Thematic Steering Group

for Pillar 2 - Connecting the Region (TSG2)

Book of EUSAIR-labelled Projects on Energy Networks for the Adriatic and Ionian Region

June 2023

Premise and objective of the Book

1. This Book of EUSAIR-labelled projects on energy networks for the Adriatic and Ionian Region is presenting and describing a set of projects which are considered to have the highest positive impact on the largest number of EUSAIR Participating Countries while providing benefits to the Adriatic and Ionian Region. General aims are at enhancing the security of energy supply, promoting sustainable energy development, increasing energy competitiveness and affordability while confronting the climate change challenge.

The EUSAIR-labelled projects on energy networks are designed to improve the energy connectivity through the Region, to contribute to its integration and cohesion and facilitate the access of non-Member Countries to the European Union.

2. The European Union Strategy for the Adriatic and Ionian Region, the EUSAIR is based upon two documents: a Communication from the European Commission to other European Union Institutions (COM (2020) 357 final) and the accompanying Action Plan (SWD (2020) 57 final) which complements the Communication.

The EUSAIR has 10 Participating Countries, namely Albania, Croatia, Bosnia and Herzegovina, Greece, Italy, Montenegro, North Macedonia, San Marino, Serbia, and Slovenia as well as the system of Regions of Italy near to the Adriatic and Ionian Sea.

The Action Plan of the Strategy is organised according to four Pillars where Pillar 2 and its Thematic Steering Group aim at Connecting the Region. Coordinating Countries of EUSAIR Pillar 2 are Italy, North Macedonia and Serbia.

3. The collection of the EUSAIR-labelled projects on energy networks is the result of work done by the EUSAIR Thematic Steering Group of Pillar 2. Connecting the Region – Sub-Group on Energy Networks and its Standing Members during the years 2014-2023 of the first EUSAIR Programme. Project proposals have been prepared by the Sub-Group Standing Members, through their Templates, circulated and revised and eventually approved. The consulting

company NE Nomisma Energia Srl of Italy provided valuable technical assistance and support through this process.

4. The Book is mainly addressed to the EUSAIR Governing Board, to the European Commission, to the European Investment Bank and other financial institutions, to the institutional stakeholders through the Adriatic and Ionian Region.

Purposes for developing this Book include highlighting projects of macro-regional relevance, enhancing stakeholders' interest and engagement on the EUSAIR-labelled projects, maximising the impact of projects' results, strengthening citizens' awareness and acceptance, boosting the visibility of EUSAIR-labelled projects while capitalising the work done by the TSG2 Sub-Group on Energy Networks so far.

5. Projects have been given the EUSAIR-label according to the "Guiding Principles underpinning the labelling process common to all Thematic Steering Groups" as approved by the EUSAIR Governing Board on February 2018.

It can be recalled that according to these Guiding Principles the labelling process is entailing two steps:

First step, candidate projects are pre-screened against six Broad Criteria as set in the EUSAIR Action Plan;

Second step, candidate projects are then screened according to a set of Specific Criteria decided by the Thematic Steering Group with a view at the objectives and approach specific to the Pillar.

The six EUSAIR Broad Criteria common to all four EUSAIR Pillars, are:

a) Address EUSAIR priorities and well-substantiated needs expressed by Countries, Regions and stakeholders or the European Commission and be widely supported. The project should contribute to the objectives laid down in the EUSAIR Communication and Action Plan and present strong linkages to European Union policies relating directly the four Pillars.

b) Demonstrate a transnational, if not macro-regional, scope or impact.

c) Be realistic and credible, or the project should be technically and financially feasible and based upon an overall agreement between national/regional authorities of Countries concerned and stakeholders, be sustainable over time once the project period has expired.

d) Build upon existing initiatives and have reached a fair degree of maturity.

e) Pay attention to cross-cutting aspects, projects should address, as appropriate, capacity-building, including communication (for raising public awareness and support), research and innovation as well as climate change mitigation and adaptation and disaster risk management.

f) be coherent and mutually supportive to complement and re-enforce results and/or impacts of other initiatives under the same or the other three Pillars.

Ten Specific Criteria as set and endorsed by the TSG2 Sub-Group on Energy Networks on 24 November 2017 are divided into two tiers, where the first tier includes high-priority Specific Criteria, while the second tier includes the other Specific Criteria:

First tier of Specific Criteria:

a) Increase security of energy supply (through diversification of energy sources, energy routes, facilities and technologies).

b) Cope with climate change concerns and commitments (in particular, with the objectives of reduction of greenhouse gas emissions as foreseen by the COP21 Paris Agreement of 2015 and the following EU decisions).

c) Enhance economic competitiveness while increasing energy availability and accessibility.

d) Allow a clear potential for involving local (i.e. national) entrepreneurship and human capital.

e) Be consistent and compatible whenever applicable, with similar project and measure proposals made within concurrent multilateral collaborations or co-operations having their interests in the macroregion (such as Energy Community, CESEC, WB6, and others).

Second tier of Specific Criteria:

f) Ensure that project be feasible and eventually implementable by the year 2030, while considering longer term implications (with a view to the EU energy road-map to year 2050).

g) Improve energy networks integration and energy market coupling amongst Countries and subjects involved.

h) Avoid duplication of efforts and ensure compatibility with other proposed projects and measures while favouring overall rationalisation of investments and synergistic effects.

i) Enable whenever feasible, deployment of renewable energy sources, increase in energy efficiency, promotion of low-carbon energy technologies.

j) Ensure early involvement of major regional stakeholders in the process leading to eventual project and measure implementation (in particular, involvement of financial institutions, energy regulators, transmission system operators and others as circumstances might suggest or require).

6. An initial list of EUSAIR-labelled projects for energy networks has been defined and agreed upon by the EUSAIR TSG2 Sub-Group on Energy Networks during their 6th Meeting held in Rome on 20-21 April 2017. The initial list was open to further ideas for projects and integrations which were presented and discussed during Meetings to follow until 21 April 2023.

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Chapter A. List of abbreviations and acronyms

ACER	Agency for the Cooperation of Energy Regulators
AL	Albania
AT	Austria
BA	Bosnia and Herzegovina
Bcm	Billion cubic meters
bcm/y	Billion cubic meters per year
BES	Balkan Energy School
BG	Bulgaria
CAM NC	Network Code for Capacity Allocation Mechanisms
CAPEX	CAPital EXpenditure
CBA	Cost Benefit Analysis
CEF	Connecting Europe Facility
CEI	Central Europe Initiative
CEO	Chief Executive Officer
CESEC	Central and South Eastern Europe Energy Connectivity
CGES	Montenegrin Electric Transmission system
COD	Commercial Operation Date
CONNECTA	Technical Assistance to Connectivity in the Western Balkans
COP	Conference of the Parties
CSE	Central and South East
CY	Cyprus
DSDP	Detailed Site Development Plan
EBRD	European Bank for Reconstruction and Development
EEPR	European Energy Programme for Recovery
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EL	Electricity
EMS	Elektromreza Srbije
EnC	Energy Community
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSO-G	European Network of Transmission System Operators for Gas
EPCI	Engineering, Procurement, Construction and Installation
ESIA	Environmental and Social Impact Assessment

EU	European Union
EUSAIR	EU Strategy for the Adriatic-Ionian Region
FBA	Federation of Bosnia and Herzegovina
FEED	Front End Engineering Design
FID	Final Investment Decision
FS	Feasibility Study
FSRU	Floating storage and regasification unit
GCA	Grid Connection Agreement
GR	Greece
GRITA	Power Link between Greece and Italy
GWh	GigaWatt hour
H.D.D.	Horizontal Directional Drilling
H2	Hydrogen
HOPS	Independent Transmission System Operator in Croatia
HR	Croatia
HVDC	High Voltage Direct Current
IAP	Ionian Adriatic Pipeline
IPA	Instrument for Pre-Accession Assistance
IPs	Interconnection Points
IT	Italy
KfW	Kreditanstalt für Wiederaufbau
kV	KiloVolt
LBM	Liquified Biomethane
LNG	Liquified Natural Gas
LSM	Liquified Synthetic Methane
MAECI	Ministry of Foreign Affairs and International Cooperation
mcm/day	Million cubic meters per day
ME	Montenegro
MED	Mediterranean
mEUR	Million EURO
MK	North Macedonia
MoEES	Ministry of Environment and Energy Security
MONITA	Power Link between Montenegro and Italy
MOU	Memorandum of Understanding
MW	MegaWatt

NDP	National Development Plan
NECP	National Energy and Climate Plan
NIF	Neighbourhood Investment Facility
Nm3/h	Normal cubic meter per hour
NRA	National Regulatory Authority
OHL	Overhead Line
PCI	Projects of Common Interest
PE EPS	Public Enterprise Electric Power Industry of Serbia
PECI	Projects of Energy Community Interest
PMI	Projects of Mutual Interest
PQ	Performance Qualification
PSHPP	Pumped-Storage Hydroelectric Power Plant
Q	Quarter
RA	Regulatory Authorities
RES	Renewable Energy Sources
RS	Serbia
SEE	South Eastern Europe
SGC	Southern Gas Corridor
SI	Slovenia
SS	Substation
ssLNG	Small Scale Liquified Natural Gas
TANAP	Trans-Anatolian Pipeline
TAP	Trans-Adriatic Gas Pipeline
TEN-E	Trans-European Networks for Energy
TEN-T	Trans-European Networks for Energy
TOR	Terms of Reference
TRA	Transmission
TSGs	Thematic Steering Groups
TSO	Transmission System Operator
TYDP	Ten-Year Development Plan
TYNDP	Ten-Year National Development Plan
USAID	United States Agency for International Development
WB6	Western Balkans 6
WBIF	Western Balkans Investment Framework

Chapter B. The Template for collecting data and information

The Template aims at collecting information and data with regard to the projects and on energy networks which are proposed for the EUSAIR-labelling. Not all the information and data foreseen by the Template were available, and many of them changed over time. A continuing process of updating and improvement was implemented under the responsibility of the representatives of the Country (the Lead Country) which is submitting the project or measure.

Concerning the several items as included in the Template a short explanation is in the following.

1. Country - Lead Country, i.e. the EUSAIR Member State (or Member States) which is (are) proposing and/or promoting the project or measure on energy networks.

2. Date – Date of the submission or date of the last updating of information and data.

3. Project title – Official title of the project adopted by the Country. The title may or may not coincide with the title assigned to the project by entities such as ENTSO-E, ENTSO-G, Energy Community, Central and South Eastern Europe Energy Connectivity (CESEC), WBIF, ACER, EIB, EBRD, others). Project ID and/or code(s) when available.

4. Project description – Description of the project, its objectives, its location when applicable, added value for the EUSAIR (with reference to the Guiding Principles underpinning the labelling process and common to all TSGs of February 2018 as well as with reference to the specific goals adopted by the EUSAIR TSG2 Sub-Group on Energy Networks), project beneficiaries, envisioned relations with other projects for the Adriatic-Ionian Region, implications and relations with neighbouring Countries and Regions when relevant.

5. Project promoters – Organisation, administration, company proposing and/or promoting the project. The same project can be proposed and/or promoted by more than one entity.

6. Period of realisation/commissioning year – Established and/or proposed dates and deadlines for all the steps and phases of the project until its completion.

7. Total financial amount of the project – Information and data refer to two prongs as in the following:

a) Provided financial amount and sources of financement – Information and data regarding the financial means for financing the project until its completion. Sources of financement either public or private (data in EUR). Information and data regarding the

financial means which have been already provided or allocated and their sources of financement.

b) Financial amount to be provided and sources of financement – Estimate of the amount of money which should be provided for financing the project and possible sources for financement.

8) Status of the project– Information and data refer to three prongs as in the following.

a) Project documents – Information and data regarding the planning of the project, pre-feasibility and feasibility studies, economic analysis, environmental impact assessment, social implications and public acceptance, relations with EU projects and other programmes.

b) Construction/implementation work – Status and progress of the project, authorisations and permits, commissioning of the project, components and material supply, delivery and relations with potential users, planned implementation of the measure.

c) Main problems – Information and data concerning delays, roadblocks, unforeseen or unexpected difficulties, adaptation to changing context, alternative options when envisaged.

9) Other information and data – Any information and data which are not included under the several items as above. Information and data can be provided when they appear of importance for the development and accomplishment of the project under consideration.

Chapter C. Description of the EUSAIR-labelled projects on energy networks

Projects as described are in different situations regarding their implementation and advancements.

Most of the EUSAIR-labelled projects are divided according to clusters of projects which include some thirty single large projects requiring significant investments and financing. Quite a few of these projects appear to be in their turn made by sub-clusters entailing groups of actions and measures as well as several steps towards their implementation.

Ten project cluster are described in detail as in the present Chapter of the Book.

1. Transbalkan Electricity Corridor (Lead Countries: Bosnia and Herzegovina, BA – Croatia, HR – Montenegro, ME – Serbia, RS)

The Transbalkan Electricity Corridor is a cluster of projects consisting in new electricity transmission lines, their reinforcements and links. The main goal is strengthening of the important regional and pan European energy paths in directions from the northeast to the southwest and from east to west. Realization of Transbalkan corridor is fully in line with three basic goals of EU energy policy: increasing of security of supply, integration of renewable generation\ and establishing internal electric energy market across Europe, and is accordingly recognised in ENTSO-E pan European TYNDP as well as in the appropriate Regional Investment Plan of ENTSO-E and supported by EC.

Energy Community marked all Sections of Transbalkan corridor as projects of the highest regional interest within the process of building the PECI list (PECI, Projects of Energy Community Interest).

In the TYNDP 2022, Transbalkan Electricity Corridor is the project that connects Romania with Serbia (Resica - Pancevo), then it goes through western Serbia to Montenegro (projects from 1.1 to 1.5 of this Book).

Projects 1.6 and 1.7, interconnection between Bosnia and Herzegovina and Croatia are not part of Transbalkan Electricity Corridor. This first is called Project 343. CSE1 New and second Project 241 in the TYNDP 2022. CSE1 project will contribute in strengthening Croatian transmission grid along its main north-south axis (in parallel with eastern Adriatic coast) allowing for additional long-distance power transfers (including cross border) from existing and new planned power plants (RES/wind/ and conventional/hydro and thermal/) in Croatia (coastal parts) and Bosnia and Herzegovina to major consumption areas in Italy (through Slovenia) and north Croatia.

For the purposes of this book and in response to the TSG2 Priority action: Construction of new transmission capacities and smart grids to achieve a balanced, sustainable and timely development of an interconnected electricity system, all these projects are grouped under the same cluster, that of Transbalkan Electricity Corridor.

Lead countries are: Bosnia and Herzegovina, Croatia, Montenegro and Serbia.

1.1 New 400 kV OHL SS Kragujevac 2 (RS) – SS Kraljevo 3 (RS) with Voltage Level Upgrade of SS Kraljevo 3 (RS) to 400 kV (RS)

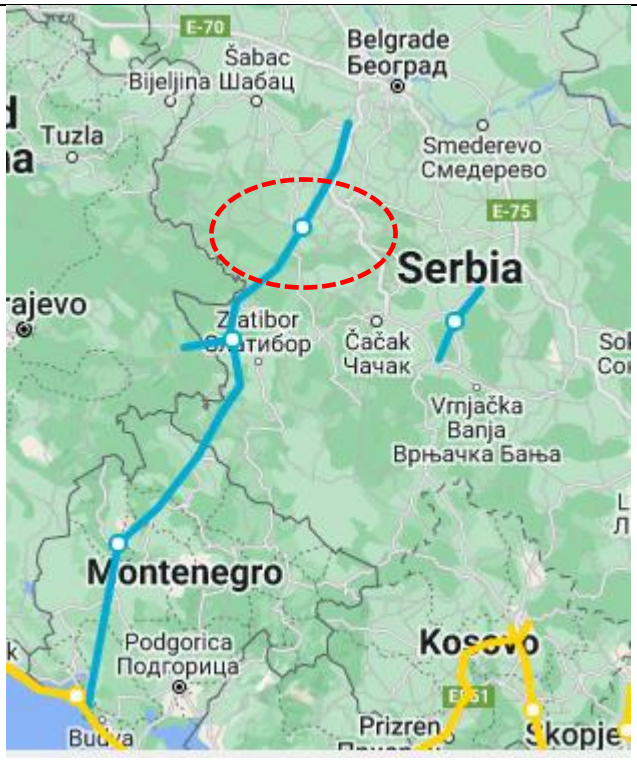
COUNTRY Serbia		DATE June 2023
Project title		**New 400 kV OHL SS Kragujevac 2 (RS) – SS Kraljevo 3 (RS), with voltage level upgrade in SS Kraljevo 3 (RS) to 400 kV voltage level (part of Trans-Balkan corridor)** Project ID in TYNDP 227 Transbalkan Corridor TYNDP history: TYNDP 2012, TYNDP 2014, TYNDP 2016, TYNDP 2018, TYNDP 2020, TYNDP 2022 Project code in PECI: EL_01a
Project description		New 400 kV OHL between Kragujevac - Kraljevo with the upgrade of Kraljevo substation to 400 kV voltage level is a part of a wider project to further transition to 400 kV voltage in central and western Serbia. The length of this OHL is 60 km. It accounts for one of the four first phase Transbalkan corridor infrastructure investment items, due to be completed by 2027
Project promoters		AD Elektromreza Srbije (EMS) Promoting countries: RS
Period of realisation/commissioning year		Construction: 2020 – 2022. Commissioning: June 2022.
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	KfW, 15 mEUR (December 2016) IPA/NIF, 6.468 mEUR (December 2016)
	Financial amount to be provided and sources of financement	Total CAPEX 27.5 mEUR
Status of the project in the	*Project documents*	Pre-feasibility study completed in 2014. Feasibility study and Preliminary design finished in 2015. ESIA

process of realisation	*Construction/implementation work*	finished in 2016. Detailed design finished in 2017. Project prefeasibility assessment completed. Building permit for the works in S/s Kraljevo 3 and S/s Kragujevac 2 were obtained in 2016. Building permit for the transmission line was obtained in February 2018. The project was enlisted in EMS' investment plan 2018-2020 which was approved by Serbian regulator (AERS). Contract for OHL construction was signed in March 2020, and contract for SS was signed in September 2020. Construction has started in May 2020. The construction of the OHL and one 400 kV OHL bay in S/S Kragujevac 2 with voltage level upgrade in S/S Kraljevo 3 to 400 kV is completed and completely energised on 09 June 2022.
	Main problems	
Other information and data		

1.2 New Double Circuit 400 kV OHL SS Obrenovac (RS) – SS Bajina Basta (RS) with Voltage Level Upgrade of SS Bajina Basta (RS) to 400 kV

COUNTRY Serbia		DATE June 2023
Project title		**New double circuit 400 kV OHL SS Obrenovac (RS) – SS Bajina Basta (RS) with upgrade of SS Bajina Basta (RS) to 400 kV (part of Trans-Balkan corridor)** Project ID in TYNDP 227 Transbalkan Corridor TYNDP history: TYNDP 2012, TYNDP 2014, TYNDP 2016, TYNDP 2018, TYNDP 2020, TYNDP 2022 Project code in PECI: EL_01b
Project description		Upgrade of the transmission network in western Serbia to 400 kV between S/s Obrenovac and S/s Bajina Basta, which implies a new 2x400 kV transmission line S/s Obrenovac – S/s Bajina Basta, reconstruction of existing S/s Obrenovac and upgrade of SS Bajina Basta to 400 kV level accounts for one of the four first phase Transbalkan corridor infrastructure investment items, due to be completed by 2026. The length of this OHL is 109 km.
Project promoters		AD Elektromreza Srbije (EMS) Promoting countries: RS
Period of realisation/commissioning year		Construction: Q2 2024 – Q3 2026 Commissioning: Q3 2026
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	KfW: 40 mEUR (Decembre 2020) IPA/NIF: 12.8 mEUR (February 2021)
	Financial amount to be provided and sources of financement	RS: 30,63 mEUR (WBIF Grant+KfW Loan) Total CAPEX was 58.95 mEUR. Due to large changes in market prices – primarily the price of steel has changed, but also of works and other materials and equipment – there was a significant deviation of the estimated cost of the project in relation to the agreed

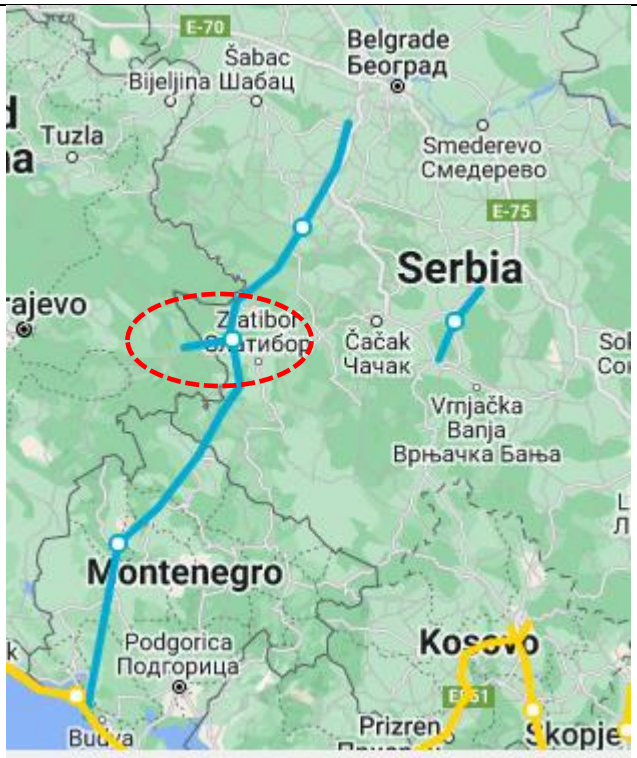
		values of the grant (WBIF) and the loan (KfW). New estimated project costs are 89.58 mEUR. In March 2022, JSC EMS applied for the additional investment grant in the amount of 6.13 mEUR. Approving of application for additional investment funds (loan and grant) through the written procedure is a necessary condition in order to proceed with the selection of the contractor for this project.
Status of the project in the process of realisation	*Project documents*	Project pre-feasibility assessment completed in March 2010. Adoption to the national legislative finished in December 2017.
	Construction/implementation work	Feasibility Study, Preliminary Design and Environmental Impact Assessment Study, funded by WBIF, were completed in 2011. However, due to incoherencies with the national legislation, KfW grant in amount of 250,000 EUR was received for adapting the studies to the national legislation, which was done in December 2017. KfW provided support in obtaining a WBIF grant of 0.8 mEUR for the development of the missing technical documentation (Design for Building Permit and Project execution plan). A consultant has been selected to develop the Terms of Reference (ToR) for the missing technical documentation. The ToR has been developed by the Consultant and approved by KfW. Technical documentation preparing started in May 2019. Design for construction permit for OHL and SS and Design for construction for OHL are completed. Construction permit for SS has been obtained in April 2021. Construction permit for OHL has been obtained in June 2022. The land expropriation process for OHL is in progress. Process of the selection of the Consultant is finished and Contract with the Consultant was signed in November 2022. Prequalification tendering for construction is ongoing.

		Construction: Expected to start in Q2 2024. Commissioning: Foreseen in Q3 2026.
	Main problems	Approving of application for additional investment funds (loan and grant) through the written procedure is a necessary condition in order to proceed with the selection of the contractor for this project. The successful implementation of the project will depend on the process of approving the additional funds.
Other information and data		

1.3 New 400 kV Interconnection between SS Bajina Basta (RS) - Visegrad (BA) - Pljevlja (ME)

COUNTRY Serbia - Montenegro	DATE June 2023
Project title	**New 400 kV interconnection between SS Bajina Basta (RS) - Visegrad (BA) - Pljevlja (ME) (part of Trans-Balkan corridor)** Project ID in TYNDP 227 Transbalkan Corridor TYNDP history: TYNDP 2012, TYNDP 2014, TYNDP 2016, TYNDP 2018, TYNDP 2020, TYNDP 2022 Project code in PECI: EL_01c
Project description	New 400 kV interconnection between Serbia, Bosnia and Herzegovina and Montenegro, which implies construction of a new double 400 kV OHL between SS Bajina Basta (Serbia), SS Visegrad (BA), SS Bistrica and SS Pljevlja (Montenegro) accounts for one of the four first phase Transbalkan corridor infrastructure investment items, due to be completed by 2027. This project will encompass the following activities: a) equipping of both systems of wires from SS Bajina Basta to Vardiste (BA), b) equipping of one system of wires from Vardiste to border of Bosnia and Herzegovina and c) equipping of one system of wires from Vardiste to border of Montenegro. The length of this OHL is: - 84 from Serbia to Bosnia and Herzegovina and Montenegro; - 17,18 km from Bosnia and Herzegovina to Serbia and Montenegro; - 15,7 km from Montenegro to Bosnia and Herzegovina and Serbia.
Project promoters	NOSBIH (BA), Elektroprenos BiH (BA), EMS (RS), CGES (ME)

		Promoting countries: BA; ME; RS
Period of realisation/commissioning year		Construction: Q2 2025 – Q4 2027 Commissioning: Q4 2027
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	9.8 mEUR (BA side); source of finances: grant and own finances Montenegro: 25 mEUR granted by the European Commission, KfW is the monitoring IFI (2016) Serbia: Application was approved in August 2022. KfW Loan (up to 30 mEUR) and WBIF Grant (up to 8,5 mEUR) agreements are signed in January 2023.
	Financial amount to be provided and sources of financement	RS: 10.44 mEUR (WBIF Grant+KfW Loan) BA: 7.209 mEUR ME: 13.3 mEUR CAPEX estimate was 40,8 mEUR. It was subsequently updated according to the main design. With the request of PE EPS from year 2021, for the connection of PSHPP Bistrica, the section 4 project is justified (the connection of PSHPP Bistrica is not foreseen in the updated feasibility study). EMS' in-house power flow analysis show that it is necessary to carry out the lead-in of both transmission line circuits to PSHPP Bistrica - equipping both line circuits of the section 4. Potential increase in the prices of materials and works may demand additional funds. New estimated project costs are 53,4 mEUR.
Status of the project in the process of realisation	*Project documents*	Status: PQ procedures for consulting services. Documents: Feasibility study is done and ToR for the technical documentation is under development **1. Project Pre-feasibility Assessment** (2013-2015)

	Construction/implementation work	**2. Feasibility Assessment, ESIA/EIA (Environmental Impact Assessment) and Design Studies:** RS (2013-2015), BA e ME (2013-2020) **3. FEED (Front End Engineering Design) /Main Design (2019-2021).** RS: Design for Construction permit completed. Main design completed ME. Preliminary Design completed by the IPF 7 Consultant. **4. Permitting phase:** Construction Permit was obtained. Land owner compensations are ongoing. ME: Pending adoption of Detailed Spatial Plan for 400 kV corridor Pljevlja-border Serbia. **5. Construction**: Expected to start in year 2025-2026. **6. Commissioning:** Foreseen in 2027.
	Main problems	
Other information and data		

1.4 Transbalkan Electricity Corridor – Grid Section in Montenegro – Part I (ME)

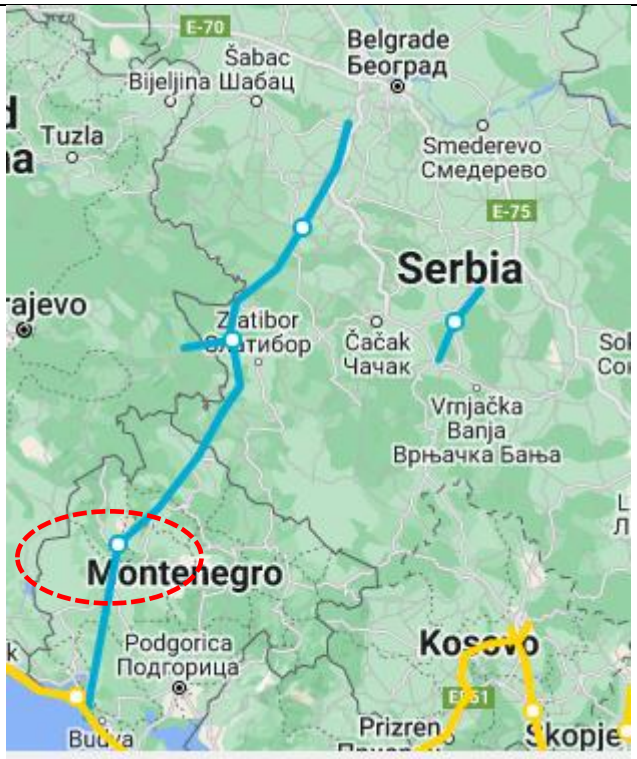
COUNTRY Montenegro	DATE June 2023
Project title	**Transbalkan Electricity Corridor- Grid Section in Montenegro**
Project description	Lot 1: Construction of SS 400/110/35 kV Lastva and extension of existing SS 400/220/110 kV Pljevlja; Lot 2: Construction of OHL 400 kV Lastva-Cevo: construction of the double circuit line 2x400 kV Lastva-Trebinje and Lastva-Pljevlja (section Lastva-Cevo) and the single circuit line 400 kV Lastva-Podgorica (section Lastva-Cevo); Lot 3: Construction of OHL Cevo-Pljevlja: construction of the 400 kV Lastva-Pljevlja line (section Cevo-Pljevlja) which is partly double circuit and construction of OHL 2x400 kV Pljevlja-Border with Serbia. The project also includes replacement of high voltage equipment in substations; reconstruction of protection system in transmission network and construction of SS 110/35 kV Brezna. Expected benefits are as follows: - development of regional electricity market; - increase of safety and reliability of operation of electricity transmission system facilities through its upgrade and reconstruction and elimination of bottlenecks for integration of renewable energy sources. Information source: http://www.cges.me/en/projects/trans-balkan-corridor
Project promoters	Montenegrin Electric Transmission system – CGES Promoting countries: ME
Period of realisation/commissioning year	2008-2023

Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	Total amount of the project is 113 mEUR. The project is financed by the loan (EBRD-60 mEUR, KfW - 25 mEUR), WBIF grant (25 mEUR) and CGES own funds
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	Lot 1: The works are completed; Lot 2: The works are completed; Lot 3: Around 90% of the planned works realised.
	Construction/implementation work	
	Main problems	Complex and long-lasting expropriation procedure
Other information and data		

1.5 Transbalkan Electricity Corridor – Grid Section in Montenegro – Part II (ME)

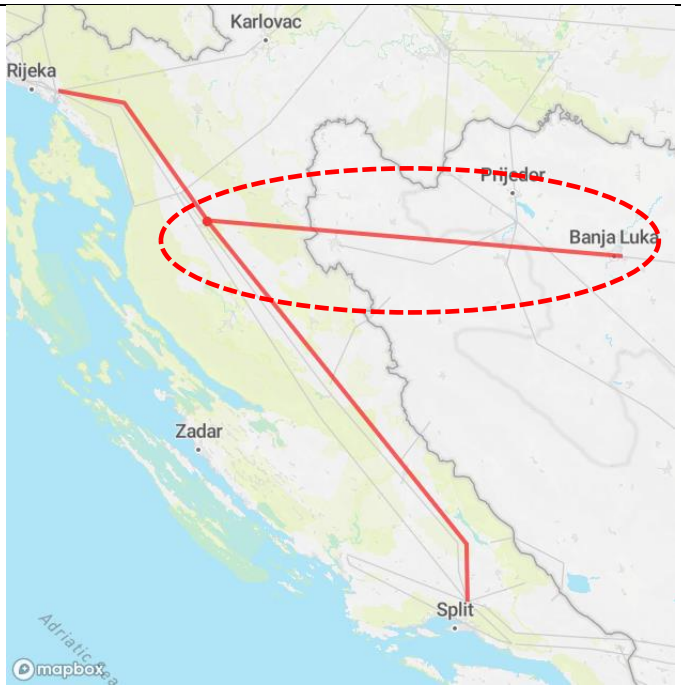
COUNTRY Montenegro	DATE June 2023
Project title	**Transbalkan Electricity Corridor (I) - Grid Section in Montenegro - Part II**
Project description	Project is the second part of a larger project with the full title "Trans-Balkan Electricity Corridor (I) – Grid Section in Montenegro" that aims to increase the cross-border transmission of electrical energy between Montenegro and Serbia, domestic transmission of electrical energy, efficiency of the transmission system in Montenegro by reduction of technical loses on transmission level and the security of the electric power supply in Montenegro by reduction of annual average outage hours of electricity supply in transmission system substations in western coastal part of Montenegro. Part II of the project is divided into four components: C1: Replacement of high voltage equipment and other equipment in several high voltage substations. C2: Reconstruction of control and protection systems and the integration of several existing substations into SCADA communication C3: Replacement existing 220 kV OHL with new 400 kV OHL from Pljevlja 2 to Montenegrin border and extension of 400 kV switchyard in substation Pljevlja 2. C4: Integration of SS 110/35 kV Brezna and associated transmission line into the public transmission grid.
Project promoters	Ministry of Economy on behalf of Montenegro as Beneficiary and CGES as Project Executing Agency Promoting countries: ME
Period of realisation/commissioning year	2017-2026 (grant availability needs to be extended)

Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	25 mEUR funded by the European Union through the German development bank - Kreditanstalt für Wiederaufbau (KfW)
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	July 2019: CGES awards the Contract for Procurement of Works and Goods – LOT 1 (Reconstruction of transmission substations) September 2019: CGES signs the Agreement on purchase of infrastructure to connect WPP Krnovo to Montenegro's transmission grid February 2020: Works commence on replacement of equipment in the substations (LOT 1 – Component 1 and 2) December 2022: Works completed on replacement of equipment in the substations (LOT 1 – Component 1 and 2
	Construction/implementation work	
	Main problems	Adoption of Detailed Spatial Plan for 400 kV corridor Pljevlja – Serbian border – still pending

Other information and data	

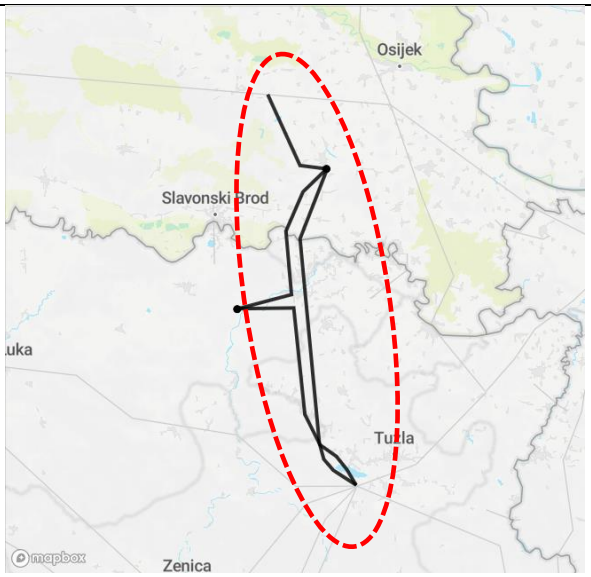
1.6 400 kV OHL Banja Luka (BA) - Lika (HR)

COUNTRY Bosnia and Herzegovina - Croatia	DATE June 2023
Project title	**400 kV OHL Banja Luka (BA) - Lika (HR)** Project ID in TYNDP: 343 CSE1 New Project code in PECI: EL_03
Project description	The project will contribute in strengthen Croatian transmission grid along its main north-south axis (in parallel with eastern Adriatic coast) allowing for additional long-distance power transfers (including cross border) from existing and new planned power plants (RES/wind/ and conventional/hydro and thermal/) in Croatia (coastal parts) and BA to major consumption areas in Italy (through Slovenia) and north Croatia. The increased transfer capacity will support market integration (particularly between Croatia and Bosnia-Herzegovina) by improving security of supply (also for emergency situations), achieving higher diversity of supply & generation sources and routes, increasing resilience and flexibility of the transmission network. Construction of new transmission infrastructure • an interconnector between Bosnia and Herzegovina and Croatia; Banja Luka – Lika (EL_03_1), and • two internal Croatian lines; o Lika – Konjkso (EL_03_2) and o Lika – Melina (EL_03_3). The Project implies increasing of transfer capacity between HR and BA by construction of new SS 400/110 kV Lika and its connection to an existing SS 400/220/110 kV Melina and SS 400/220/110 kV Konjsko in HR, and to an existing SS 400/110 kV Banja Luka in BA.

Project promoters		NOSBIH (BA), Elektroprenos BA (BA), HOPS (HR) Promoting countries: BA, HR
Period of realisation/commissioning year		2033
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	According to Feasibility study total cost of construction is 56.7 mEUR. Length of the new line in BA is 127 km and 53 km in HR. As prices changed during the last two years, total cost of construction in BA should be at least 53.3 mEUR
	Financial amount to be provided and sources of financement	155.7 mEUR
Status of the project in the process of realisation	*Project documents*	Status: In planning but not permitting Documents: Feasibility study finished in March 2019.
	Construction/implementation work	
	Main problems	Financing
Other information and data		

1.7 Upgrading of Existing 220 kV Lines between HR and BA to 400 kV Lines (BA and HR)

COUNTRY Bosnia and Herzegovina - Croatia		DATE June 2023
Project title		**Upgrading of existing 220 kV lines between HR and BA to 400 kV lines** Project ID in TYNDP: 241 Project code in PECI: EL_04, EL_05
Project description		Upgrading of existing 220 kV lines between SS Dakovo (HR) and SS Tuzla/Gradacac (BA) to 400 kV lines. The project 241, has been proposed assessed in the TYNDP 2016, based on the results of common planning studies performed in the CSE Region during preparation of regional investment plan 2015. The project assumes upgrade of existing 220 kV lines between SS Dakovo (HR) and SS Tuzla (BA) and SS Gradacac (BA) to 400 kV, with additional internal new double 400 kV line connecting SS Dakovo to existing 400 kV line Žerjavinec - Ernestinovo. This project is under consideration and there is a need for pre-feasibility study.
Project promoters		NOSBA, Elektroprenos BA (BA), HOPS (HR) Promoting countries: BA, HR
Period of realisation/commissioning year		2032
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	44 mEUR (BA side); source of finances: grant and own finances
	Financial amount to be provided and sources of financement	
	Project documents	Status: Consideration phase

Status of the project in the process of realisation	*Construction/implementation work*	
	Main problems	Financing
Other information and data		

2. Doubling of Trans-Adriatic Power Interconnectors (Lead Country: Italy, IT)

This cluster includes the power links between Italy and Montenegro, Italy and Greece and between Italian regions. Projects involve into the construction of new lines of interconnection (Adriatic Link) and upgrades of links already in operation (MONITA and GRITA).

Besides reinforcing the domestic grid, there is a need to develop interconnection capacity with electricity systems of other countries in order to increase imports, access areas with high renewable energy potential and improve security and efficiency of supply by increasing energy interchange.

The cluster addresses theTSG2 priority action related to the construction and establishment of a well-connected power system and well-functioning electricity market.

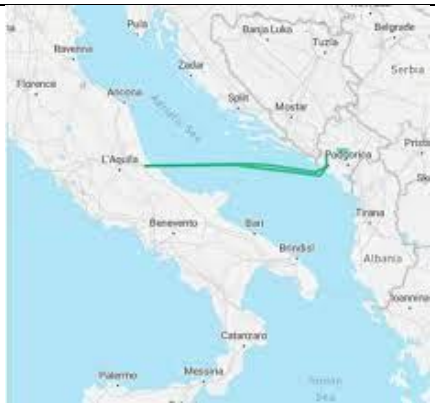
TSG2 priority sub-action that this cluster also addresses is related to the construction of new transmission capacities and smart grids to achieve a balanced, sustainable and timely development of an interconnected electricity system.

Lead country of all projects in the cluster is Italy, while partner countries are Greece and Montenegro.

2.1 MONITA 2 – Doubling of Existing HVDC Power Link between Italy and Montenegro (IT and ME)

COUNTRY Italy - Montenegro	DATE June 2023
Project title	**HVDC Italy-Montenegro (MONITA 2)**
Project description	In order to ensure greater integration of the Italian electricity market with the energy systems of South-Eastern Europe (SEE), it is planned to complete the HVDC connection between the 380 kV Villanova station in Italy and the Lastva station in Montenegro, which currently has a transport capacity of 600 MW (following the commissioning of the first HVDC module in 2019) and will reach 1,200 MW in both imports and exports. The project, which consists of the construction of the second 600 MW HVDC link, will facilitate energy exchanges between the Balkan countries and the European electricity market, further increasing the operational safety of the interconnected energy systems. With regard to the planned activities, it should be pointed out that it is only necessary to lay the second HVDC connection by sea cable, since both conversion stations in Cepagatti (in Italy) and Kotor (in Montenegro) have already been built with two HVDC modules (2 x 600 MW), the first of the two marine cables, and since the laying of both land cables has already been carried out both in Italian and Montenegrin territory.
Project promoters	Terna Group Promoting countries: IT, ME
Period of realisation/commissioning year	Completion by 2026 as reported in the Terna Development Plan 2021 (The date indicated also takes into account the timing of the implementation of the planned infrastructure on the Balkan network, including in particular those relating to the Trans-Balkan corridor, as well as the forecasts for the integration of the markets of south-eastern Europe and the Balkans).

Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Funded by Terna 1 billion EUR These investments are exclusively those related to the construction of the second marine cable, for a length of approximately 423 km, since all the other interventions have already been completed in 2019 with the first 600MW HDVC module.
Status of the project in the process of realisation	*Project documents*	On 22 December 2020, the Regulatory Authority for Energy, Networks and the Environment issued its opinion 574/2020/I/EEL, in which it requested that the development of the second pole, as part of the Italy-Montenegro interconnection, code 401-P, is to be separated from the first pole and placed "under assessment", i.e. without any implementation activities within the Ten-year plan horizon. It provides: • the indications of limited usefulness of the second pole that emerged from the CBA review conducted by the independent expert; • the forecast of roughly balanced electricity power markets in all European and Italian scenarios except for the PNIEC 2030 case study • the indications in the 2020 target capacity report of limited usefulness for the national electricity system of further interconnection developments. Terna, in order to take into account, the above-mentioned Arera opinion, has excluded the development intervention in question from the base grid, so that the simulations carried out for the other development interventions for the purpose of assessing the Cost-Benefit Analysis for the 2021 Development Plan were not related to this interconnection.
	Construction/implementation work	
	Main problems	

		Therefore, in compliance with the reasons underlying Arera's opinion, the evaluation of the Italy-Montenegro 2 pole was carried out by means of Cost Benefit Analysis in order to confirm again its usefulness for the System, in terms of: • a significant increase in the capacity to import electricity from South-East European countries to Italy (up to 1200 MW); • an increase in operating safety, guaranteed by the greater capacity for exchange and mutual aid between the two areas; • reduction of externalities emitted by less efficient production sources in Eastern Europe in cases where the link operates in export. Furthermore, the strategic value in international terms is confirmed by the funding received from the EC for the studies and design of the link (2 TEN-E projects) as well as by the inclusion of the project in the TYNDP European network development plan.
Other information and data		

2.2 GRITA 2 – New HVDC Power Link between Italy and Greece (IT and GR)

COUNTRY Italy - Greece		DATE June 2023
Project title		**GRITA 2, new HVDC Italy-Greece**
Project description		The project concerns the development of a new HVDC link between Italy and Greece of 1000 MW capacity, in order to address future challenges and EU targets set. The new HVDC link between Italy and Greece along with the existing one called "GRITA" with a capacity of 500 MW, will contribute to the safe management of the entire southern zone, thanks to the possibility of evacuating excess power towards Eastern Europe (Export) or providing adequate load coverage and reserve margins for the southern zone (Import). The concerned TSOs, IPTO and Terna, work towards an agreement on the development of the project.
Project promoters		Terna SpA, IPTO SA Promoting countries: IT, GR
Period of realisation/commissioning year		Project schedule to be defined pending the final agreement between promoters
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Funded by Terna, IPTO 1,250 mEUR
Status of the project in the process of realisation	*Project documents*	In April 2021, Terna and the Greek TSO IPTO signed the Agreement of Terms of Reference for a feasibility study of "New electricity interconnection project between Greece and Italy" aimed at carrying out joint studies for the implementation of the project. The technical and economical assessment between alternative configurations for the new HVDC link has been completed based on which the possibility to develop a new HVDC link with an additional
	Construction/implementation work	
	Main problems	

		transmission capacity up to 1000 MW has been identified. The project has been included in the current NDPs of IPTO and TERNA (update of the project as included in Terna's Development Plan 2021 (Area CS fact sheet n. 554-M available at https://download.terna.it/terna/Piano_Sviluppo_2021_8d94126f94dc233.pdf) based on the final TSO's agreement).
Other information and data		

2.3 Adriatic Power Link: New Underwater Power Line to Link Abruzzo and Marche Regions (IT)

COUNTRY Italy	DATE June 2023
Project title	**Adriatic Power Link, the new underwater power line that will link Abruzzo and Marche**
Project description	The project envisages the construction of an electrical connection in HVDC (high voltage direct current) cable between Abruzzo and Marche, called "Adriatic Link". The "Adriatic Link" will be realised with a bipolar scheme with "bidirectional" electrodes. The operating voltage will be ±500 kV and the nominal power will be 1000 MW in bipolar configuration (i.e. 500 MW for each pole). The new interconnection, which will have a total length of approximately 276 km and will be completely 'invisible', will consist of a submarine cable, two underground cables - thus with no impact on the environment - and two conversion stations located near the existing power stations of Cepagatti (Abruzzo) and Fano (Marche) The project will be carried out in accordance with the highest standards of sustainability and environmental protection through the study and sharing of hypotheses for its location, with the aim of limiting the length of the cable sections and minimising any interference (both on land and at sea) with areas of environmental, natural, landscape and archaeological value, as well as causing the least possible inconvenience to the properties concerned. The cables will be laid in the sea at a maximum depth of 250 metres, while the landfills will use the technique of horizontal directional drilling (H.D.D.), which allows the pipeline to be installed without impacting the coastline and ensuring the necessary protection of the electricity connection in the event of coastal erosion.

		The cables will be laid at a depth of between 4 and 8 metres along the shoreline.
Project promoters		Terna SpA Promoting country: IT
Period of realisation/commissioning year		Entry into service is expected in 2028.
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Funded by Terna 1.124 mEUR
Status of the project in the process of realisation	*Project documents*	The consents process is in progress, with the services conference underway. Procurement for the marine and terrestrial HVDC cables and the converter substations is in progress (expected to be completed by 2023 and 2024, respectively).
	Construction/implementation work	
	Main problems	
Other information and data		

3. Harnessing Offshore Renewable Energy Potential in the Adriatic and Ionian Sea (Lead Country: Greece, GR)

This cluster includes the project HOPe-Adrion: “Harnessing Offshore Renewable Potential in the Adriatic and Ionian Sea” which embraces the renewable energy potential along a broader angle including wind, solar, wave and tidal energy.

It provides a comprehensive assessment of the offshore renewable capacity, giving emphasis to the offshore wind energy, in the Adriatic and Ionian seas taking into account technology developments, local resources and synergies

In principle, given its extension and implications this project might be considered as the basis of a strategic project idea for future development and EUSAIR financement.

Lead country is Greece.

3.1 Harnessing Offshore Renewable Energy Potential in the Adriatic and Ionian Sea (GR)

COUNTRY Greece	DATE June 2023
Project title	**"HOPe-Adrion" - Harnessing Offshore Renewable Energy Potential in the Adriatic and Ionian Sea**
Project description	Comprehensive assessment of the offshore renewable capacity, giving emphasis to the offshore wind energy, in the Adriatic and Ionian seas considering technology developments, local resources and synergies The work-programme will comprise of the following: - Assessment of offshore renewable potential (wind, solar, wave and tidal energy) in the greater Adriatic and Ionian Area - Evaluation of commercial and emerging technologies for offshore renewable exploitation in relation to the specific requirements and met-ocean conditions - Preliminary assessment of environmental impact of renewable offshore exploitation giving emphasis to large scale offshore wind exploitation - Social impact of exploitation of renewable energy - Assessment of synergies with other activities in the area (e.g., electrical interconnections, local development plans, wildlife preservation). "HOPe-Adrion" builds upon the Strategic Environmental Assessment Adriatic-Ionian Operational Programme (2014-2020) and complies with the Adriatic-Ionian Environment Quality Policy. The outcome of the project will be a comprehensive "Master Plan" for the development of offshore renewable energy in the Adriatic and Ionian Sea. The project responds to the requirements of the European Directive 2014/89/EU "establishing a framework for maritime spatial planning". "HOPe-AdrIon" highlights the need for integrated and efficient research with strong translational aspects to

	renewable energy that will secure sustainability for future generations. The targets of "HOPe-AdrIon" are strongly connected to the **European Green Deal**, the aim of the European Union to become the first climate-neutral continent (https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en). It is also compliant to the targets for the **EU Cohesion Policy**, as well as the main targets of the **National Strategic Plans** of the participating countries. "HOPe-AdrIon" brings together the EUSAIR countries of Adriatic- Ionian macro-region, by capturing a large part of the Adriatic & Ionian Sea, at regional scale. The proposed project develops capacity-building (for applied research and translation of pertinent results in Harnessing offshore renewable potential practices), at the macro-regional scale. "HOPe-AdrIon" will amass a unique group of highly experienced energy experts to develop at a macro-regional scale, renewable energy innovative solutions in marine offshore areas. Potential beneficiaries are: ministerial administrations, regulatory authorities, port authorities, RES developers from the Adriatic & Ionian Region will benefit from the project results. By capitalizing on existing knowledge, generating and integrating novel one, "HOPe-AdrIon" will provide tangible and pertinent tools to support the harnessing and management of offshore renewable potential in the Adriatic and Ionian Sea. The project proposal contributes directly to the three energy policy objectives of the EU- competitiveness, security of supply and sustainability. The "HOPe-AdrIon" would take into account the need of better integration of the Adriatic-Ionian Region into the EU while promoting the energy policy goals of competitiveness, security and sustainability and fostering the connection of new renewable energy to the grid. The proposed project also contributes to the EUSAIR action plan including by providing information

	on potential for investments in offshore renewable energy sources which, in turn, provides indication in terms of requirements for grid interconnection and adequate grid capacity. By providing an assessment of the offshore renewable potential in the Adriatic-Ionian region, the proposal is also highly relevant to Energy Community interconnection plans, which include connecting new renewable energy to the grid. The proposed project also contributes to the EUSAIR action plan including by providing information on potential for investments in offshore renewable energy which provide indication in terms of requirements for grid interconnection and adequate grid capacity The project is important within the context of policies and programmes that the European Union is launching for its enlargement and cooperation with neighbouring States, for the territorial integration and cohesion, and for the development of the single European energy market. The European energy context is going through dramatic changes since the European Council of 23-24 October 2014, which endorsed the EUSAIR and its Action Plan on the basis of the European Commission's Communication of 17 June 2014 Within this framework, the Energy Community interconnection plans include connecting new renewable energy to the grid, integrating energy markets, enhancing the security of supply, and improving the reliability and quality of energy services provided. Issues such as interconnection of electricity grids and adequate grids capacity are pre-conditions for large-scale investments in renewable energy. To address the concerns on RES penetration, new directives and rules concerning the electricity market, there is a need to develop the Offshore Renewable potential as a means and instrument for the coordinated enactment of the EUSAIR Action Plan.

Project promoters		"HOPe-AdrIon" is promoted by Centre for Renewable Energy Sources, Greece, a highly competent Scientific Institute, with proven and prolonged experience in successfully completing similar projects. Their experience, expertise, regional knowledge and high qualifications, can be attested by the lists of their completed or undergoing projects and by the list of their high-quality scientific publications, which form a major proven outcome of their work. Ministerial administrations, Regulatory Authorities, port authorities, RES developers from the Adriatic & Ionian Region are kindly invited to join the team, to form a highly experienced consortium of high expertise. The proposed work builds on existing solid scientific knowledge and the proposed state-of-the-art work can guarantee its implementation.
Period of realisation/commissioning year		01/06/2023 – 30/12/2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	1.5 mEUR
	Financial amount to be provided and sources of financement	1.5 mEUR
Status of the project	*Project documents*	Draft layout
	Construction/implementation work	
	Main problems	Lack of financial commitment to start the project. Resources are being collected.
Other information and data		The project will pay attention to cross-cutting aspects. In particular: • It encompasses research and innovation aspects that lead to highly – specialized employment. • It potentially involves a diversified multitude of participants that include academics, research

	scientists, applied scientists, administrators of natural resources, policymakers, energy administrators, e.tc. It translates research results into practice and communicates / disseminates results to various audiences for more effective implementation. • It engages in skills/abilities building in a way that knowledge generated by the project, will be available to all partners, disseminated to the scientific community at large, and will be transmitted to stakeholders. • Training and mobility actions among partners are foreseen and which will pungently benefit the Research and Innovation capability of all partners. Effective transfer of knowledge between partners will be actively exercised and will also be supported for the relevant scientific community at large. "HOPe-AdrIon" is coherent as a project, with regards to the EUSAIR. The results will contribute directly to Pillar 2, Topic 2.3. Energy networks, regarding the offshore transnational areas of Adriatic-Ionian Sea, and having direct relevance to Pillar 1, Blue Growth, Topic 1.1. Blue technologies. Links are foreseen with: BLUE DEAL: The project aims to increase transnational activity of innovative clusters and networks of the BE sector, develop links and synergies between SME`s, public authorities, knowledge institutions and civil society and establish transnational and regional Blue Deal Alliances. The project is co-financed by the European Regional Development Fund and the Instrument for Pre-Accession Assistance Fund, https://blue-deal.interreg-med.eu/ PELAGOS: Interreg project aiming to establish a transnational Mediterranean Cluster in Blue Energy (BE) to accelerate the development of BE sector in Mediterranean coastal, insular and marine regions

	(funded by EU -Interreg MED, https://pelagos.interreg-med.eu/ The project is important within the context of policies and programmes that the European Union is launching for its enlargement and cooperation with neighbouring States, for the territorial integration and cohesion. The proposed project is realistic and credible and it does set attainable objectives. Furthermore, the “HOPe-Adrion” consortium declares in advance that will apply a non-discriminatory policy and will be fully committed to maintaining and reinforcing equal opportunity and gender balance issues.

4. Transbalkan Gas Ring (Lead Countries: Bosnia and Herzegovina, BA - Croatia, HR – Serbia, RS)

The Transbalkan Gas Ring is a cluster of projects consisting of new gas pipelines, upgradings and counterflows through the Balkan region.

This cluster includes the interconnection projects between Serbia and Bulgaria, Croatia and Bosnia and Herzegovina and Serbia and Croatia.

It addresses theTSG2 priority action related to the construction and establishment of a well-connected gas infrastructure and well-functioning electricity market.

TSG2 priority sub-actions that this cluster also addresses are related to:

a) Diversification of natural gas sources, infrastructures and routes to promote security of natural gas supply and competitiveness;
b) Development of interconnections, counterflows and natural gas storage along a regional perspective.

Lead countries are: Bosnia and Herzegovina, Croatia, Serbia and Bulgaria as the non EUSAIR country.

4.1 Gas Interconnector Serbia – Bulgaria (RS)

COUNTRY Serbia	DATE June 2023
Project title	**Gas Interconnector Serbia-Bulgaria** PECI: Gas_09
Project description	The realisation of this project ensures diversification of directions and sources of supply, while improving the security of supply of both the Republic of Serbia and Bulgaria and the entire region. The northern part of the gas pipeline system is significantly relieved, which increases the security of supply of transit routes for BA, as well as the future supply of Kosovo*, North Macedonia and Montenegro. In addition to improving the security of supply of the Serbian natural gas market and facilitating the further development of the distribution network of central, eastern and southern Serbia, the project enables the integration of existing and future storage capacities of natural gas into a unified energy system. The Gas Interconnection Bulgaria – Serbia is envisaged as a reverse connection which will connect the national gas transmission networks of the Republic of Bulgaria and the Republic of Serbia. The gas pipeline's total length is approximately 170 km from the town of Novi Iskar, Republic of Bulgaria, to the city of Niš, Republic of Serbia.
Project promoters	RS: Public Enterprise Srbijagas Novi Sad/Transportgas Srbija LLC BG: Bulgartransgaz EAD, Ministers of Energy of Bulgaria and Serbia Promoting countries: BG, RS
Period of realisation/commissioning year	RS: Commencement Date of the works was 14 January 2022, and the start of the commissioning is October 2023

Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	RS: Project preparation cost: 7.356 mEUR for land acquisition form the budget of the Republic of Serbia 3.571 mEUR (financing of the Spatial plan - source: Budget of RS and survey works, EIAs, design, issuing permits-source: PE Srbijagas's fund) Western Balkans Investment Framework grant: 1 mEUR - EU CONNECTA 153.000 EUR Project implementation cost: 93,767,907 EUR, of which: - IPA 49,6 mEUR - EIB: 25 mEUR - PE Srbijagas contribution: 625,000 EUR - Budget of the Republic of Serbia 18,542,907 EUR
	Financial amount to be provided and sources of financement	IPA contribution is 4.6 mEUR indicative national contribution is 25 mEUR: EIB loan **Total CAPEX 163.95 mEUR 2020-2023**
Status of the project in the process of realisation	*Project documents*	Land expropriation: PE Srbijagas has been conducting all the necessary activities related to land expropriation. In this regard, upon the request of PE Srbijagas and Ministry of Mining and Energy, Government of the Republic of Serbia has

	Construction/implementation work	provided budgetary funds for the complete and incomplete land expropriation costs through the adoption of Conclusion. **1. Project Pre-feasibility Assessment.** Feasibility Study Report for Serbia – FS Interconnection with BG Gas Transmission Pip (WB4-SER-ENE-04) made by COWI-IPF Consortium in year 2011, is used for Pre-feasibility study 2016. **2. Feasibility Assessment, ESIA/EIA and Design Studies.** RS: Design documentation, including EIA and Detailed design, is completed (2016-2019). BG: EIA decision on DSDP amendments completed (2021, March) - complementing previous decision of the competent authority (2015), Environmental screening procedure for design and construction - pending 2021, June. **3. FEED/Main Design.** RS: Detail design is finished October 2019. BG: Contract for technical design signed in 2020, October. Currently in consultation with interested parties, July 2021. **4. Permitting: RS:** Location condition issued: 2019, July; Construction permit issued: 2019, September. BG: March 2020 - August 2021. **5. All approval and permits are issued for the Serbian section**. **6. Serbia finalized the financial framework** for the construction of the Gas Interconnector Serbia Bulgaria - Section on the Serbian territory. **7. RS: Tendering procedure** was completed in 2021. BG: In January 2021 Bulgartransgaz EAD announced the open public procurement procedure for the elaboration of a detailed design, supply of the necessary materials and equipment, the construction and commissioning of the gas Interconnection Bulgaria – Serbia on Bulgarian territory. Decision to appoint contractor was issued in 2021, June.

		8. Construction: **RS**: January 2022 – October 2023, BG: Construction to be carried out in accordance with Joint Commitment, July 2021- May 2022 **9. Commissioning:** RS: October 2023
	Main problems	
Other information and data		

4.2 North Interconnection between Bosnia and Herzegovina and Croatia Gas Pipeline Project Slobodnica (HR) – Brod -Zenica (BA) (BA and HR)

COUNTRY Bosnia and Herzegovina - Croatia	**DATE June 2023**
Project title	**North Interconnection BA-HR Gas Pipeline Project Slobodnica (HR) - Brod (BA) - Zenica** PECI: Gas_01 PMI Status
Project description	Project will integrate BA with Croatian and other neighbouring gas markets. Pipeline will be bidirectional and together with "South Interconnection BA-HR" creates a part of EnC gas ring. Main goal is to diversify gas rout and supply sources for BA. Expected benefits are to directly increase (N-1) for BA. Project is included in Strategic Plan and Program of Development of Energy Sector of FBA and in the Comprehensive Energy Strategy of BA until 2035 as well as Energy Strategies of both Republika Srpska and BA entities, which are all in adoption process. Project is included in ENTSO-G TYNDP. This project is in preparation from the year 1988, and Project Documentation from this period exists. Gas pipeline Brod-Zenica is the project that will enable new supply route for BA providing diversified and reliable natural gas supply. Except for the above, the realization of the project will contribute to the development of the gas market in the northern part of Bosnia and Herzegovina. Gas pipeline route Brod Gas pipeline will be be-directional and together with the Project Southern Interconnection (TRA-N-851) will create a part of EnC Gas Ring. Project is in connection with Project Slobodnica-Bosanski Brod (TRA-N-66) located in Croatia. The proposed interconnection would have the capacity of 1.3 bcm/y. The project will be H2 ready.

Project promoters		BA-Gas d.o.o. Sarajevo Promoting countries: BA, HR
Period of realisation/commissioning year		Construction and commissioning 2026
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	WBIF fund in Dec 2011 approved 1 mEUR grant for FS, ESIA and CBA but this grant was withdrawn because of subsequent lack of support of the other BA Entity Republika Srpska to that project in that period.
	Financial amount to be provided and sources of financement	FS, ESIA Preliminary Design: Grant 0,75 mEUR; Possibility to get grant from EU funds is being investigated. Main Design: 1.5 mEUR BA-Gas own fund Construction: 85 mEUR IFI Credit Possibility to get amount of 50% for construction works from EU funds is being investigated BA-Gas should provide own fund for land acquisition and approvals Total CAPEX 94 mEUR, 2024-2026
Status of the project in the process of realisation	*Project documents*	1. In the period from 1988 to 1990 all technical and economic documentation such as Main design, Study on Environmental Impact, Public Invitation for Tenders for Procurement of Equipment etc. was made. In 2006. Prefeasibility study for the construction of gas pipeline Bosanski Brod - Zenica with conceptual design in the scope of the PFS Study was re-developed. 2. Feasibility Assessment, ESIA/EIA and Design Studies. BA: Technical Feasibility, ESIA, Economic Feasibility - CBA and Preliminary Design planned by 2023, HR: Technical Feasibility - Finished 2012 ESIA - Planned by 2023 Economic Feasibility - CBA - Planned by 2024

		3. FEED/Main Design: 2024 4. Permitting: 2024 5. Construction and commissioning 2026
	Construction/implementation work	
	Main problems	Delay in implementation of this project encountered mainly because political obstruction by the other BA Entity Republika Srpska. In this respect BA-GAS has seen positive movement in the last period.
Other information and data		

4.3 Western Interconnection Gas Pipeline between Bosnia and Herzegovina and Croatia (Licka Jesenica-Trzac-Bosanska Krupa with Branches to BAac and Velika Kladusa) (BA and HR)

COUNTRY Bosnia and Herzegovina - Croatia		DATE June 2023
Project title		**Western Interconnection Pipeline BA-HR (Licka Jesenica-Trzac-Bosanska Krupa with branches to BAac and Velika Kladusa)** PECI: Gas_02 PMI status
Project description		Project will connect BA with Croatian gas transmission system and will enable gasification of part of Una-Sana Canton on the west side of BA. In the future there is possibility that the pipeline (via Jajce) will be connected to the existing gas transmission pipeline. Main goal is to enable development of natural gas market in the west part of BA and to introduce gas as environmental favourable fuel in residential, industrial and power generation sector. Project is included in Strategic Plan and Program of Development of Energy Sector of FBA. Also, it is included in Comprehensive Energy Strategy of BA until 2035 which is in adoption process. Project is on the PECI PMI 2020 List and is included in ENTSO-G TYNDP.
Project promoters		BA-Gas d.o.o. Sarajevo Promoting countries: BA, HR
Period of realisation/commissioning year		FS, ESIA, Preliminary Design 2019; Main Design 2023; Tendering and Construction 2023-2026; Commissioning year 2026-2027
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	Pre-Feasibility Study 2008 financed by BA-Gas own fund 0.7 mEUR, Plinacro Submited Aplication, BA-Gas Supported

	Financial amount to be provided and sources of financement	FS, ESIA Preliminary Design: Grant 0.5 mEUR; Possibility to get grant from EU funds is being investigated; Main Design: 0.75 mEUR BA-Gas own fund Construction: 33 mEUR IFI Credit Possibility to get amount of 50% for construction works from EU funds is being investigated BA-Gas should provide own fund for land acquisition and approvals Total CAPEX 49 mEUR: 2024-2027
Status of the project in the process of realisation	*Project documents*	**1. Project Pre-feasibility Assessment**: June 2008 **2. Feasibility Assessment, ESIA/EIA and Design Studies**: HR: 2013-2014. EIA for the project of the gas pipeline Lička Jesenica-Rakovica-BAać was completed in February 2014. EIA has expired and need to be reconsidered. **3. FEED/Main Design.** BA: 2021-2022, HR: September 2023-June 2024 **4. Permitting.** BA: 2023-2025, HR: January 2022-December 2024 **5. Final Investment Decision taken.** BA: 2021, HR: May 2025 **6. Tendering: BA:** 2024-2025, HR: June-December 2025 **7. Construction. BA:** 2025-2026, HR: March 2026-March 2027 **8. Commissioning.** BA: 2026, HR: 2027
	Construction/implementation work	
	Main problems	Financial support for the Project is needed, but there are certain difficulties in terms of access to EU funds especially having in mind that BA as Energy Community Member did not transpose legislation in line with the 3th Energy Package

Other information and data	

4.4 Gas Interconnector between Serbia-Croatia (HR and RS)

COUNTRY Serbia - Croatia		DATE June 2023
Project title		**Gas Interconnector Serbia-Croatia (Phase I)** PECI: Gas_10 PMI status ENTSO-G TYNDP 2022
Project description		The interconnection of Croatia and Serbia is planned on the route Slobodnica - Sotin - Bačko Novo Selo. The main goal of the project is to connect the Serbian and Croatian transmission systems in order to ensure market integration, diversification of gas supply sources and increase security of supply in both countries. It will also provide Serbia with the access to the Croatian LNG terminal. The first phase of the project would be the construction of the Negoslavci - Sotin - Bačko Novo Selo gas pipeline (15 km) and Osijek - Vukovar (30 km) gas pipeline. The construction is planned to start in 2025 and end in 2030.
Project promoters		Public Enterprise Srbijagas Novi Sad Plinacro D.o.o. Promoting countries: HR, RS
Period of realisation/commissioning year		Commissioning: Serbia (2028), Croatia (2024)
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Total CAPEX 155,6 mEUR: 2024-2028, of which 60 mEUR for Serbia and 95,6 mEUR for Croatia

Status of the project in the process of realisation	*Project documents*	1. Project Pre-feasibility Assessment: RS: 2009, HR 2009-2017 2. Feasibility Assessment, ESIA/EIA and Design Studies: RS: ESIA done in 2010, Technical Feasibility Study in 2015 HR: Technical Feasibility Study and ESIA by 2021, CBA by 2022 3. FEED/Main Design. RS: 2024-2025, HR: end 2022 (10%) 4. Permitting. RS: 2025-2026, HR: 2023 5. Final Investment Decision taken. RS: 2025, HR: 2023 for the first phase 6. Tendering: RS: 2025-2026, HR: End 2023 7. Construction. Serbia (2026-2028), Croatia (2023-2024) 8. Commissioning. Serbia (2028), Croatia (2024)
	Construction/implementation work	
	Main problems	
Other information and data		The project's code on the European Network of Transmission System Operators for Gas (ENTSO-G) 2020 Ten Year Network Development Plan is TRA-A-70 (Interconnection Croatia/Serbia (Slobdnica-Sotin-Bačko Novo Selo). ENTSO-G's Ten-Year Network Development Plan for 2020 describes the project as integrating "Serbia with the new supply route receiving gas from Croatia gas transmission system which will enable it to be supplied from all other neighbouring markets (Hungary, Austria, Italy). This project is an interconnection of the gas systems of Croatia and Serbia on the route Slobodnica-Sotin Bačko Novo Selo and it is primarily intended for transport of LNG from the terminal on the island of Krk as well as from other possible routes and directions towards south-east Europe countries. A January 2020 report by the Energy Community Secretariat notes that

	environmental impact assessments conducted in 2014 for different sections of the pipeline have expired and will need to be renewed. Energy Community, as of August 2021, refers to the project as "Gas_10" and states: 1) the Project Pre-feasibility Assessments are complete for both the Serbia and Croatia portions of the pipeline 2) the Feasibility Assessment, ESIA/EIA and Design Studies are 20 percent and 50 percent done for Serbia and Croatia 3) the FEED/Main Design reports are to be expected by 2025, 4) Construction in 2026-2028 in Serbia and 2023-2024 in Croatia, and 5) Commissioning by 2028 for the Serbia section and 2024 for the Croatian section. The Vukovar-Negoslavci segment appears to have been first proposed in the 2015–2024 10-year gas development plan for Croatia, with a construction start year of 2022 and an operational year of 2023.However, it is not featured in ENTSO-G's 2022 TYNDP, or on Plinacro's Network Development plan for 2021, and is presumed shelved. 

5. Ionian-Adriatic Gas Pipeline (IAP) (Lead Countries: Croatia, HR – Montenegro, ME -Albania, AL)

The Ionian-Adriatic Gas Pipeline (IAP) is a strategic gas supply infrastructure linking Albania, Bosnia and Herzegovina, Croatia and Montenegro to take advantage from the TAP as well as from other gas interconnectors and LNG supply infrastructures such as floating LNG Terminal KRK in Croatia. South Interconnection of Croatia and Bosnia and Herzegovina - the pipeline is a new supply route for BA that will enable the reliable and diversified natural gas supply. The pipeline will enable the flow of IAP to BA

This cluster includes the IAP project, Interconnection between Croatia and Slovenia and South Interconnection between Croatia and Bosnia and Herzegovina.

It addresses theTSG2 priority action related to the construction and establishment of a well-connected gas infrastructure and well-functioning electricity market.

TSG2 priority sub-action that this cluster also addresses is related to the Diversification of natural gas sources, infrastructures and routes to promote security of natural gas supply and competitiveness;

Lead countries are: Albania, Croatia and Montenegro.

5.1 Ionian Adriatic Pipeline (IAP) (HR, ME and AL)

COUNTRY Croatia – Montenegro - Albania	DATE June 2023
Project title	**Ionian Adriatic Pipeline (IAP)** PMI Gas_16
Project description	The IAP project has been based on the idea of connecting the existing gas transmission system of Croatia via Montenegro and Albania with the TAP gas transmission system (Trans Adriatic Pipeline). The total length of the gas pipeline from Split to Albanian Fieri is 511 km. Its 5 bcm/y capacity provides the natural gas supply of Albania (1 bcm/y), Montenegro (0.5 bcm/y), the south BA (1 bcm/y) and Croatia (2.5 bcm/y). The implementation of the entire IAP project enables opening of the new energy corridor for the SEE region within the fourth EU transmission corridor, with the aim to establish a new natural gas supply direction from the Middle East and Caspian region. The IAP will have a bidirectional gas flow possibility, i.e. it will be able to provide natural gas supply of SEE from other sources, one of them the LNG solution on the island of KRK. The comprehensive feasibility study financed by the WBIF has been completed in April 2014. The main benefits of IAP: - gasification of Albania, Montenegro, southern part of Croatia and BA; - SoS and Diversification of supply; - Market integration, competition The branch for BA will go through interconnection Imotski-Zagvozd-Posusje-Travnik.The project will be hydrogen ready.
Project promoters	Plinacro (HR), Montenegro Bonus (ME) Albgaz (AL) Promoting countries: HR, ME, AL

Period of realisation/commissioning year		2028
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	WBIF Financial support of 7.7 mEUR has been granted for: Feasibility study, Gas Master Plan for ME and AL, Preliminary Design for ME and AL.
	Financial amount to be provided and sources of financement	Total CAPEX: 585.95 mEUR (2022-2026) of which 299 mEUR for HR, 118 mEUR for ME and 169 mEUR for AL
Status of the project in the process of realisation	*Project documents*	1. Project Pre-feasibility Assessment: 2008-2009 2. Feasibility Assessment, ESIA/EIA and Design Studies: HR- Technical and Economic Feasibility, along with CBA finished by February 2014, ESIA Finished by 2010 and 2012 respectively ME- Technical and Economic Feasibility along with CBA finished by February 2014, ESIA finished by February 2014, Preliminary Design in Progress, Gas Master Plan finalized AL: Technical and Economic Feasibility along with CBA finished by February 2014, ESIA finished by February 2014, Preliminary Design in Progress, Gas Master Plan finalized 3. FEED/Main Design. HR - For Section 1 and 2 in Croatia the Detailed Design was finished by February and March 2015, For Section 3 in Croatia, Detailed Design is foreseen to be finished by 2022 4. Market Survey - Open Season/Capacity Auction. HR - Section 1 in Croatia is foreseen for 2022, for the other sections in 2023 5. Permitting - Construction Permit for Section 1 in Croatia has been acquired in 2017. Construction Permit for Section 2 and 3 in Croatia are foreseen to be obtained in 2021 and 2022 respectively. ME and AL in 2023
	Construction/implementation work	

		6. Final Investment Decision taken. For Section 1 in Croatia, FID is foreseen for 2022, For Sections 2, 3 and 4 FID is foreseen for 2023 7. Tendering. HR - For Section 1, tendering is foreseen for 2023, For Section 2, 3 and 4 it is foreseen for 2023/2024 8. Construction - Construction for the Croatia Sections is foreseen for 2023/2024 9. Commissioning – 2025
	Main problems	Financing and defining the pipeline route in Montenegro section.
Other information and data		

5.2 Upgrade of Rogatec Interconnection between Slovenian and Croatian Gas Systems (M1A/1 Interconnection Rogatec) (HR and SI)

COUNTRY Croatia - Slovenia	DATE June 2023
Project title	**Upgrade of Rogatec interconnection between Slovenian and Croatian gas systems (M1A/1 Interconnection Rogatec)**
Project description	The upgrade of interconnection point between Slovenian and Croatian gas systems at Rogatec (Slovenia) is a part of the PCI: 6.26.1 Cluster Croatia-Slovenia-Austria at Rogatec, including: - interconnection Croatia-Slovenia (Lucko-Zabok-Rogatec) - compressor station Kidricevo, 2nd phase of upgrade (SI) - compressor stations 2 and 3 at the Croatian gas transmission system - GCA 2015/08 Entry/Exit Murfeld (AT) - upgrade of Murfeld/Cersak interconnection (AT-SI) - upgrade of Rogatec interconnection. Purpose: Development of transmission system of Slovenian and Croatian TSO, increasing the transmission capacity and enabling bidrectional operation. General criteria: • removing bottlenecks • improving N-1 for the Slovenian TSO • improving SoS for AT, SI, HR • base for future LNG evacuation
Project promoters	- Plinovodi d.o.o. for the Slovenian gas projects - Plinacro d.o.o. for the Croatian gas projects - Gas Connect Austria Gmbh for the Austrian gas projects

		Promoting countries: SI, HR
Period of realisation/commissioning year		December 2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	From 42.8 mEUR to up to 98.9 mEUR for Slovenian part, depending on capacity (from 1,1 bcm/y up to 5,5 bcm/y)
Status of the project in the process of realisation	*Project documents*	National spatial planning documentations
	Construction/implementation work	Analysis: Transmission gas pipeline M1 Cersak - Rogatec and M1/1 Cersak-Rogatec-Reverse flow enabling
	Main problems	
Other information and data		

5.3 Southern Gas Interconnection Pipeline between Bosnia and Herzegovina and Croatia (Split-Zagvozd-Posusje-Novi Travnik with Main Branch to Mostar) (BA and HR)

COUNTRY Bosnia and Herzegovina - Croatia	**DATE June 2023**
Project title	**Southern Gas Interconnection Pipeline BA - HR (Split-Zagvozd-Posusje-Novi Travnik with a main branch to Mostar)** PECI: Gas_03 PMI Status ENTSO-G – TRA-N-851 (Bosnia and Herzegovina) and TRA-A-302 (Croatia).
Project description	Project interconnects natural gas systems of Bosnia and Herzegovina and Croatia. Main goal is to establish new supply route for Bosnia and Herzegovina providing reliable and diversified natural gas supply increasing security of supply (BA current N-1 = 0). Having in mind limited capacity and age of the existing supply route, soon this pipeline could become the only gas supply route for Federation of BA. Project is included in Strategic Plan and Program of Development of Energy Sector of FBA. Also, it is included in Comprehensive Energy Strategy of BA until 2035 which is in adoption process. Project is on the PECI PMI 2016 List and is included in ENTSO-G TYNDP. Government of FBA in June 2017 has issued the Conclusion on Strategic Importance for FBA of South Interconnection project and on continuing and intensifying activities on its realisation. The Project will enable diversification of the routes as well as sources of supply (access to LNG terminal Krk, natural gas storages in the neighbouring countries, gas sources in the Caspian region, EU Gas Hubs, etc.). Southern Gas Interconnection Pipeline of Bosnia and Herzegovina and Croatia together with the planned Northern Gas Interconnection Pipeline (Slobodnica (HR) Brod (BA) – Zenica) forms a part of Energy Community Gas Ring. Project is also of great regional significance

		due to market integration by connecting the natural gas transmission system of Bosnia and Herzegovina with the neighbouring Croatian system as well as with European natural gas transmission systems. Project will significantly contribute to diversification of entry/exit points of the Croatian gas transmission system with the neighbouring countries. The Project also increases the utilization of the Croatian existing transmission system including LNG, and it increases the market for planned pipelines such as IAP and others. The interconnection capacity is up to 1.5 bcm/y.
Project promoters		BH-Gas d.o.o. Sarajevo Promoting countries: BA, HR
Period of realisation/commissioning year		FS, ESIA, Preliminary Design 2018-2019; Main Design 2019-2021; Tendering and Construction 2023; Commissioning year 2024
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	0,40 (WBIF-2011) / 0,141 (CONNECTA-2017) / 0,5 (USAID-2019) /1,511 (CONNECTA - 2019) /20,028 (WBIF INV 6 round - 2021)
	Financial amount to be provided and sources of financement	<u>FS, ESIA Preliminary Design:</u> Grant 0.25 mEUR expected from USAID; BA-Gas own fund 0.5 mEUR; <u>Main Design:</u> 1.25 mEUR BA-Gas own fund <u>Construction:</u> 80 mEUR EBRD Credit (preliminary discussions are ongoing)/Possibility to get amount of 50% i.e., 40 mEUR for construction works from EU funds is being investigated 15 mEUR BA-Gas shoud provide own fund CAPEX: 252 mEUR

Status of the project in the process of realisation	*Project documents*	**1. Prefeasibility Study** - Finished - 2013, October; **2. Feasibility Assessment, ESIA/EIA and Design Studies** BA: CBA (EC grant) - Finished - 2018, May Technical and Economic Feasibility (USAID grant)- Finished - 2020, October Preliminary Design (EC grant)- Finished - 2020, October
	Construction/implementation work	Revision of Preliminary design (JASPERS through EC grant) - Finished – 2020 ESIA (USAID grant) - Finished - 2021, January HR: Technical Feasibility - Finished - 2016, June Economic Feasibility - Finished - 2018, May ESIA - Finished - 2014. **3. FEED/Main Design.** BA: scheduled for 2021 - 2022. HR: Sections Split-Zagvozd and Zagvozd -Imotski - Main Design drawn up; section Imotski-border - Main Design will be drawn up by the end of 2021. **4. Permitting:** BA: Environmental Permit has been prepared and expected to be issued in middle of June 2021 for BA section. The Location Permit for all section by the end of June 2021; Construction Permit in 2023. In order to facilitate permitting procedures and accelerate its realization, the Government of Federation of BA has prepared Draft Law on Southern Interconnector BA-Croatia, which is now in Parliamentary procedure for final adoption. HR: ESAI issued for all sections; Location Permit issued for Split-Zagvozd and Zagvozd-Imotski, Imotski-border- by the end of 2021; Construction Permit for Split-Zagvozd and Zagvozd-Imotski, by the end of 2021; for section Imotski-border in 2022. The permitting process is 30% complete for the Bosnia and Herzegovina section and 80% complete for the Croatia section

		1. **Construction and commissioning:** 2024
	Main problems	Financial support for the Project is needed, but there are certain difficulties in terms of access to EU funds for construction works from the position of BA as non-EU Country.
Other information and data		

6. TAP2 - Doubling of Trans-Adriatic Gas Pipeline Capacity (Lead Country: Italy, IT))

This cluster includes two projects, the upgrade of Trans-Adriatic Pipeline (TAP) and Minerbio-Sulmona natural gas pipeline in Italy.

TAP is a key supply diversification infrastructure running from Greece's border with Turkey to Italy, via Albania and the Adriatic Sea. The pipeline is part of the Southern Gas Corridor, along with South Caucasus and Trans-Anatolian gas pipelines. The route links Europe to a new gas source in the Caspian (Shah Deniz II). The pipeline became operational in October 2020. This cluster includes the TAP 2 – doubling of TAP capacity project.

Minerbio-Sulmona natural gas pipeline is aiming at the construction and operation of a new natural gas pipeline as one of the sections of the “Adriatic Pipeline” which is a key to the transport of natural gas along the Adriatic coast of Italy with a view at natural gas imported into Italy through the Trans-Adriatic Pipeline (TAP) and its planned upgrade (TAP2).

The cluster addresses theTSG2 priority action related to the construction and establishment of a well-connected gas infrastructure and well-functioning electricity market.

TSG2 priority sub-action that this cluster also addresses is related to the Diversification of natural gas sources, infrastructures and routes to promote security of natural gas supply and competitiveness.

Lead country is Italy, while partner countries are: Albania and Greece.

6.1 TAP2 - Doubling of Trans-Adriatic Gas Pipeline Capacity (IT))

COUNTRY Italy	DATE June 2023
Project title	**Doubling of TAP capacity**
Project description	The Incremental Capacity Project concerns 5 (five) Interconnection Points (IPs) along the route of the Trans Adriatic Pipeline (TAP), being: Kipoi (TR-GR), Nea Mesimvria (GR), Korca (AL), Fier (AL), and Melendugno (IT). In particular, the Incremental Capacity Project comprises the following: • Incremental capacity offered jointly by TAP and SRG at the IP of Melendugno as a bundled capacity product. • Incremental capacity offered jointly by TAP and DESFA at the IP of Nea Mesimvria as a bundled capacity product. • Incremental capacity offered by TAP at the IPs of Kipoi, Korca, Fier as unbundled capacity products on the TAP side of the IP. This Incremental Capacity Project is primarily driven by potential increases of the technical capacity at IPs along the TAP pipeline route. If infrastructure upgrades necessary for the Incremental Capacity Project are realised by the interconnected TSOs, then additional natural gas flows from the Greek-Turkish border will potentially reach the markets of Greece, Albania and Italy. Hence, this Incremental Capacity Project is conducted in close coordination by TAP, SRG and DESFA, to enable the offering of capacities at the IPs shared by the TSOs Concerned.
Project promoters	TAP, SRG and DESFA Promoting countries: IT, GR, AL

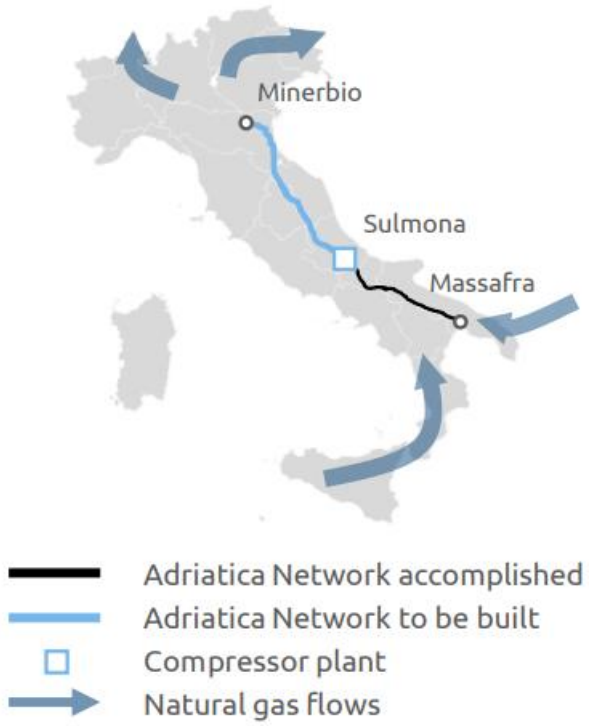
Period of realisation/commissioning year		Market tests are held at least every two years following the operation of TAP. The market tests are structured in two phases: - non-binding phase - binding phase. On 12 July 2021, TAP invited stakeholders and interested parties to participate in the non-binding phase of the 2021 market test, by requesting specific documentation in a structured timeframe. TAP accepted non-binding demand indications until 6 September 2021.
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	In January 2020, SRG, DESFA and TAP in accordance with the provisions set out in article 27 (3) of CAM NC, jointly launched a public consultation on the draft Project Proposal written with the purpose to meet the received indicative non-binding demand requests. The TSOs have received comments during the public consultation from 3 (three) respondents. These comments have been considered to the extent possible in the subsequent design phase of the Incremental Capacity Project. In line with the provisions of Article 28 CAM NC Project Proposal is submitted to the Italian, Greek and Albanian NRAs for their evaluations.
	Construction/implementation work	
	Main problems	

Other information and data	

6.2 Minerbio-Sulmona natural gas pipeline (IT)

COUNTRY Italy	**DATE June 2023**
Project title	**Minerbio Sulmona (part of Rete Adriatica Pipeline, natural gas transport network)**
Project description	The Rete Adriatica project is being built in five phases, as follows: • Phase 1: Massafra to Biccari (operating) • Phase 2: Biccari to Campochiaro (operating) • Phase 3: Sulmona to Foligno (authorised) • Phase 4: Foligno to Sestino (planned) • Phase 5: Sestino to Minerbio (planned) The two currently operating phases are: Adriatica pipeline run from Massafra (Apulia) to Sulmona (Abruzzo), passing through Biccari (Puglia) and Campochiaro (Molise). The remaining three phases of the pipeline will start at the compressor station currently under construction at Sulmona and run north to Minerbio (Emilia Romagna), passing en route through Foligno (Umbria) and Sestino (Tuscany). The pipeline, when completed, will transport gas from southeastern Italy to the northern region of Emilia Romagna. The 430-kilometer northern section of pipeline between Sulmona and Minerbio, together with the new Sulmona compressor station, have been approved for inclusion on the European Commission's Projects of Common Interest list, meaning that they can apply to receive public funding from the EU. According to the European

		Commission, "The project consists in a new onshore pipeline of approx. 430 km and in a new compressor station of 33 MW that will create a new transmission capacity of approximately 24 mcm/day (264 GWh/day) to transport gas from new or existing entry points in the south of Italy." The European Network of Transmission System Operators for Gas (ENTSO-G puts the overall cost of the Phase 3, Phase 4 and Phase 5 projects at 1.384 billion EUR. At its southern terminus, the Adriatica Pipeline connects with the Matagiola-Massafra Gas Pipeline, which in turn feeds into the TAP Interconnection Gas Pipeline, ultimately connecting with the Trans-Adriatic Gas Pipeline, a major component of the Southern Gas Corridor (SGC) development, which brings natural gas from Azerbaijan to Europe.
Project		SNAM Rete Gas S.p.A.
Period of realisation/commissioning year		Commissioning by the end of 2027
Total financial amount of the project/measure	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Capex: 0.9 billion EUR in 2022-26 Plan of SNAM
Status of the project in the process of realisation	*Project/measure documents*	November 2022, the Ministry of Environment and Energy Security (MoEES) has signed the permit-granting decree for the final design of the Sulmona-Foligno gas pipeline (phase 3), thereby giving the green light to the construction and operation of the facility.
	Construction/implementation work	
	Main problems	The Adriatica Pipeline has generated considerable opposition locally and throughout Italy, with the protest movement gaining national attention and receiving support from leading Italian environmental groups such as Legambiente. Protests against the plant have

		focused on the pipeline's vulnerability to earthquakes due to its proposed route through several of Italy's most active seismic zones, and the negative impacts of constructing a 12-hectare compressor plant in the community of Sulmona (population 24,000). However, the energy crisis of 2022 has made urgent the realization of the project to the benefit of energy security of Italy and on the rest of Europe.
Other information and data		

7. Natural Gas North Macedonia Connectors with Neighbouring States (Lead Country: North Macedonia, MK)

Natural Gas North Macedonia connectors with neighbouring states is a cluster of projects consisting of new gas pipelines and counterflows through the Balkan region. It's a part of the Transbalkan Gas Ring cluster.

This cluster includes the interconnection projects between North Macedonia and Serbia, North Macedonia and Greece and North Macedonia and Albania.

It addresses theTSG2 priority action related to the construction and establishment of a well-connected gas infrastructure and well-functioning electricity market.

TSG2 priority sub-actions that this cluster also addresses are related to:

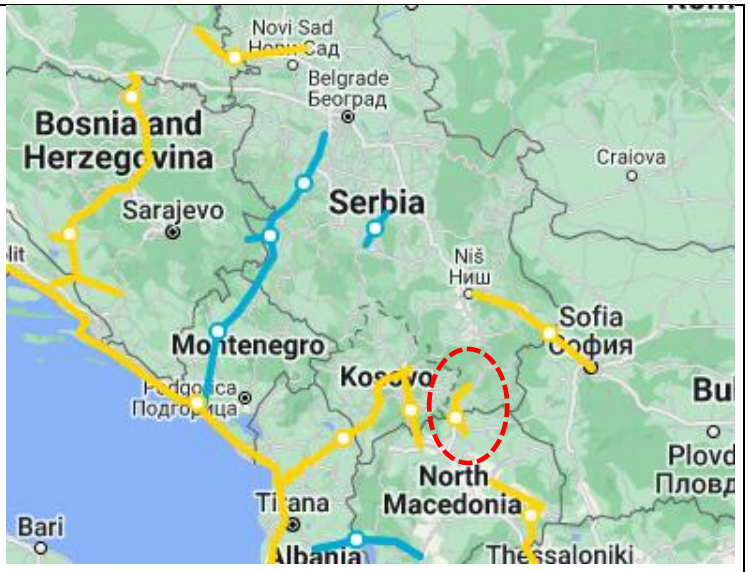
a) Diversification of natural gas sources, infrastructures and routes to promote security of natural gas supply and competitiveness;
b) Development of interconnections, counterflows and natural gas storage along a regional perspective.

Lead country is North Macedonia while Albania, Greece and Serbia are partner countries.

7.1 Interconnection between Gas Transmission Systems of Serbia and North Macedonia (RS and MK)

COUNTRY North Macedonia - Serbia	DATE June 2023
Project title	**Gas interconnection between the Serbian gas transmission systems and Macedonian gas transmission system** PECI GAS_11 TYNDP 2022
Project description	The project consists of an interconnection between the Serbian gas transmission system and Macedonian gas transmission system as a part of the Trans Balkan corridor. The project would allow: - Competitiveness of natural gas market - Connecting the gas transmission of both countries with the region (market integration) which would lead to economic, financial and social benefit. - Development of the region by using the natural gas as energy source as well as security of energy supply in the economic development of the region- Introducing a higher level for achieving economic and social benefits - Advancement and protection of the environment with higher utilization of natural gas as ecologically clean fuel, in the coal transition etc. - Ensuring security of suppy - The project can allow to JSC NOMAGAS to increase the utilisation of its infrastructure for transit, enabling, in this way, the reduction of the transportation tariff - The project can allow to Transportgas Srbija faster development of gasification in South Serbia. The TYNDP code of the Project is TRA-N-965.The project is on the proposed PECI list for 2020 by the ECS. A Technical grant has been secured within IPA Instrument Investment framework of the Western

		Balkans (Flagship 5 - Transition from coal) for the project Gas interconnection with Serbia in 2021. Terms of reference for feasibility study and ESIA were completed in March 2023.
Project promoters		The two parts of the mentioned interconnector are going to be built and operated by the respective TSOs in the countries Transportgas Srbija and NOMAGAS JSC. Promoting countries: MK, RS
Period of realisation/commissioning year		2026
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	WBIF TA Grant (WB25-MKD-ENE-01) was approved in June 2021 with a total value of 960,000 EUR for preparation of Feasibility Study and ESIA
	Financial amount to be provided and sources of financement	NM: Capital costs of the gas interconnector with Diameter: ø508 mm (DN500), length: L= 23 km and technical capacity Q= 160000 m3/h on Macedonian territory is 14 mEUR. Credit loans are planned to be secured through European Banks. RS: Capital costs of the gas interconnector (DN500, length: L= 47 km, capacity:1,04 m3/h) on the Serbian territory is 42 mEUR. Credit loans are planned to be secured through EBRD, budgetary funds and contribution of PE Srbijagas/ Transportgas Srbija LLC.
Status of the project in the process of realisation	*Project documents*	RS: Develpoment of the basic design is on-going. Goverement of the Republic of Serbia has adopted the Decision on adoption of the Spatial Plan of the Special Purpose Area.
	Construction/implementation work	
	Main problems	

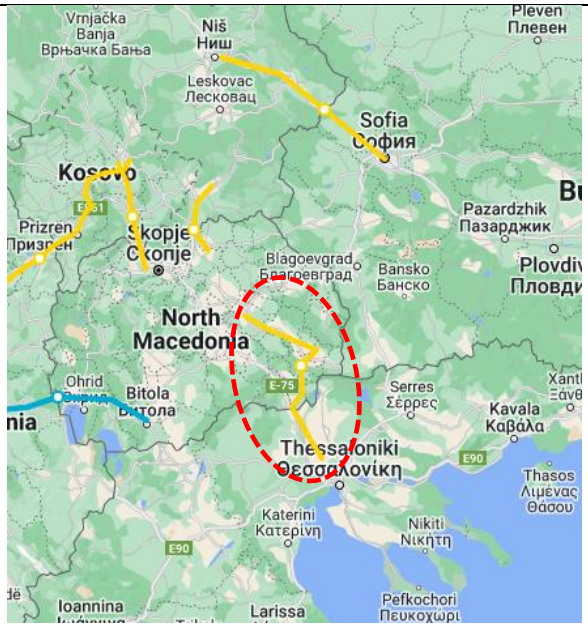
Other information and data	

7.2 Interconnection between the Natural Gas Transmission Systems of Greece and North Macedonia (GR and MK)

COUNTRY North Macedonia - Greece	DATE June 2023
Project title	**Gas Interconnection between the Greek gas transmission system and Macedonian gas transmission system** PECI GAS_4B TYNDP 2022
Project description	This project aims at Diversification of natural gas supply in the gas market of North Macedonia, given that the only source of natural gas in the country comes from Gazprom, Russian Federation. Competitiveness of natural gas market – the construction of the gas interconnector allows access to various sources of natural gas which will increase the competitiveness of the natural gas market. Ensure market integration aiming at allowing the consumers to have gas prices like those of the neighbouring countries. Connecting the gas transmission system of North Macedonia with the region (market integration) would lead to economic, financial and social benefits. The implementation of the project for construction of gas interconnection between the two countries will bring economic and financial benefits to and the region as well. Development of the regional Gas Hub in terms of using the natural gas as energy source as well as security of energy supply in the economic development of the region. Regional context The Project will contribute to the economic development of the region and energy regional cooperation. This project will boost cooperation with Greece in the field of energy, and will improve the

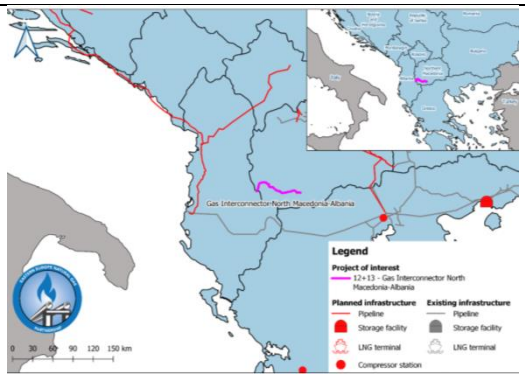
		diplomatic and economic relationships between the two countries, offering a concrete example of mutual trust in a strategic sector Contribution to the security of supply (reducing the risk of continuous supply of the country with natural gas, whereas the investment risk decreases also) Most of the objectives of the Project are in line with the EU Regulation No. 347/2013 and the project code in the TYNDP is TRA-N-967. The project is also part of PMI list for 2020 by the ECS.
Project promoters		The two parts of the mentioned interconnector are going to be built and operated by the respective TSOs in the countries DESFA and NER JSC Promoting countries: MK, GR
Period of realisation/commissioning year		Construction phase & start of commercial operation: Q1 2023 – Q3 2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	The Financing plan for the Greek part includes EIB loan, DESFA's own equity or other loan So far, a TA Grant from Connecta is secured in amount of 1mEUR, for preparation of the Cost-Benefit-Analysis, Basic Design, Environmental and Social Impact Assessment). Also, a WBIF Investment Grant was secured WB-IG04-MKD-ENE-01 in amount of 12.4 mEUR for the construction of the part of the gas interconnector in North Macedonia
	Financial amount to be provided and sources of financement	The part of the gas interconnector in the territory of North Macedonia is with length of 68 km, pipe diameterØ 711 mm (DN 700) (28'') and capacity Q= 326 000 m3/h according to the FS & CBA will have total capital cost in amount of 58 mEUR. The Part of the Project in the territory of Greece consists of a 54 km pipeline (30''), starting from Nea Messimvria and ending at the borders between Greece and North Macedonia, in Evzoni area, a border

		metering station (BMS) in the interconnection area and est. capacity 430,000 Nm3/h, and a Scraper Station (Launcher). Current budget: 67 mEUR. Licensing procedure is already concluded and financing is secured by DESFA's side
Status of the project in the process of realisation	*Project documents*	A single (binding) phase Market Test was launched in July 2022 with a Binding Bid submission deadline in 30th of September of 2022. Currently, DESFA is in the assessment process of the submitted bids by the Participants. The outcome of the assessment, which includes the results of the Economic Test is expected to be concluded in October 2022. Licensing procedure is already concluded and financing is secured by DESFA's side • In case of a positive Economic Test, DESFA will proceed to the signing of the ARCAs with the Participants and will notify the NRA accordingly. Following NRA's approval (and the inclusion of the Project in DESFA's TYDP, without prerequisites), the common FID can be counter-signed by both NER and DESFA. Expected date for the FIDs is by the end of 2022 A Feasibility Study has been prepared by DESFA S.A. and NER JSC Skopje, January 2019 and submitted to EIB; A Request for Technical Assistance (100% grant) for the preparation of Environmental impact assessment study, Cost-benefit analysis and Basic Design was submitted to Connecta (CONNECTA Technical assistance to connectivity in the Western Balkans). The application was approved in January 2019. The Study has already been prepared and submitted to EIB and the Ministry of environment and a Decision has been received from the Ministry; The project documentation is in the final stage. - A request for technical assistance (100% grant) was submitted to the EU Delegation for a Reviewer
	Construction/implementation work	
	Main problems	

		of the project documentation and it was approved. The reviewer of the project documentation was selected and the audit started in April 2021; - Within the Investment Grant, a Technical Assistance (100% grant) was requested for Supervision, Inspection Body, Management, etc. and it is approved; - A Request for expression of interest for project financing was submitted to the European Investment Bank, October 2018.The European Investment Bank submitted a positive response to this request, November 2018; - A request for technical assistance (100% grant) was submitted for the preparation of tender documentation for supervision, construction, inspection body and construction management to Connecta. The application was evaluated positively and the tender documentation is under preparation.
Other information and data		

7.3 Interconnection between the Albanian and Macedonian Natural Gas Transmission Systems (AL and MK)

COUNTRY North Macedonia - Albania		DATE June 2023
Project title		**Gas interconnection between Albanian gas transmission system and Macedonian gas transmission system.**
Project description		The main purpose of the construction of this main gas pipeline section arises from the strategic commitment of the Government in order to achieve higher level of overall functionality of the energy system in the country and to provide conditions for significantly greater infrastructural and economic integration with the neighbouring and the remaining European countries. This project will ensure the diversification of natural gas sources and supply routes and the liberalization of South-eastern Europe's energy market. Allowing access to energy fuel on the territory around City of Ohrid and possibility for interconnection with IAP on Albanian territory. This interconnection is also included in Albanian gas Master Plan and the project code in the TYNDP is TRA-N-998.
Project promoters		The two parts of the mentioned interconnector are going to be built and operated by the respective TSOs in the countries ALBGAZ and NOMAGAS JSC.
Period of realisation/commissioning year		2026
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	None
	Financial amount to be provided and sources of financement	The total capacity of the main gas pipelines with diameter: ø508 mm DN500 from city of "Ohrid to border with Abania" is Q= 248.000 m3/h The capital costs of the part of the gas interconnector on Macedonian territory (27 km) is in amount of 17.5

		mEUR and the credit loans are planned to be secured through European Banks. The Albanian part cost of 71.7 km is in amount of 45 mEUR.
Status of the project in the process of realisation	*Project documents*	Gas Master Plans are developed by both countries
	Construction/implementation work	
	Main problems	Securing IFIs for the Projects by both sides
Other information and data		

8. EAST-MED Gas Pipeline (Lead Country: Greece, GR)

This cluster includes the Eastern Mediterranean Gas Pipline (East-Med), a gas pipeline from the South-Eastern Mediterranean Sea through Crete Island, into Greece mainland including the interconnector Poseidon from Greece to Italy.

It addresses theTSG2 priority action related to the construction and establishment of a well-connected gas infrastructure and well-functioning electricity market.

TSG2 priority sub-action that this cluster also addresses is related to the Diversification of natural gas sources, infrastructures and routes to promote security of natural gas supply and competitiveness.

Lead country is Greece.

8.1 Eastern Mediterranean Pipeline (EastMed) (GR)

COUNTRY Greece		DATE June 2023
Project title		**The Eastern Mediterranean Pipeline (EastMed)**
Project description		The EastMed Pipeline Project interconnects the available and already in production gas fields in the Levantine basin to the European markets via Cyprus and Greece. This project is currently assigned to transport up to 20 bcm/y up to the inlet point with Poseidon Pipeline Project, plus 1 bcm/y that will be delivered to Cyprus to satisfy its internal consumption. In order to sustain the energy transition in the area, the Project Promoter is designing the Project as "hydrogen ready" and is considering a design that could allow the opportunity to interconnect the future hydrogen renewable production sites located along the route. The Project Promoter completed the feasibility studies of the Project in 2019, expects to conclude the FEED phase in the first half of 2023 and complete the construction phase in in 4 years in order to have the commercial operating date in 2027.
Project promoters		IGI POSEIDON (50% DEPA INTERNATIONAL PROJECTS -50% EDISON) Promoting country: CY, GR, IT
Period of realisation/commissioning year		1Q 2024 – 1H 2027/2H 2027
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	• Obtained 2 mEUR grant under the CEF for action entitled "Eastern Mediterranean Natural Gas Pipeline - Pre-FEED studies" (11/05/2015-31/03/2018). • Another grant agreement was concluded between INEA and IGI Poseidon SA, regarding 34.5 mEUR grant for the action entitled "EastMed Pipeline Project Development Phase", that runs from 02/05/2018 to 31/12/2022. • In September 2022, IGI Poseidon submitted two CEF applications for EU co-funding and applied for the

		installation of the first section of the line between Israel and Cyprus (Works) and the development of the hydrogen readiness lab-testing verification and the pre-construction activities necessary to ensure the completion in 2027 (Studies)
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	• The PRE-FEED Phase, that included a Technical Feasibility Study, a Reconnaissance Marin Survey and Competitiveness Analysis was successfully completed in 2018 and certified by DNV in 2019. • DMS survey has been completed for most of the route. The remaining activities are planned to be performed and completed between the end of the 2022 and the 2023. • The ongoing FEED phase has now reached an advanced stage thanks also to the early involvement of the EPCI tenderers in the design activities, with the aim to optimize engineering and anticipate & mitigate any installation issues. The completion of the FEED is expected within April 2023. • The EPCI offshore tender is in progress on the basis of an ongoing competitive dialogue procedure involving the two pre-qualified tenderers: the final binding offers are expected in the first half of 2023. The EPCI onshore and facilities tenders have been launched in June 2022: the final offers are expected within the beginning of the 2023. • The project was confirmed as technically feasible, economically viable and commercially competitive. In light of the positive outcomes achieved in the design, in June 2022 DNV, the independent assurance and risk management firm, certified the technical feasibility of the EastMed Pipeline Project as well as its technical maturity. In July 2022, Ernst & Young (EY), world's leading consulting firm, following an assessment performed on economics of the Project, confirmed the

		Project economic viability and competitiveness. In August 2022, the Involved EPCI's Contractors, Saipem and Allseas, confirmed the constructability and installability of the Pipeline on the basis of the updated design and outcomes from development activities; • In June 2022, the Project Promoter submitted the ESIA application to the competent authorities in Cyprus and Greece. • FID is currently targeted within 2023 and the expected COD in 2027.
	Construction works	• The construction activities are planned to start within 2023 and the construction period has been confirmed in around 4 years.
	Main problems	• In some offshore sections of the Project, the performance of the planned surveys has been interrupted due to some situations beyond the control of the Project Promoter, such as Third-Party Interference.
Other information and data		

8.2 Poseidon Gas Pipeline (GR and IT)

COUNTRY Greece - Italy		DATE June 2023
Project title		**The Poseidon pipeline**
Project description		The Poseidon Pipeline Project consists of a multisource offshore pipeline that will connect the Greek and Italian natural gas systems and transport natural gas available by East Mediterranean and the Middle East sources and the low carbon gases imported by the Levantin area or produced in Greece by the future renewable installed sources. It will be connected with the EastMed pipeline in Florovouni. The Project Promoter completed the FEED phase in 2019, performed the construction tenders and is planning to complete the hydrogen ready interconnector within the 2025.
Project promoters		IGI POSEIDON (50% DEPA INTERNATIONAL PROJECTS -50% EDISON) Promoting country: GR, IT
Period of realisation/commissioning year		2H 2023 – 2H 2025/ 2H 2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	• The offshore pipeline was included in the list of projects to be funded by EEPR 2009. An amount of 5,5 mEUR had been allocated mainly for technical development activities at Front-End-Engineering-Design and Design Appraisal and Certification. • In September 2022, IGI Poseidon submitted the CEF application for EU co-funding, applied to start the pre-construction activities, in line with the already in place authorization, in order to ensure the hydrogen transportability and the commission date within 2025
	Financial amount to be provided and sources of financement	

Status of the project in the process of realisation	*Project documents*	The Poseidon Pipeline project has an enhanced level of maturity due to the already performed Engineering and Permitting activities. The Poseidon Pipeline is ready to be constructed due to the fact that: • FEED design has been completed • The environmental authorizations and construction permits have been obtained and are in place in Greece and Italy • Construction and procurement tenders performed. Contracts already finalized with counterparties. FID is currently targeted within 2023 with an expected COD in 2025
	Construction/implementation work	The construction activities are planned to start within 2023 and the construction completion is expected in 2025.
	Main problems	
Other information and data		

9. Infrastructure Development for LNG (Lead Countries: Albania, AL – Croatia, HR -Greece, GR – Italy, IT)

This cluster includes projects that involve in LNG supply and delivery, construction and operation of LNG storage facilities and LNG safety and logistics. LNG has great potential for replacing heavy fuel oil and diesel in freight transport and shipping, as well as in supply to industrial sites and communities not connected to a pipeline network.

It addresses theTSG2 priority action related to clean fuels for maritime transport and their logistics.

TSG2 priority sub-actions that this cluster also addresses are related to:

a) Developing a master plan for the use of LNG and other clean fuels in the Adriatic and Ionian Sea with a view at an Environmentally Controlled Area;
b) Establishing a few ports with infrastructure to allow fuel switching of LNG in shipping and wider LNG deployment.

Lead countries are Albania, Croatia, Greece and Italy, promoting one project each.

9.1 Marine LNG Refueling Points in the Adriatic and Ionian Sea (GR)

COUNTRY Greece	DATE June 2023
Project title	**Marine LNG refueling points in the Adriatic & Ionian Sea**
Project description	Construction of ssLNG infrastructure for bunkering in the Adriatic-Ionian Region ports. Refueling points would contribute to: sustainable shipping decarbonisation for tackling climate change, security of marine fuel supply (one of the main concerns of the shipping industry), air quality in urban areas and ports, and regional ports' competitiveness. The project could build upon experience of a wide range of stakeholders from the Adriatic-Ionian Region, representing national, regional and local authorities, private sector, academia and deliverables of current EU co- financed projects such as Poseidon Med II (CEF, TEN-T) or Super LNG (Interreg- Adrion). A number of ssLNG infrastructure for bunkering through the European Union could be leading examples. The project is proposed for the EUSAIR label and has been endorsed as a priority action by the TSG2 Sub-Group on Energy Networks. The project responds to the Directive 2014/94 / EU "A central network of LNG refueling points in seaports and Inland ports should be available at least until the end of 2025 and 2030 respectively". It is in line with the transport, energy and climate policy of the European Commission. The project may include survey of existing and planned infrastructure, estimated CAPEX and opportunities for EU funding. It can also include proposal for an ECA zone.

Project promoters		Ministry of the Environment & Energy of Greece, Ministry of Transport of Greece, Ministry of Shipping of Greece, Ministry of xxx of Greece, in cooperation with National Regulatory Authority, Port Authority of Patras, Port Authority of Igoumenitsa, Energy Traders, DESFA. Ministerial administrations, port authorities, LNG terminal operators from the Adriatic & Ionian Region are kindly invited to join the team.
Period of realisation/commissioning year		2021-2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	Administrative costs for meetings will be covered by relevant stakeholders. No dedicated staff is required. Estimated cost for refueling points network (ssLNG infrastructure for bunkering): preliminary CAPEX for ssLNG facilities of participating ports.
Status of the project in the process of realisation	*Project documents*	**Main benefits**: LNG as a marine fuel can meet EU's climate and air quality targets and lays the ground for the carbon neutral liquified biomethane (LBM) and liquified synthetic methane (LSM) without additional investment in ssLNG assets. LBM or LSM that can be fed into the existing gas infrustructure. Hence, gradual replacement of LNG with LBM or LSM will avoid i) devalued or stranded regional assets and ii) future capital intensive infrastructure in the region.
	Construction/implementation work	
	Main problems	**Main problems**: EU "Green Deal" lending policy for natural gas infrastructure and regulatory framework.
Other information and data		

9.2 Port of Vlora Floating Storage and Regasification Unit (AL)

COUNTRY Albania	DATE June 2023
Project title	**Port of Vlora FSRU**
Project description	Excelerate Energy L.P. (Excelerate), ExxonMobil LNG Market Development Inc. (ExxonMobil), and the Republic of Albania (the Ministry of Infrastructure and Energy) signed a Memorandum of Understanding (MOU) on March 12, 2021, to conduct a feasibility study for the potential development of a liquefied natural gas (LNG) project in the Port of Vlora in Southern Albania. Under the MOU, Excelerate will conduct a study to explore the potential of an integrated LNG-to-power solution that includes developing an LNG import terminal, converting and/or expanding the existing Vlora thermal power plant, and establishing small scale LNG distribution to Albania and the surrounding Balkans region. The LNG Terminal is under feasibility phase conducted by EE. In the first half of 2022, plans to develop the terminal were moving ahead rapidly. Excelerate's CEO Steven Kobos announced in a May 2022 conference call that the company would move its FSRU vessel Excelsior from Israel to Albania at the end of 2022, with commercial regasification operations expected to begin at Vlore in the second quarter of 2023. Development of the new terminal has prompted talk of Albania becoming a gas hub for the Balkans; as of June 2022, Albania had already begun discussing new energy agreements with neighboring countries including Kosovo, Montenegro, North Macedonia, and Bulgaria. In July 2022, Excelerate announced that it had signed a memorandum of understanding with Bulgaria's Overgas for negotiations to take place on the sale of regasified LNG downstream of the planned Vlora LNG terminal. The two companies said that they would enter into a negotiation for Overgas to purchase up to 1.0 bcm of regasified LNG annually for ten years from Excelerate (or an affiliated entity) via the Vlora Terminal and the proposed Vlora-Fier

		Gas Pipeline which is expected to interconnect with existing natural gas infrastructure in Europe's Southern Gas Corridor.
Project promoters		Excelerate Energy L.P. (Excelerate), ExxonMobil LNG Market Development Inc. (ExxonMobil), and the Republic of Albania (the Ministry of Infrastructure and Energy)
Period of realisation/commissioning year		The Terminal is expected to be commissioned in the 1st Quarter 2024, with a projected capacity around 5 bcm/y.
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	Proposed
	Construction/implementation work	
	Main problems	
Other information and data		

9.3 Expansion of the Existing Floating LNG Terminal on Krk Island (HR)

COUNTRY Croatia	DATE June 2023
Project title	**Expansion of the existing floating LNG terminal on Krk Island**
Project description	Krk Terminal (also known as LNG Hrvatska and LNG Croatia) is an operating floating LNG terminal in Croatia. The expansion of the capacity of the LNG terminal in Krk will be accomplished by installing an additional regasification unit with a capacity of 250,000 m3/h on the existing FSRU. As a result, the new maximum regasification capacity will be 700,000 m3/h, which equals 6.1 bcm/y. The current technical capacity of regasification is 2.9 bcm/y. The Project implementation will enhance the diversification of the natural gas supply, increase the security of the gas supply, improve the region's competitiveness, and provide for more effective integration of key infrastructure projects into the European gas market. The necessary precondition for utilization of the expanded capacity of the LNG Terminal in Krk is the further development of the gas pipeline. In order to achieve this goal, Croatian Government directed the Croatian Transmission System Operator, Plinacro Ltd, to commence the construction-related tasks for the Zlobin - Bosiljevo pipeline. The plan is for the works to be completed till Q3 2025 to be able to offer additional capacity for the gas year 2025-2026. The additional capacity that can be offered to the market is limited with the gas pipeline development and for the first phase the expected additional capacity will be about 0.6 bcm/y. The capacity of the expanded terminal will go beyond the needs of Croatia’s industry and households allowing Croatia to play a more regional role and many countries in the neighbourhood such as Slovenia, Hungary or Bosnia and Herzegovina to benefit from diversified supplies.

Project promoters		LNG Croatia LLC
Period of realisation/commissioning year		Q3 2025
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	15 mEUR
	Financial amount to be provided and sources of financement	25 mEUR
Status of the project in the process of realisation	*Project documents*	The phase 2 expansion of the terminal was not included in the 5th PCI list published by the European Commission in November 2021. The assessment of ENTSO-G has shown that, in the medium term, an expansion of the capacity of the LNG terminal in Krk will further help mitigate Russian supply dependence. The measure was prescribed under governmental Decision on increasing the security of supply through the development of the Zlobin - Bosiljevo pipeline and expanding the LNG capacity (OG 96/2022). LNG Croatia LLC has already started with procurement of key infrastructure. Plan is to have the additional capacity ready and available for the gas season 2025-2026.
	Construction/implementation work	
	Main problems	
Other information and data		Project benefits include: significant decrease of dependence on Russian gas in the region, providing diversity of supply of natural gas, providing security of supply of natural gas, introducing the ecologically sound energy source in the region, reducing CO_2 emissions in the region, facilitating economic development, etc.

9.4 Floating Storage and Regasification Unit (FSRU) off the Port of Ravenna with Connection to the National Gas Network (IT))

COUNTRY Italy	DATE June 2023
Project title	**FSRU off the port of Ravenna with connection to the national gas network**
Project description	Snam and BW LNG have signed an agreement for the acquisition by Snam Group of 100% of the share capital of FSRU I Limited, which upon closing will own the floating storage and regasification unit (FSRU) "BW Singapore" as its sole asset. BW Singapore, built in 2015, has a maximum storage capacity of about 170,000 cubic metres of LNG (liquefied natural gas) and a nominal continuous regasification capacity of about 5 bcm/y. The unit has been deployed from the outset as an FSRU but can also operate as a carrier for the transport of LNG. The project involves the mooring of a floating storage and regasification vessel offshore (8.5 km) Ravenna: the BW Singapore, purchased by Snam at the beginning of July. It has a regasification capacity of about 5 bcm, equivalent to about one-sixth of the amount of natural gas currently imported from Russia, and a storage capacity of 170,000 cubic metres of liquefied natural gas. It will be supplied by other ships at regular intervals, once a week at the most. In order to convey the gas to the point of interconnection with the national gas pipeline network, located approximately 42 km from the mooring point, a connection will be built consisting of an approximately 8.5 km section of pipeline at sea and a completely buried section of approximately 34 km, minimising the use of land. The plant and operations on board the ship will have minimal impacts, which Snam has committed to containing within limits significantly lower than those required by law.
Project promoters	Snam SpA

Period of realisation/commissioning year		2023-2024
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	
	Financial amount to be provided and sources of financement	approximately 400 mEUR SNAM own resources
Status of the project in the process of realisation	*Project documents*	The FSRU will be made available to Snam at the closing date of the deal, which is expected by the end of 2023.
	Construction/implementation work	The FSRU, which is currently bound by a charter agreement with a third party until November 2023, is expected to be installed in the upper Adriatic Sea, close to the coast of Ravenna. Operations are scheduled to commence in the third quarter of 2024, following the completion of the authorisation and regulatory process as well as the finalisation of the works required for mooring and connection to the gas transport network.
	Main problems	
Other information and data		With this operation, Italy will be provided with its second new floating regasification unit thus making a decisive contribution to the country's energy security and diversification. The two FSRUs acquired by Snam will contribute 13% of the national gas demand alone, bringing regasification capacity to over 30% of demand, as soon as we will get the permits to positioning them and get them connected to the national transmission network. The vessel's position in the upper Adriatic Sea will allow the new unit to intercept potential new LNG flows from North Africa and the Eastern Mediterranean.

10. The Balkan Energy School (BES) to Support Energy Regulatory Authorities in the Western Balkans (Lead Country: Italy)

This cluster include a soft project of creation of the Balkans Energy School with the objective of capacity building and knowledge transfer on energy regulation between Regulatory Authorities from Albania, Bosnia and Herzegovina, Greece, Italy, Montenegro and North Macedonia. Serbia is an observer.

The main goal is promoting debate and exchanging of knowledge in the field of energy on the topics of market development, market integration and market regulation and sustainability.

The cluster addresses theTSG2 priority action related to the development of an integrated electricity market as well as the wholesale electricity market in the Adriatic-Ionian Region.

Lead country: Italy.

10.1 The Balkans Energy School (BES) to Support Energy Regulatory Authorities in the Western Balkans (IT)

COUNTRY Italy	DATE June 2023
Project title	**The Balkan Energy School (BES) to support energy regulatory authorities in the Western Balkans**
Project description	The Balkan Energy School (BES) is conceived to strengthen the energy regulatory authorities in the Western Balkans. The announcement was made at the final conference of the KEP (Know-How Exchange Programme) project on 21 December 2021. The project, launched by ARERA within the programme CEI/EBRD (European Bank for Reconstruction and Development) - at the request of the Ministry of Foreign Affairs and International Cooperation (MAECI) and the Central European Initiative (CEI) - envisaged cooperation with Balkan regulators through the organization of technical seminars focused on how to implement market coupling mechanisms, useful for promoting the creation of a regional electricity market and its integration with the single European market (within the framework of the Western Balkans 6 Process). The project started in 2018 till present by means of specific ARERA resolutions, periodic meetings in the different countries and online activities during the pandemic emergency. The final phase of the project focused on the concrete measures that Balkan regulators will have to implement to address future challenges related to the energy transition and to comply with the relevant EU regulatory framework. Main activities of the School are organisation of internal seminars on topics related to electricity and gas markets; conferences and meetings with stakeholders.

		Members: Regulatory Authorities (RA) form Albania, Bosnia and Herzegovina, Italy, Montenegro and North Macedonia founded the Balkan Energy School in December 2022. In March 2023, Greek RA joined as a full member and Serbia RA as an observer.
Project promoters		ARERA (Italy)
Period of realisation/commissioning year		Launched in 2022
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	Know-how Exchange Programme Project "CEI Support to Strengthening Energy Regulatory Authorities in the Western Balkans" -funded by the CEI Fund at the EBRD with around 120,000 EUR.
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	
	Construction/implementation work	
	Main problems	
Other information and data		The School will involve the energy regulators of the Western Balkans and capitalise on the results of the CEI-funded project. The Balkan area not only had a significant value energy-wise, but it also had a geopolitical relevance since knowledge sharing brought countries together.

Chapter D. Description of EUSAIR-labelled project on energy networks completed during the period 2014-2023

Some projects which were contained in the original List of the EUSAIR-labelled projects have been implemented and completed. In particular, MONITA, the HVDC Power Link between Italy and Montenegro, LNG Infrastructure Development for Marine Transport in the Adriatic and Ionian Sea: POSEIDON MED II project, and TAP, the Trans-Adriatic (gas) Pipeline have been completed and became operational.

1. Undersea Power Link between Italy and Montenegro (Lead Country: Italy)

COUNTRY Italy		DATE June 2023
Project title		Undersea Power Link between Italy and Montenegro
Project description		600MW HVDC link between the Adriatic part of the Italian peninsula and Montenegro, in particular between the 380 kV Villanova station in Italy and the Lastva station on the Montenegro's primary grid. Of the 600 MW associated with the first module, a portion of 200 MW is available free of charge to private funders, in accordance with the mechanism provided for in Law 99/2009 (the so-called Interconnector). The MON.ITA project is an EU project of common interest. The interconnection consists of 2 cables (P1 and P2) extending for a length of approximately 16 km from the power station in Cepagatti to the landing point on the Pescara coast.
Project promoters		TERNA (TSO) (Italy)
Period of realisation/commissioning year		Completed in December 2019.
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	TERNA Group financing for the public part. For the part of the project falling within the interconnector perimeter, the financing was made available by Interconnector Energy Italia s.c.p.a. - a consortium that groups together the so-called energy-intensive private companies (industrial consumers mainly in the steel, paper and chemical sectors) as assignee of the transport capacity for the Italy-Montenegro interconnector.
	Financial amount to be provided and sources of financement	

Status of the project in the process of realisation	*Project documents*	Completed in 2019.
	Construction/implementation work	
	Main problems	
Other information and data		

2. LNG Infrastructure Development for Marine Transport in the Adriatic and Ionian Seas: POSEIDON MED II Project (Lead Country: Greece)

COUNTRY Greece	DATE June 2023
Project title	**LNG Infrastructure Development for Marine Transport in the Adriatic and Ionian Seas: POSEIDON MED II Project**
Project description	Posseidon Med II (PMII) is an EU co-financed program that aims at promoting the adoption of LNG (Liquefied Natural Gas) as marine fuel in the Eastern Mediterranean Sea, while making Greece an international marine bunkering and distribution hub for LNG in South Eastern Europe. Poseidon Med II is a partnership between 3 Mediterranean countries (Cyprus, Greece and Italy) which involves 6 European ports (Piraeus, Patras, Igoumenitsa, Heraklion, Limassol, Venice) and 1 LNG Terminal (Revythoussa LNG terminal). 26 top business partners have joined forces in order to promote small scale LNG services, knowldege and experience
Project promoters	- DEPA S.A. - DESFA S.A. - Hellenic Lloyd's S.A. - Ocean Finance Ltd - Environmental Protection Engineerging S.A. -NAP Engineering P.C. - Rpgam Associates S.A. - Piraeus Port Authority S.A. - Heraklion Port Authority S.A. - Patras Port Authority S.A. - Igoumenitsa Port Authority S.A. - Cyprus Ports Authority - North Adriatic Sea Port Authority - Rimorchiatori Riuniti Panfido&C. srl - Minoan Lines Shipping S.A. - Blue Star Ferries Maritime S.A. - Attica Ferries Maritime Company - Shipping Company of Crete S.A. - Neptune Lines Shipping & Managing Enterprises

		S.A. - Hellenic Seaways Maritime S.A. - Arista Shipping Co. Ltd. - Lavar Shipping S.A. - Bunkernet Ltd - Hellenic Shortsea Shipowners Association - Association of Passenger Shipping Companies - SEEN - Center for research and technology Hellas
Period of realisation/commisioning year		
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	Maximum EU contribution: 26,639,702.5 EUR Percentage of EU support: 50% (CEF)
	Financial amount to be provided and sources of financement	Estimated total cost of the action: 53,279,405 EUR
Status of the project in the process of realisation	*Project documents*	Grant Agreement between INEA (under the Connecting Europe Facility, Transport Sector) and 26 project promoters
	Construction/implementation work	Construction works of critical infrastructure concerning LNG supply chain will be the next step of PMII project. PMII phase only concerns detailed studies and permits for the necessary infrastructure. The only construction work that will be tendered (May 2018) within the time frame of PMII (but outside its scope), refers to the Revythoussa LNG Truck loading station. In this follow-up all necessary requirements for detailed studies and final assessment will be fulfilled to a great extent, whereas at a later stage a submission will take place to apply for the core construction works. All critical studies and assessments for the Revythoussa terminal and the port of Piraeus will be ready by the end of 2018.
	Main problems	Main risk is represented by the delays of the competent authorities to approve designs, studies and tender documents.
Other information and data		

3. Trans-Adriatic Gas Pipeline (TAP) (Lead Country: Italy)

COUNTRY Italy		**DATE June 2023**
Project title		**The Trans-Adriatic Gas Pipeline (TAP)**
Project description		The Trans Adriatic Pipeline is part of the Southern Gas Corridor, transporting natural gas to Europe from the Shah Deniz II field in Azerbaijan. Connecting with the Trans Anatolian Pipeline (TANAP) at the Greek-Turkish border, TAP crosses Northern Greece, Albania and the Adriatic Sea before coming ashore in Southern Italy to connect to the Italian natural gas network. The TAP runs for approximately 478 km in Greece, 204 km in Albania, 105 km offshore in the Adriatic Sea and eight kilometres in Italy. The Italian section runs for 45 km offshore as well. The initial capacity is 10 bcm/y.
Project promoters		TAP AG BP (20%), SOCAR (20%), Snam Rete Gas S.p.A. (20%), Fluxys (19%), Enagás (16%), and Axpo Trading (5%)
Period of realisation/commisioning year		
Total financial amount of the project	*Total financial amount required, amount already provided and sources of financement*	Estimated 4.5 billion EUR It was granted 14.3 mEUR of public funding. 3.765 billion EUR secured from the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and other banks.
	Financial amount to be provided and sources of financement	
Status of the project in the process of realisation	*Project documents*	

	Construction/implementation work	Commercial operations started in November 2020. On December 31, 2020, SOCAR and Trans Adriatic Pipeline AG announced that Caspian gas transported by TAP had begun flowing into Italy, Greece and Bulgaria.
	Main problems	
Other information and data		TAP is one of the European Commission's 'Projects of Common Interest' (PCI), making it eligible for public funding.