to improve the security of gas supply and market integration in the Baltic Energy Market Region (BEMIP).

Feasibility Study regarding the PCI Poland - Denmark interconnection "Baltic Pipe" TRA-N-271

8.3-0019-DKPL-S-M-15



Call year:
2015

Location of the Action:
Denmark, Poland

Implementation schedule:
September 2015 to December 2016

Maximum EU contribution:
€387,374

Beneficiaries:
Energinet (Denmark)
http://www.energinet.dk

Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

Status:
Closed

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.3

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

The Action contributed to the implementation of Project of Common Interest (PCI) 8.3 Poland - Denmark interconnection "Baltic Pipe". Baltic Pipe is an offshore gas pipeline through the Baltic Sea that will connect the Danish and Polish gas transmission systems.

The main objectives of the Action were to define the most optimal scenario to develop Baltic Pipe and determine the ultimate efficient definition of the project from the commercial and technical point of view (scope of the necessary investments, demand, dimensioning, routing, capacity allocation model and cost).

This Action covered the analysis of the economic feasibility, the technical feasibility study, the analysis of the regional market model development, as well as the plan and preparation of the Environmental Impact Assessment (EIA) of the project.

The completion of this Action contributed to provide a solid basis for making decisions on the next phase of the Baltic Pipe project.

Call year:
2017

Location of the Action:
Denmark, Poland

Implementation schedule:
October 2017 to August 2020

Maximum EU contribution:
€33,149,601

Total eligible costs:
€66,299,202

Percentage of EU support:
50%

Beneficiaries:
Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

Energinet (Denmark)
http://www.energinet.dk

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Preparatory works for the Baltic Pipe Project up to obtainment of all necessary permission(s) in Poland and in Denmark

8.3-0025-PLDK-S-M-17

The Action contributes to the implementation of the Project of Common Interest (PCI) 8.3 Poland-Denmark interconnection "Baltic Pipe", a bidirectional offshore gas pipeline through the Baltic Sea that will physically connect the Danish and Polish gas transmission systems.

The objective of this Action is to carry out preparatory studies, geophysical and geotechnical surveys, engineering works and pre-construction activities as well as to prepare the necessary project documentation to obtain the building permits for a number of key infrastructure elements, part of the Baltic Pipe project. These infrastructure elements are the offshore pipeline connecting Poland and Denmark (estimated length of 260-310 km, DN900, design pressure of 120-150 bar); the onshore pipeline in Poland (estimated length of 40-154 km, DN1000); one receiving terminal in Poland; two compressor stations in Poland and one in Denmark; as well as a small section of the onshore pipeline in Denmark (estimated length of approx. 10 km, DN 900) connecting the Zealand compressor station to the landfall on the East coast of Zealand.

The completion of this Action will contribute to the implementation of the PCI 8.3 by preparing a solid basis for taking further crucial steps towards the Final Investment Decision (FID) to start the construction phase.

Call year:
2018

Location of the Action:
Denmark, Poland

Implementation schedule:
April 2018 to November 2020

Maximum EU contribution:
€18,300,000

Total eligible costs:
€36,600,000

Percentage of EU support:
50%

Beneficiaries:
Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://energinet.dk

Energinet (Denmark)
http://en.gaz-system.pl

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.3.1, 8.3.2

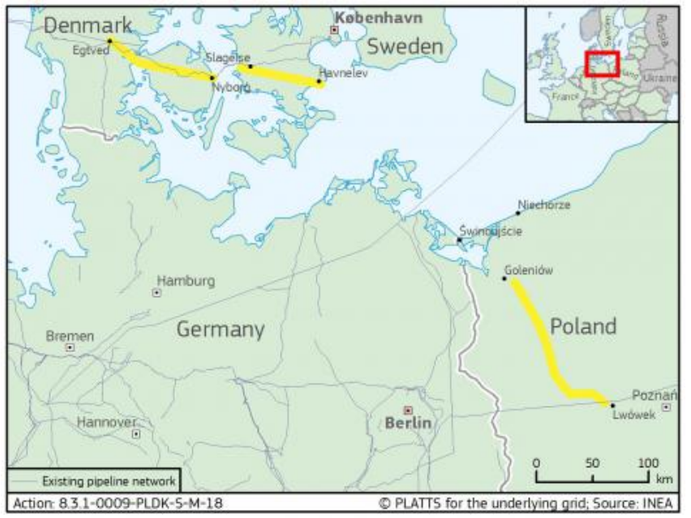
Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Reinforcement of the national gas transmission systems in Poland and Denmark for the Baltic Pipe Project

8.3.1-0009-PLDK-S-M-18



The Action contributes to the implementation of the Projects of Common Interest (PCI) 8.3.1 Reinforcement of Nybro - Poland/Denmark Interconnection and PCI 8.3.2 Poland-Denmark interconnection [currently known as “Baltic Pipe”].

This Action relates to a number of infrastructure elements which are part of Baltic Pipe, namely: the onshore pipeline in Poland from Goleniów to Lwówek (estimated length of approx. 190 km, DN1000) and the onshore pipeline in Denmark from Egtved to the new compressor station in Everdrup (estimated length of approx. 182 km).

The Action’s objective is to carry out preparatory studies and engineering works, i.e. conceptual, basic and detailed design (Front End Engineering and Design – FEED), pre-construction activities as well as prepare the necessary project documentation up to the obtainment of the building permits for key infrastructure elements which are part of Baltic Pipe.

The completion of this Action will contribute to the implementation of the PCI cluster 8.3 (PCI 8.3.1 and 8.3.2) by preparing a solid basis for taking further crucial steps towards the Final Investment Decision (FID) and start the construction of Baltic Pipe.

Call year:
2018

Location of the Action:
Denmark, Poland

Implementation schedule:
January 2019 to December 2022

Maximum EU contribution:
€214,920,000

Total eligible costs:
€716,400,000

Percentage of EU support:
30%

Beneficiaries:
Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://en.gaz-system.pl

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.3.1, 8.3.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Construction works for the PCI infrastructure cluster 8.3

8.3.1-0035-PLDK-W-M-18

The Action contributes to the implementation of the Projects of Common Interest (PCI) 8.3.1 Reinforcement of Nybro-Poland/Denmark Interconnection and PCI 8.3.2 Poland-Denmark interconnection (known as Baltic Pipe).

The objective of this Action is to carry out the construction works for the infrastructure elements of Baltic Pipe which are part of this Action, namely: a bi-directional offshore gas pipeline connecting PL and DK through the Baltic Sea (estimated length approx. 275 km), two onshore pipeline sections in PL connecting the offshore gas pipeline with the Polish national gas transmission system (total estimated length approx. 90 km), the receiving terminal, the onshore pipeline from Goleniów to Lwówek (estimated length approx. 192 km), as well as the expansion of the compressor stations located in Goleniów and in Odolanów.

The Action builds upon the results of the ongoing Actions 8.3-0025-PLDK-S-M-17 and 8.3.1-0009-PLDK-S-M-18 which relate to Front End Engineering Design (FEED) and permitting.

The completion of this Action will contribute to the implementation of the PCI cluster 8.3 (PCI 8.3.1 and 8.3.2) by taking crucial steps resulting in the construction and commissioning of the Baltic Pipe project.

Call year:
2014

Location of the Action:
Lithuania, Poland

Implementation schedule:
September 2014 to December 2019

Maximum EU contribution:
€10,152,087

Total eligible costs:
€20,304,174

Percentage of EU support:
50%

Beneficiaries:
AB "Amber Grid" (Lithuania)
http://www.ambergrid.lt

Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.5

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Preparatory works for the Gas Interconnection Poland-Lithuania up to building permission(s) obtainment

8.5-0045-LTPL-S-M-14

The Action contributes to the implementation of the Project of Common Interest (PCI) 8.5 Poland-Lithuania interconnection ("GIPL" or Gas Interconnection Poland-Lithuania), which is a gas pipeline that will connect the Polish and Lithuanian gas transmission systems.

This Action relates to the GIPL pipeline and its auxiliary installations. GIPL includes, on the Polish side, a gas pipeline between Hołowczyce and the PL-LT border (approx. range between 310 and 357 km, DN 700) and a compressor station in Gustorzyn; on the Lithuanian side, a gas pipeline between the PL-LT border and Jauniunai (approx. 177 km, DN 700) as well as gas pressure reduction and metering station(s) located near the PL-LT border.

The Action covers all of the pre-investment steps needed for the preparatory documentation and permits up to the actual building permission for the GIPL (tendering documentation for the localisation decision and territory planning, basic and detailed engineering studies, environmental impact assessment (EIA) and related activities for compressor stations, if applicable). The objective is to provide the Front-End Engineering Design (FEED), possible environmental approvals and legally binding permissions, which are a crucial step for the construction of GIPL.

Call year:
2014

Location of the Action:
Lithuania, Poland

Implementation schedule:
May 2016 to December 2021

Maximum EU contribution:
€266,386,516

Total eligible costs:
€443,967,571

Percentage of EU support:
60%

Beneficiaries:
Operator Gazociągow Przesyłowych GAZ-SYSTEM S.A. (Poland)
http://www.gaz-system.pl

AB "Amber Grid" (Lithuania)
http://www.ambergrid.lt

Status:
Ongoing

Energy corridor:
Baltic Energy Market Interconnection Plan in gas

Energy sector:
Gas

Project(s) of Common Interest:
8.5

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Gas (ENTSOG)
http://www.entsog.eu/

Construction of the Gas Interconnection Poland-Lithuania (GIPL) including supporting infrastructure

8.5-0046-PLLT-P-M-14

The Action contributes to the implementation of the Project of Common Interest (PCI) 8.5 Poland-Lithuania interconnection, currently known as GIPL.

The objective of the Action is to establish a physical interconnection between the Polish and Lithuanian gas transmission systems. The Action consists of the construction of the GIPL pipeline and its supporting infrastructure. GIPL includes, on the Polish side, a gas pipeline between Hołowczyce and the PL-LT border (approx. range between 310 and 357 km, DN 700) and on the Lithuanian side a gas pipeline between the PL-LT border and Jauniunai (approx. 177 km, DN 700). The supporting infrastructure includes the construction of a new compressor station in Gustorzyn in Poland, the extension, modernization of the pipeline to the Hołowczyce node, the extension of the Hołowczyce compressor station, as well as the construction of gas pressure reduction and metering station(s) located near the PL-LT border in Lithuania.

The implementation of GIPL will constitute an important element of expansion of the BEMIP gas network, connecting the isolated Baltic States to the EU gas market.

Furthermore, GIPL will open the way to new sources and routes of gas supplies, significantly enhancing the competitiveness and strengthening the liberalisation of the gas market in the Baltic countries.

10.

Smart grids deployment

Call year:
2016

Location of the Action:
Croatia, Slovenia

Implementation schedule:
November 2016 to November 2021

Maximum EU contribution:
€40,489,013

Total eligible costs:
€79,390,221

Percentage of EU support:
51%

Beneficiaries:
ELES, Ltd., Electricity Transmission System Operator (Slovenia)
http://www.eles.si

Croatian Transmission System Operator Ltd. (Croatia)
http://www.hops.hr

SODO Electricity Distribution System Operator d.o.o. (Slovenia)
http://www.sodo.si/en

HEP-Operator distribucijskog sustava d.o.o. (Croatia)
http://www.hep.hr

Status:
Ongoing

Energy corridor:
Smart grids deployment

Energy sector:
Smart grid

Project(s) of Common Interest:
10.3

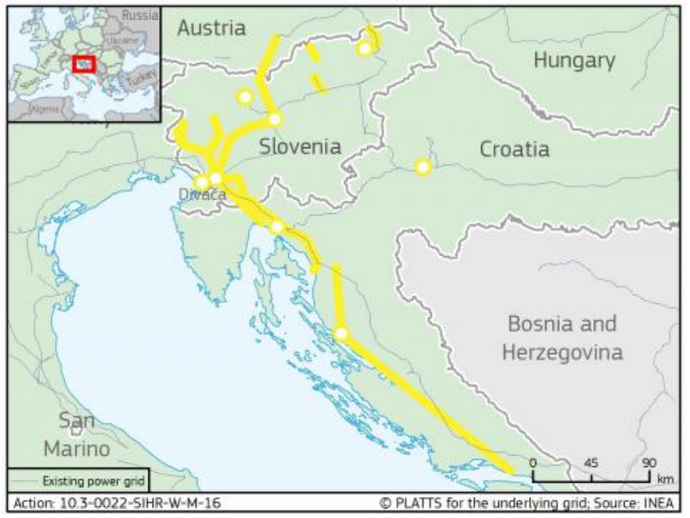
Additional information:
European Commission (DG ENER)
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)

Implementation of the SINCRO.GRID PCI – Phase 1

10.3-0022-SIHR-W-M-16



The Action contributes to the Project of Common Interest (PCI) 10.3 SINCRO.GRID (Slovenia/Croatia), which aims at solving network voltage, frequency control and congestion issues and enabling further deployment of renewables (RES) and displacement of conventional generation by integrating new active elements in the transmission and distribution grids into the virtual cross-border control centre based on advanced data management and common system optimisation. The Action aims to complete the PCI with the exception of one of the compensation devices in Slovenia which will be deployed at a later stage.

The scope of the Action comprises of the i) deployment of five compensation devices to address at cross-border level overvoltage and voltage instability issues within the regional transmission grid; ii) deployment of advanced dynamic thermal rating (DTR) systems in the Slovenian and Croatian transmission grids; iii) deployment of electricity storage systems; iv) integration of distributed renewable generation (DG); and v) deployment of a virtual cross-border control centre (VCBCC) consisting in dedicated IT infrastructure and software to be used by system operators for the efficient and coordinated management of RES.

Action Website:
https://www.sincrogrid.eu/en/

Implementation of the SINCRO.GRID PCI – Phase 2

10.3-0018-SI-W-M-18

Call year:
2018

Location of the Action:
Slovenia

Implementation schedule:
January 2019 to June 2022

Maximum EU contribution:
€1,645,201

Total eligible costs:
€3,225,885

Percentage of EU support:
51%

Beneficiaries:
ELES, Ltd., Electricity Transmission System Operator (Slovenia)
https://www.eles.si/en/

Status:
Ongoing

Energy corridor:
Smart grids deployment

Energy sector:
Smart grid

Project(s) of Common Interest:
10.3

Additional information:
European Commission (DG ENER)
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action finalises the implementation of the Project of Common Interest (PCI) 10.3 SINCRO.GRID (Slovenia/Croatia), which aims at solving network voltage, frequency control and congestion issues and enabling further deployment of renewables (RES) and displacement of conventional generation by integrating new active elements in the transmission and distribution grids into the virtual cross-border control centre based on advanced data management and common system optimisation. The Action complements the CEF co-funded Action 10.3-0022-SIHR-W-M-16 Implementation of the SINCRO.GRID PCI – Phase 1.

The Action's aim is the deployment of the compensation device in the substation Cirkovce (Slovenia), solving the deficiency of reactive power flexibility and improving voltage profile in the Slovenian as well as the Croatian electric power system.

The Action's scope consists of the preparation of tender documentation, public procurement, design, manufacturing and installation of the compensation device (variable shunt reactor) in the substation Cirkovce (Slovenia).

Once the Action is complete, the overall benefits of the PCI 10.3 will be materialised: bottlenecks will have been removed, cross-border power exchanges are stimulated and the renewable potential in Slovenia, Croatia and neighbouring countries is unlocked.

Action Website:
https://www.sincrogrid.eu/en/

ACON Smart Grids

10.4-0017-CZSK-W-M-18

Call year:
2018

Location of the Action:
Czech Republic, Slovakia

Implementation schedule:
October 2018 to December 2024

Maximum EU contribution:
€91,237,868

Total eligible costs:
€182,475,736

Percentage of EU support:
50%

Beneficiaries:
Západoslovenská Distribučná, a.s. (Slovakia)
https://www.zsdis.sk/

EG.D a.s. (Czech Republic)
https://www.eon-distribuce.cz/

Status:
Ongoing

Energy corridor:
Smart grids deployment

Energy sector:
Smart grid

Project(s) of Common Interest:
10.4

Additional information:
European Commission (DG ENER)
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

The Action fully implements the Project of Common Interest (PCI) 10.4 ACON which aims to foster the integration of the Czech and the Slovak electricity markets, increase the competition in the region, and ensure adequate quality, safety and reliability of electricity supply.

The Action's scope consists of modernisation and improvement of the distribution grid's efficiency at different locations in the Czech and Slovak territories, from construction and reconstruction of overhead lines, underground cables, transformer stations and cross-border interconnections, to installation of smart elements, new communication system (including infrastructure) and an integrated IT solution (software and hardware).

Once the Action is completed, the overall benefits of the PCI 10.4 will materialise: additional connection points, infrastructure as well as smart components will be delivered; voltage ratios as well as flexibility and efficiency of the distribution system will be improved.

Call year:
2018

Location of the Action:
France, Germany

Implementation schedule:
May 2018 to December 2019

Maximum EU contribution:
€1,171,500

Total eligible costs:
€2,343,000

Percentage of EU support:
50%

Beneficiaries:
Enedis S.A. (France)
https://www.enedis.fr/

energis-Netzgesellschaft mbH (Germany)
https://www.energis-netzgesellschaft.de/fuer-zuhause/startseite.html

Status:
Ongoing

Energy corridor:
Smart grids deployment

Energy sector:
Smart grid

Project(s) of Common Interest:
10.6

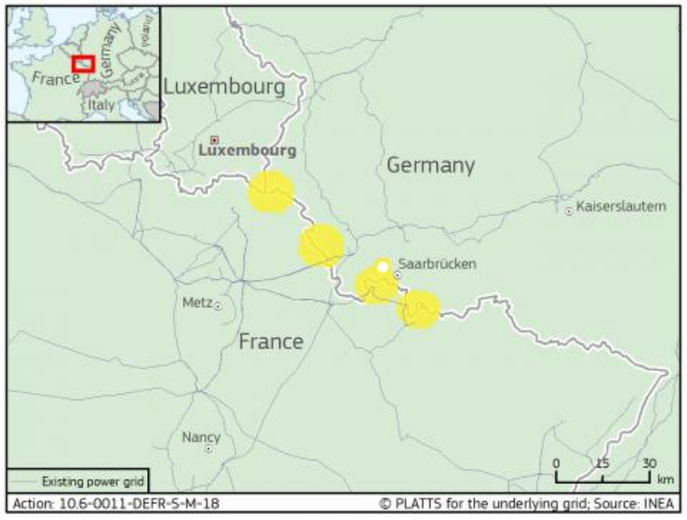
Additional information:
European Commission (DG ENER)
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Smart Border Initiative

10.6-0011-DEFR-S-M-18



The Action contributes to the implementation of the PCI 10.6 the Smart Border Initiative (France, Germany) which aims to design and implement a cross-border smart grid, connecting the distribution grids in the Lorraine and Saarland region via a AC or DC interconnector and integrating flexibility linked to smart mobility as well as energy efficiency/sector-coupling in the distribution grid.

The objective of the Action is to analyse how to physically interconnect the energy systems on both sides of the border in order to make a joint cross-border energy optimisation possible between the two regions.

The scope of the Action consists of studies focusing on the smart electricity infrastructure and its interfaces to cross-border smart mobility and multi-energy systems.

The deliverables of the Action are i) the identification of the optimal location of the PCI, ii) the definition of technical and regulatory challenges and solutions for a cross-border interconnector, including developing the use cases of the smart grid, estimating their associated costs and benefits and iii) the development of a tailor-made CBA methodology tool and a PCI specific CBA along with a sensitivity analysis.

Upon completion of the Action and in case of a positive CBA, the PCI will be ready to proceed to the final investment decision phase.

Action Website:
https://www.sbi-energy.eu

Call year:
2020

Location of the Action:
Hungary, Slovakia

Implementation schedule:
June 2020 to December 2025

Maximum EU contribution:
€101,931,000

Total eligible costs:
€291,231,428

Percentage of EU support:
35%

Beneficiaries:
Západoslovenská distribučná, a.s. (Slovakia)
E.ON Észak-dunántúli Áramhálózati Zrt. (Hungary)
Slovenská elektrizačná prenosová sústava, a.s. (Slovakia)

Status:
Ongoing

Energy corridor:
Smart grids deployment

Energy sector:
Smart grid

Project(s) of Common Interest:
10.7

Additional information:
European Commission (DG ENER)
http://ec.europa.eu/energy/en/topics/infrastructure

Agency for the Cooperation of Energy Regulators (ACER)
http://www.acer.europa.eu/

European Network of Transmission System Operators for Electricity (ENTSO-E)
http://www.entsoe.eu/

Danube InGrid

10.7-0008-SKHU-W-M-20

The Action fully implements the PCI 10.7 Danube InGrid, which aims to foster the integration of the Slovak and the Hungarian electricity markets, improve the efficient cooperation at the transmission and distribution levels, ensure adequate quality, safety and reliability of electricity supply and enhance the integration of Renewable Energy Sources (RES).

The Action's scope consists of construction and modernisation of grid elements in both countries, such as substations, transformer stations and lines, which will increase reliability of power supply and network stability. The installation of smart elements (i.e.: on-load tap changers, smart meters and fault indicators) linked to an upgraded communication structure such as new optical fibre and smart communication elements (i.e.: remote control and smart switches) will enable more efficient management and network control. Finally, the integration of IT solutions (i.e.: SCADA, GIS) will allow the beneficiaries to manage larger volumes of data, having a direct impact on the asset management processes and optimization of network operations.

Once the Action is completed, the overall benefits of the PCI 10.7 will materialize: reduction of negative environmental impacts of energy usage in the region, reduction of electricity prices and security of supply for the end-users.

12.

Cross-border carbon dioxide network

Call year:
2018

Location of the Action:
United Kingdom

Implementation schedule:
May 2018 to March 2019

Maximum EU contribution:
€374,138

Beneficiaries:
Pale Blue Dot Energy Limited (United Kingdom)
http://www.pale-blu.com

Status:
Closed

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

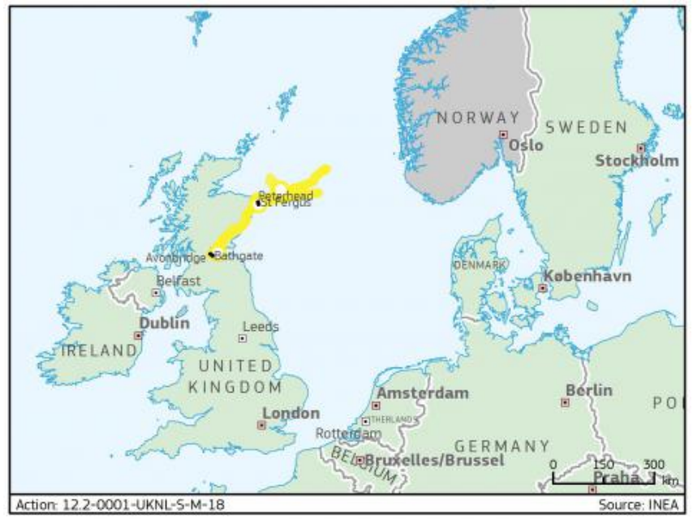
Project(s) of Common Interest:
12.2

Executive summary:
Executive Summary available here.

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Feasibility Study for Acorn CO_2 SAPLING Transport Infrastructure Project

12.2-0001-UKNL-S-M-18



This Action was part of PCI 12.2 "CO_2-Sapling Transport and Infrastructure Project (United Kingdom, in further phases Netherlands and Norway)". This PCI aims to establish a transnational CO2 transportation infrastructure capable of delivering over 12 Mt/y of CO_2 from emission sources around the North Sea for permanent sequestration in deep geological storage sites beneath the North Sea. This PCI will develop CO_2 transport infrastructure by re-using existing and not yet decommissioned oil & gas assets in the North Sea.

The Action has provided a technical feasibility study for the CO_2 transport infrastructure by identifying costs, technical issues and risks associated and has developed a model for its technical and commercial operability. The Action was composed of four activities, three of which related to transport feasibility of offshore and onshore pipelines and ship import/export facilities, and one support activity related to the management of the Action.

The completion of the Action has enabled the project to move into the detailed Front-End Engineering Design (FEED) and into reaching a final investment decision (FID) for the core transport infrastructure, which is expected to start around 2020 and to be followed by construction phase as of 2023.

Call year:
2018

Location of the Action:
United Kingdom

Implementation schedule:
November 2018 to October 2021

Maximum EU contribution:
€2,803,727

Total eligible costs:
€5,607,454

Percentage of EU support:
50%

Beneficiaries:
Pale Blue Dot Energy Limited (United Kingdom)
https://pale-blu.com

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

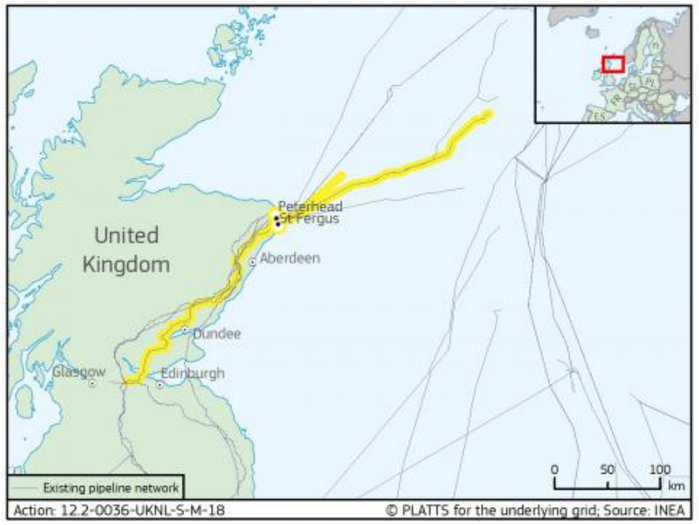
Energy sector:
CO_2

Project(s) of Common Interest:
12.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Pre Project Engineering for CO_2 SAPLING Transport Infrastructure Project

12.2-0036-UKNL-S-M-18



This Action is part of PCI 12.2 "CO_2-SAPLING Transport and Infrastructure Project", which aims to establish a transportation infrastructure capable of delivering over 12 Mt/y of CO_2 from emission sources around the North Sea for permanent CO_2 sequestration in deep geological storage sites located beneath the North Sea.

This Action involves a Front-End Engineering Design (FEED) study of the CO_2 transport infrastructure and the inspection of the Atlantic/Goldeneye pipeline, both former natural gas transmission pipelines between St Fergus gas terminal in UK and potential North Sea CO_2 storage locations. It will also include studies on the health, safety and environmental aspects of the infrastructure and the feasibility study of export/import facilities at the Peterhead port in UK which would among others allow for development of common standard technical requirements and operating procedures. It builds upon the CEF funded Action 12.2-0001-UKNL-S-M-18, ''Feasibility Study for Acorn CO_2 SAPLING Transport Infrastructure Project".

Upon completion of the Action, the design of the pipeline and of subsea elements, the cost base of the PCI and the business model will allow for Final Investment Decision (FID) to be taken at a later stage for the entire capture-transportation-storage chain.

Call year:
2020

Location of the Action:
United Kingdom

Implementation schedule:
September 2020 to March 2023

Maximum EU contribution:
€6,722,441

Total eligible costs:
€13,444,882

Percentage of EU support:
50%

Beneficiaries:
Pale Blue Dot Energy Ltd (United Kingdom)
https://pale-blu.com/

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

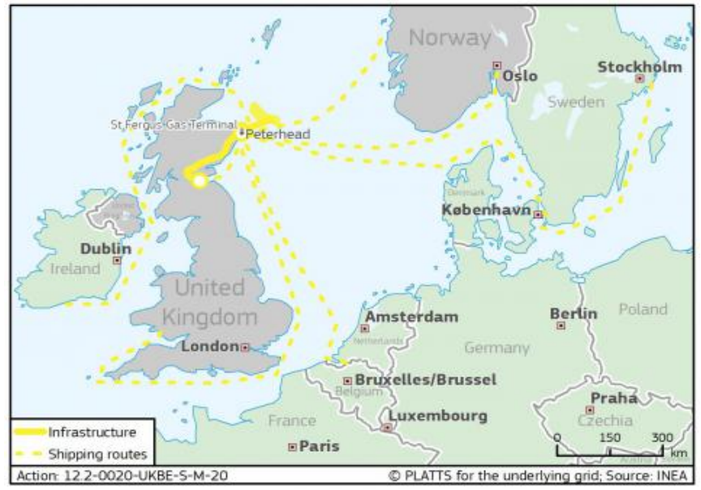
Energy sector:
CO_2

Project(s) of Common Interest:
12.2

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Cross-Border Pre-Project Engineering for Acorn CO_2-SAPLING Transport and Infrastructure Project

12.2-0020-UKBE-S-M-20



The Action is part of the Project of Common Interest (PCI) 12.2 CO_2 Sapling. This PCI aims to establish a strategic transnational CO_2 transportation infrastructure capable of delivering over 12 Mt CO_2/year from emissions sources around the North Sea for permanent sequestration in offshore geological storage. PCI 12.2 is the transportation infrastructure component of the Acorn full chain Carbon Capture and Storage (CCS) project.

The main objective of the Action is to progress the CO_2 import/export facilities and infrastructure between the Port of Peterhead and the Acorn CCS hub at St Fergus in the UK. The scope is to undertake the necessary Front End Engineering Design(FEED) studies. The Action will also enhance the maturity of the offshore build-out requirements to accommodate the additional CO_2 volumes from import and to allow the operator support and subsea activity for the inline pipeline survey. It also includes the Health, Safety and Environment (HSE), commercial, finance and stakeholder activities required to support the technical activities.

Once completed, the Action will result in a significant proportion of the technical studies finalised in view of reaching a Final Investment Decision (FID) for the CO_2 import/export facilities and infrastructure between the Port of Peterhead and St Fergus Gas Terminal.

Action Website:
https://theacornproject.uk/about/

Call year:
2018

Location of the Action:
Netherlands

Implementation schedule:
March 2019 to June 2021

Maximum EU contribution:
€6,518,350

Total eligible costs:
€13,036,700

Percentage of EU support:
50%

Beneficiaries:
Havenbedrijf Rotterdam N.V. (Netherlands)
https://www.portofrotterdam.com/en

N.V. Nederlandse Gasunie (Netherlands)
https://www.gasunie.nl/en

EBN B.V. (Netherlands)
https://www.ebn.nl/en/

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

Project(s) of Common Interest:
12.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Rotterdam CCUS project - PORTHOS

12.3-0022-NL-S-M-18

This Action is part of the Project of Common Interest (PCI) 12.3 "The Rotterdam Nucleus (Netherlands and United Kingdom)" that relates to the development of a high-volume CO_2 transportation infrastructure system from the onshore large point sources in the Port of Rotterdam to the CO_2 storage locations in the Dutch and UK parts of the North Sea.

The Action will deliver the Front-End Engineering Design (FEED) of the onshore and offshore pipelines and the compressor station, which together will form the CO_2 transport infrastructure system around the Port of Rotterdam. It will also deliver a Cost-Benefit Analysis (CBA), including cost estimates, study and negotiations on the terms with gas field operators, signature of a joint development agreement with a group of emitters and the setting up of a commercially viable business case.

The results of this Action will determine the feasibility of the realisation of the cross-border CO_2 transport infrastructure in the North-West Europe and it will lead to an increased maturity of the PCI providing the relevant information to the promoter for the purpose of the final investment decision (FID).

Action Website:
https://www.porthosco2.nl/en/project/

Call year:
2020

Location of the Action:
Netherlands

Implementation schedule:
July 2020 to December 2024

Maximum EU contribution:
€102,135,856

Total eligible costs:
€255,339,640

Percentage of EU support:
40%

Beneficiaries:
Havenbedrijf Rotterdam N.V. (Netherlands)
N.V. Nederlandse Gasunie (Netherlands) EBN B.V. (Netherlands) Porthos Development CV (Netherlands)

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

Project(s) of Common Interest:
12.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

PORTHOS CO_2 transport network

12.3-0022-NL-W-M-20

The Action is part of the Project of Common Interest (PCI) 12.3 CO_2 TransPorts. The PCI consists of the development of an open access cross-border CO_2 transport network for the transport of CO_2 from industrial sources in the ports of Rotterdam, Antwerp and North Sea Port (Ghent) to offshore storage locations in depleted gas fields in the North Sea. The PCI foresees three phases of implementation. The current Action implements the first phase, consisting on the realisation of the Port of Rotterdam CO_2 Transport Hub and Offshore Storage (Porthos) until 2024.

The main objective of the Action is the construction of a CO_2 transport backbone in the port of Rotterdam area able to transport CO_2 to the depleted gas fields in the North Sea via the P18A offshore platform. It includes the construction and commissioning of a 33 km onshore pipeline connecting industrial emitters in the port of Rotterdam, a 20 MW compressor station and a 20 km offshore pipeline transporting the compressed captured CO_2 for storage in the Dutch section of the North Sea. In the first operational phase, the pipelines will have a capacity of 5 $MtCO_2$/year, with provisions to upgrade the capacity to 10 $MtCO_2$/year.

The Action will result in the realisation of the Porthos CO_2 transport network, fully achieving the first phase in the PCI implementation.

Call year:
2020

Location of the Action:
Belgium, Netherlands

Implementation schedule:
October 2020 to December 2022

Maximum EU contribution:
€5,785,000

Total eligible costs:
€11,570,000

Percentage of EU support:
50%

Beneficiaries:
Havenbedrijf Antwerpen NV van publiek recht (Belgium) Fluxys SA (Belgium)

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

Project(s) of Common Interest:
12.3

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Antwerp CO_2 Collection Network and Cross-border Pipeline - Studies

12.3-0027-BENL-S-M-20

This Action is part of the Project of Common Interest (PCI) 12.3 "CO_2 TransPorts", which contributes to the development of an open access cross-border CO_2 network including infrastructure to facilitate large-scale capture, transport and storage of CO_2 from emission sources in Rotterdam, Antwerp and the North Sea Port.

The Action will deliver the Front-End Engineering Design (FEED) studies for the Antwerp CO_2 Collection Network and related infrastructure. The FEED studies will define technical requirements and identify design parameters for the PCI, which will provide greater certainty on overall costs and key risks. The Action activities will address commercial barriers and deliver a Cost-Benefit Analysis (CBA), including cost estimates. They will also include an Environmental Impact Assessment (EIA) and a technical dossier to be submitted to the competent authority for obtaining the installation permit.

The results of this Action will bring the PCI to the required level of maturity to reach the Final Investment Decision (FID), in view of proceeding with the further stage of the PCI implementation consisting on the construction of the infrastructures.

Call year:
2020

Location of the Action:
Belgium

Implementation schedule:
October 2020 to June 2022

Maximum EU contribution:
€3,187,500

Total eligible costs:
€6,375,000

Percentage of EU support:
50%

Beneficiaries:
Havenbedrijf Antwerpen NV van publiek recht (Belgium) Fluxys SA (Belgium) Air Liquide Industries Belgium (Belgium) Total Raffinaderij Antwerpen NV (Belgium)

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

Project(s) of Common Interest:
12.4

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

Antwerp Liquid CO_2 Export Terminal Studies

12.4-0010-BE-S-M-20

This Action is part of the Project of Common Interest (PCI) 12.4 "Northern lights project", which aims to transport the captured CO_2 by ship to a storage site on the Norwegian continental shelf. The PCI mainly consists of shipping routes connecting Eemshaven (NL) and Teesside (UK) to storage sites in Norway. The primary aim of the PCI is to build a flexible and reliable transport and storage platform for Carbon Capture and Storage (CCS) accessible across Europe.

The Action will deliver the Front-End Engineering Design (FEED) studies for the construction of a CO_2 Liquid Export Terminal, which includes the liquefaction unit, the buffer storage and the marine offloading facilities. The FEED will define technical requirements and identify design parameters for the PCI, which will provide greater certainty on overall costs and key risks. The Action will address commercial barriers and deliver a Cost-Benefit Analysis (CBA), including cost estimates. It will also include an Environmental Impact Assessment (EIA) and a technical dossier to be submitted to the competent authority for obtaining the installation permit.

The results of this Action will bring the PCI to the required level of maturity to allow for the Final Investment Decision (FID) and will provide sufficient definition to tender the subsequent EPC contract.

Call year:
2020

Location of the Action:
Netherlands

Implementation schedule:
November 2020 to August 2023

Maximum EU contribution:
€15,371,781

Total eligible costs:
€30,743,562

Percentage of EU support:
50%

Beneficiaries:
N.V. Nederlandse Gasunie (Netherlands)
https://www.gasunie.nl/

EBN B.V. (Netherlands)
https://www.ebn.nl/

Havenbedrijf Amsterdam N.V. (Netherlands)
https://www.portofamsterdam.com/nl

Status:
Ongoing

Energy corridor:
Cross-border carbone dioxide network

Energy sector:
CO_2

Project(s) of Common Interest:
12.5

Additional information:
European Commission, DG ENER
http://ec.europa.eu/energy/en/topics/infrastructure

ATHOS

12.5-0014-NLIE-S-M-20

The Action is part of Project of Common Interest (PCI) 12.5 Amsterdam-IJmuiden CO_2 Transport Hub & Offshore Storage – ATHOS, which entails the development of a large-scale, open-access interoperable high-volume CO_2 transportation infrastructure from mainland Europe and Ireland to CO_2 storage locations in the Dutch section of the North Sea. The project has the potential to transport 100 $MtCO_2$ cumulatively over a 20-year period. The ATHOS infrastructure consists of a central backbone of three onshore pipeline segments and a compressor station connecting to an offshore pipeline towards a storage location. The study stage of phase I (the Action) will contribute to realisation of a backbone transport infrastructure with a capacity of 8 $MtCO_2$/year.

The main objective of the Action is the execution of studies (including pre-Front-End Engineering Design (FEED) and environmental impact analysis) for developing CO_2 transport infrastructure starting in the North Sea Channel area.

The Action will be the first step in the realization of the ATHOS PCI (phase I). The studies in this Action constitute therefore an essential step towards further stages in the implementation of the PCI.

FOR MORE INFORMATION

European Climate, Infrastructure and Environment Executive Agency (CINEA)

European Commission
W910
B-1049 Brussels, Belgium
+32 (0)2 299 5252

https://cinea.ec.europa.eu

cinea@ec.europa.eu

@cinea_eu

CINEA – European Climate, Infrastructure and Environment Executive Agency

CINEA Executive Agency

Share your thoughts about this brochure!

Please take a moment to fill out the survey below:

https://europa.eu/!Fj68YM

EF-09-21-174-EN-N

Publications Office
of the European Union