Technical information on Projects of Common Interest and Projects of Mutual Interest

accompanying the Commission Delegated Regulation C (2023) 7930 final of 28 November 2023 amending Regulation (EU) 2022/869 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure as regards the Union list of projects of common interest and projects of mutual interest

1. Priority Corridor North-South electricity interconnections in Western Europe ('NSI West Electricity')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
1.1		Portugal – Spain interconnection between Beariz – Fontefría (ES), Fontefria (ES) – Ponte de Lima (PT) and Ponte de Lima – Vila Nova de Famalicão (PT), including substations in Beariz (ES), Fontefría (ES) and Ponte de Lima (PT)	Beariz — Fontefría (ES); Fontefria (ES) — Ponte de Lima (PT)	REE - Red Eléctrica de España S.A.U. (ES) REN - Rede Eléctrica Nacional S.A. (PT)	New 400 kV AC double circuit (OHL) of about 169 km (117 km in Portugal and 52 km in Spain) between Beariz (ES) - Fontefría (ES) - Ponte de Lima (PT) – Vila Nova de Famalicão (PT), with only one circuit being installed on the Fontefría – Vila Nova de Famalicão section (on shore) 1499/1706 MVA (summer/winter). New 400 kV substations Fontefría, Beariz and Ponte de Lima. Note: Section Ponte de Lima (PT)-Vila Nova de Famalicão (PT) has been commissioned in 2021.	Permitting	31/12/2024
1.2		Interconnection between Gatica (ES) and Cubnezais (FR) [currently known as "Biscay Gulf"]	Nouvelle Aquitaine (FR) to the Basque Country (ES)	RTE - Réseau de Transport d'Electricité (FR) REE - Red Eléctrica de España S.A.U. (ES)	A new 400 kV HVDC subsea cable interconnection of approximately 394 km with a capacity of 2x1000 MW between Nouvelle Aquitaine and the Basque country, via the Biscay Gulf (offshore), with VCS converters at the end.	Under construction	31/12/2028
1.3		Interconnection between La Martyre (FR) and Great Island or Knockraha (IE) [currently known as "Celtic Interconnector"]	Brittany La Martyre substation (FR) to East Cork Knockraha substation (IE)	EirGrid plc (IE) RTE - Réseau de Transport d'Electricité (FR)	A new subsea interconnection between La Martyre (FR) and Knockraha (IE) [currently known as "Celtic Interconnector"] of approximately 581 km with a capacity of 700 MW. The interconnector will link two VSC converter stations with +/- 320 kV HVDC submarine and underground cables.	Under construction	31/03/2027

1.4		Cluster of internal lines in Germany including the following PCIs: 1.4.1 Internal line from Emden-East to Osterath to increase capacity from Northern Germany to the Rhineland [currently known as “A-Nord”]	Emden-East to Osterath (Northern Germany to Rhineland)	AMPRION GmbH (DE)	A grid expansion project [currently known as "A-North"] for low-loss transmission of high power over long distances from Northern Germany, a region characterised by a large number of regenerative onshore and offshore energy sources, to the high-production region of Rhineland. It consists of two new HVDC cables of 300 km with a transfer capacity of 2.4 GW connecting Emden-East to Osterath. Note: the project is split into different phases and first sections plan to start construction from May 2024.	Permitting	31/07/2027
		1.4.2 Internal line between Heide/West to Polsum to increase capacity from Northern Germany to the Ruhr-Area [currently known as "Korridor B"]	Heide/West to Polsum (Northern Germany to Ruhr-Area)	AMPRION GmbH (DE)	The project is part of the grid expansion project [currently known as "Korridor B"] for low-loss transmission of high power over long distances from Northern Germany, a region characterised by a large number of regenerative onshore and offshore energy sources, to the high-production region of Ruhr-Area. It consists of a new HVDC cable of approximately 440 km from Heide/West to Polsum, with a transfer capacity of 2 GW.	Planned but not yet in permitting	31/12/2032
		1.4.3 Internal line from Wilhelmshaven to Uentrop to increase capacity from Northern Germany to the Ruhr-Area [currently known as "Korridor B"]	Wilhelmshaven to Uentrop (Northern Germany to Ruhr-Area) (DE)	AMPRION GmbH (DE)	The project is part of the grid expansion project [currently known as "Korridor B"] for low-loss transmission of high power over long distances from Northern Germany, a region characterised by a large number of regenerative onshore and offshore energy sources, to the high-production region Ruhr-Area. It consists of a new HVDC cable of approximately 270 km from Wilhelmshaven to Hamm/Uentrop, with a transfer capacity of 2 GW.	Planned but not yet in permitting	31/12/2032
1.5		Internal line in Germany between Brunsbüttel/Wilster to Großgartach/Grafenrheinfeld to increase capacity at Northern and Southern borders [currently known as "Suedlink"]	Brunsbttel (DE) to Grogartach (DE); Wilster (DE) to area Bergrheinfeld-West (DE)	TenneT TSO GmbH (DE) TransnetBW GmbH (DE)	4 GW HVDC connection of approximately 700 km from Northern Germany (areas of Brunsbüttel/Wilster) to Bavaria/Baden-Württemberg (areas of Großgartach/Grafenrheinfeld). North Germany is characterised by a high amount of RES, the feed-in exceeds the local load and therefore there is a high demand for transfer to the load centres in southern parts of Germany. Note: the project is split into different phases and the first sections started construction in 2023.	Permitting	31/12/2028

1.6		Internal line between Osterath and Philippsburg (DE) to increase capacity at Western borders [currently known as "Ultranet"]	Osterath to Philippsburg (DE)	Amprion GmbH (DE) TransnetBW GmbH (DE)	The Ultranet project consists of a 2 GW HVDC-connection of approximately 340 km from the Region of Osterath (Rhineland) to the Region of Philippsburg (Baden-Württemberg). It's a pilot project with DC circuits on the same pylons as AC lines. It represents a separate subsection for the large-scale transmission link from the North Sea coast to Baden-Württemberg (with P132). Note: the project is split into different phases and the first sections started construction in 2023.	Permitting	31/12/2026
1.7		Interconnections between Spain and France: 1.7.1 Interconnection between Navarra (ES) and Landes (FR) [currently known as "Pyrenean crossing 1"]	Navarra (ES) and Landes (FR)	RTE - Réseau de Transport d'Electricité (FR) REE - Red Eléctrica de España S.A.U. (ES)	A new 225 km HVDC interconnection between France and Spain in the Western part of the Pyrenees between Pamplona area (Spain) and Cantegrit (France). The project consists of a new HVDC line of 2 GW transfer capacity, internal reinforcements in France and a new substation in the Pamplona area.	Under consideration	> 2030
		1.7.2 Interconnection between Aragón region (ES) and Marsillon (FR) [currently known as "Pyrenean crossing 2"]	Aragón (ES) to Marsillon in Atlantic Pyrenees (FR)	REE - Red Eléctrica de España S.A.U. (ES) RTE - Réseau de Transport d'Electricité (FR)	A new 145 km HVDC interconnection between France and Spain located in the central part of the Pyrenees between Aragón region (Spain) and Marsillon (France). The project consists of a new HVDC line of 2 GW transfer capacity, internal AC reinforcements and two substations in Spain.	Under consideration	> 2030
1.8		Interconnection between Lonny (FR) and Gramme (BE)	Line between Lonny (FR) and Gramme (BE)	RTE - Réseau de Transport d'Electricité (FR) Elia Transmission Belgium (BE)	The project will further reinforce the existing Lonny-Achêne-Gramme cross-border transmission line (total length approximately 100 km) with high-performance (HTLS) conductors as well as substation upgrades and installing a second phase shifting transformer (PST) in Achêne to handle the increased power flows (the construction of the first PST in Achêne planned for 2025 is outside of this project). The project aims at increasing the transfer capacity between France and Belgium by approximately 1 GW.	Planned but not yet in permitting	31/12/2030
1.9		Internal lines at the Belgian north border between Zandvliet and Lillo-Liefkenshoek	Zandvliet, Lillo-Liefkenshoek and Mercator (BE)	Elia Transmission Belgium (BE)	The project covers a new 380 kV double-circuit AC overhead line between Zandvliet (BE) and	Under construction	01/07/2027

		(BE), and between Liefkenshoek and Mercator, including a substation in Lillo (BE) [currently known as "BRABO II + III"]			Mercator (BE) of around 36 km and a new substation 380kV at Lillo. The overhead lines will have a transport capacity of 1900 MVA each. This investment has the goal to increase the hosting capacity for new load and generation in the vicinity of Antwerp whilst also reinforcing the grid allowing more cross border flows with the Netherlands. A part of the project, namely BRABO II has been commissioned since December 2020.		
1.10		Interconnection between mainland Italy - Corsica (FR) and Sardinia (IT) [currently known as "SACOI 3"]	Codrongianos (IT); Lucciana (FR); Suvereto (IT)	Electricite de France (EDF) (FR) Terna S.p.A. - Rete Elettrica Nazionale (IT)	The SACOI 3 link between mainland Italy, Corsica and Sardinia, will replace the existing SACOI 2 link close to the end of its lifetime. The project consists in a revamping of the current HVDC link (OHLs, underground cables and marine cables) for a total length of about 400 km (about 50% in Italy and 50% in Corsica), and new 200kV DC/AC converter stations in Corsica, Tuscany and Sardinia replacing the existing ones. The main link between Italy mainland and Sardinia will have a rated power of 400 MW, while the Corsican system will be allowed to withdraw 100 MW in Lucciana during normal operating conditions.	Under construction	31/12/2027
1.11		Kaunertal Storage Extension Project (AT)	Tyrol - Kaunertal (AT) Inntal - Ötztaler Alps.	TIWAG-Tiroler Wasserkraft AG (AT)	The project, referred to as the Pumped Hydro Storage Versetz, is part of the extension of the existing hydro storage power plant “Kraftwerk Kaunertal” (“Kaunertal Extension Project”). It includes adding a pumping capacity of 400 MW max (4x Francis Type), with an associated turbining capacity of 440 MW max. This provides a storage capacity of 64 GWh related to the power station Versetz with an expected net annual generation of 1060 GWh.	Permitting	10/2034
1.12		Purifying-Pumped Hydroelectric Energy Storage NAVALEO (ES)	Torre del Bierzo – Leon (ES)	CDR TREMOR S.L. (ES)	P-PHES NAVALEO is a purifying pumped hydroelectric energy storage with an installed capacity of 552 MW (3 x 184 MW) in generating mode and 548 MW in pumping mode. The project has energy storage capacity of 3.6 GWh, a cycle efficiency of up to 78% and generates an annual capacity of 1332 GWh/year. The project consists of two reservoirs with a	Permitting	31/12/2027

					volume of 2.23 million m3. The power plant is integrated in a purifying cycle of water flowing through abandoned mines that are currently being directly discharged to the rivers.		
1.13		Silvermines Pumped Hydroelectric Energy Storage (IE)	Silvermines (IE)	Siga Hydro Limited (IE)	The project will provide 1.8 GWh of storage with 360 MW generation capacity and 360 MW of pumping load. It consists of upper and lower reservoirs with capacities of approximately 2.6 million m3 and a head height of 300 m, power plant with pump/turbine units, intake/outlet structures, and transformers to connect to the grid. The project will have 3 x 120 MW synchronous motor/generators and associated turbines. The facility is located close to the transmission system on a former open-cast mining site.	Permitting	30/06/2030
1.14		Pumped Hydroelectric Energy Storage RIEDL (DE)	Municipality of Untergriesbach, district of Gottsdorf (DE)	Donaukraftwerk Jochenstein AG (DE)	The project will provide 3.5 GWh of storage with a pumping capacity of 300 MW and generating capacity of 300 MW. It will have an annual power generation capacity of 330-432 GWh, with cycle efficiency of 80%. The pumped storage plant is planned at the German-Austrian border, upstream from Jochenstein hydro power plant at the Danube. Drawdown and return of water will be ensured via Danube and a storage lake will be created approximately 350 m above the live storage of Jochenstein. The upstream water conduit is designed as an inclined shaft. The downstream water conduit joins the intake/outlet structure on the Danube underground.	Permitting	01/03/2030
1.15		Reversible Hydraulic Pumped Energy Storage LOS GUAJARES (ES)	Province of Granada	VILLAR MIR ENERGIA, S.L.U. (ES)	The project will provide 340 MW of generation capacity and 404 MW of pumping capacity, offering a storage capacity of 1.4 GWh and annual generation capacity of approximately 521 GWh. The project will be located in the Rules reservoir in Granada province. It will pump the water from this existing reservoir to a new higher reservoir, to be built, and will turbine it to generate electricity and restoring it back to the Rules reservoir. It will be equipped with 2 reversible turbine-pump hydraulic groups.	Permitting	24/06/2029

1.16		Green Hydrogen Hub Denmark Compressed Air Energy Storage (DK)	Viborg Municipality, Central Jutland Region	Corre Energy BV (DK)	The project will deploy advanced hydrogen-fuelled compressed air energy storage (CAES) technology using air storage caverns in salt deposits. It will provide a generation capacity of 320 MW and a compression capacity of 220 MW, with a storage capacity of up to 19 GWh per cycle. The project is a key component of the Green Hydrogen Hub (GHH), a project that combines hydrogen-fuelled CAES, large scale electrolysers (180 MW+) and underground hydrogen storage.	Permitting	30/09/2029
1.17		Pumped Hydroelectric Energy Storage WSK PULS (DE)	Thuringia	Vattenfall Wasserkraft PULS GmbH (DE)	PULS will be a pumped hydroelectric storage plant located in the south of Thuringia in the middle of Germany. The plant will have an operating volume of about 4.1 million m^3 and an electrical output over 400 MW. The storage plant will be able to provide 838 GWh of energy per year. The connection to a 380 kV network is right on site of the planned location.	Planned but not yet in permitting	31/12/2034
1.18		Reversible Hydraulic Pumped Energy Storage AGUAYO II (ES)	Cantabria	REPSOL GENERACIÓN SAU (ES)	The project will provide a generation capacity of 1000 MW and daily storage capacity of 6 GWh. It will be equipped with four 250 MW reversible turbine-pump hydraulic groups. It will be located in the Alsa reservoir in Cantabria. The project aims to pump the water from this existing reservoir to an existing higher reservoir named Mediajo and will turbine it to generate electricity and restoring it back to the Alsa reservoir.	Permitting	31/12/2028
1.19		Interconnection between Sicily (IT) and Tunisia node (TN) [currently known as "ELMED"]	Sicily (IT) to Cap Bon peninsula (TU)	Terna S.p.A. - Rete Elettrica Nazionale (IT) STEG - Société Tunisienne de l'Electricité et du Gaz (TN)	The project consists of a new HVDC interconnection in VSC technology between Tunisia and Italy, with a rated power of 600 MW. The link will be developed between the electrical substations of Partanna in Sicily (IT) and Mlaabi on the Cape Bon peninsula (TN), for a total length of approximately 220 km long (mainly in submarine cable) and a maximum depth of approximately 800 meters.	Permitting	06/2028
1.20		Interconnection between Zeebrugge area (BE) and Kemsley, Kent (UK) [currently known as Cronos]	Bruegel area (BE) and Kemsley, Kent (UK)	Cronos Energy Ltd (UK)	The Cronos Energy interconnector will create a direct power link between Belgium in the Bruegel area (previously Zeebrugge area) and	Planned but not yet in permitting	31/10/2032

					the United Kingdom in Kemsley, Kent. The project encompasses construction of a 202 km long 525kV HVDC cable link with a transfer capacity of 1400 MW and two VSC bipole converter stations, one in the UK and one in Belgium.		
1.21		Interconnection between Emden areas (DE) and Corringham, Essex (UK) [currently known as Tarchon]	Niederlangen areas (DE) and Ardleigh, Essex (UK)	Tarchon Energy Ltd (UK)	A new 1400 MW subsea direct current electricity interconnector of approximately 650 km between Niederlangen (previously Emden) areas in Germany and Ardleigh (previously Corringham) in the United Kingdom (UK).	Planned but not yet in permitting	31/10/2030

2. Priority Corridor North-South electricity interconnections in Central Eastern and South Eastern Europe ('NSI East Electricity')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
		Cluster Austria – Germany including the following PCIs:					
2.1		2.1.1 Interconnection between Isar/Altheim/Ottenhofen (DE) - St.Peter (AT)	St. Peter (AT) to Isar/Altheim/Ottenhofen (DE)	TenneT (DE) Austrian Power Grid AG (AT)	New 380 kV AC OHL between Isar and St. Peter, including a 110 km of new line in DE (including Pirach), new 380 kV switchgears in Altheim, Simbach, Pirach and St. Peter and one new 380/220 kV transformer in the substations Altheim and St. Peter. The Austrian part St Peter section is under construction.	Permitting	12/2027
		2.1.2 Internal line between St. Peter and Tauern (AT)	St. Peter (AT) to Tauern (AT)	Austrian Power Grid AG (AT)	Completion of the 380 kV AC line (OHL) with a length of approximately 128 km and a capacity of approximately 4.8 GW between St.Peter and Tauern (as an important part of the 380 kV Ring). The project is composed of the upgrade of the existing line between St.Peter and Salzburg from 220 kV to 380 kV operation and the construction of a new internal double circuit 380 kV line connecting Salzburg and Tauern (replacing the existing 220-kV-line on a slightly different optimized route (onshore). The construction of the two new substations Wagenham and Pongau and the integration of the existing substations Salzburg and Kaprun are planned.	Under construction	12/2025
		2.1.3 Internal line between Westtirol - Zell/Ziller (AT)	Westtirol to Zell-Ziller (AT)	Austrian Power Grid AG (AT)	This project comprises an upgrade of the existing 220 kV line Westtirol (AT) - Zell-Ziller (AT) and the construction of an additional 220/380kV transformer. The line length is of 105 km.	Planned but not yet in permitting	12/2029
		2.1.4 Interconnector between Pleinting (DE) – St.Peter (AT)	Pleinting (DE) to St. Peter (AT)	Austrian Power Grid AG (AT) TenneT (DE)	This project with a length of around 70 km consists in a new 380kV line between St. Peter (Austria) and Pleinting (Germany), which will increase the cross border transmission capacity between the two countries. The entire project is divided into two sections, section 1 “Pirach-Tann” with a length of approximately 25 km and section 2 “St.Peter (Prienbach)-Pleinting” with approximately 45 km. The corresponding substations are located in Pleinting , Simbach and Pirach.	Permitting	12/2030

2.2		Internal line in Germany between Wolmirstedt and Isar [currently known as SuedOstLink]	Wolmirstedt (DE) to Isar, Bavaria (DE)	50Hertz Transmission (DE) TenneT (DE)	A new undeground 525 kV DC cable (HVDC) of about 540 km in Germany from North-East Germany (area of Wolmirstedt), an area with high installed capacities of RES, to the South of Bavaria (area of Isar), with high consumption and connections to storage capabilities.	Permitting	31/12/2027
2.3		Cluster of internal lines in Czechia including the following PCIs: 2.3.1 Internal line between Vernerov and Vitkov (CZ)	Vernerov (CZ) to Vitkov (CZ)	ČEPS a.s. (CZ)	New 400kV double circuit OHLVernerov-Vitkov with a total length of 83 km and a total capacity of 2x500 MW between Vernerov and Vitkov (onshore). Around 70 km will be built on the existing corridor of 220 kV double-circuit between Hradec and Vítkov (V223/V224). As part of the PCI, there was the construction of two new 420 kV substations Vernéřov and Vítkov (already in operation).	Under construction	06/2024
		2.3.2 Internal line between Prestice and Kocin (CZ)	Kocin (CZ) to Prestice (CZ)	ČEPS a.s. (CZ)	Reinforcement/changing the existing 400 kV AC OHL of approximatively 117 km between 420 kV substations Kocin and Prestice from single-circuit with a capacity of approx. 1549 MW to double-circuit OHL with a total capacity of 2x1694 MW. As a prerequisite to enable the realization of the project, better utilization and optimization of the corridors with other adjacents existing 400 kV OHL(s) in the respective area, the project will have to include partial construction of the new double-circuit 400 kV OHL Chrast – Prestice and Kocin-Dasny.	Under construction	12/2028
		2.3.3 Internal line between Kocin and Mirovka (CZ)	Kocin (CZ) to Mirovka (CZ); V413 (CZ) looping to Mirovka	ČEPS a.s. (CZ)	The construction of a new OHL AC 400 kV which connects two existing 420 kV substations (Kocin and Mirovka) with double-circuit OHL of approximatively 121 km length and a total capacity of capacity of 2x1694 MW, located on the which will be located on the territory of South Bohemian and Vysočina Regions.	Permitting	10/2029
2.4		Interconnector between Würmlach (AT) -	Carinthia Region (AT) to Friuli	Alpe Adria Energia	New HVAC, 220 kV, interconnection between	Permitting	09/2029

		Somplago (IT)	Venezia Giulia Region (IT)	S.r.l. (IT)	Austria and Italy which plans to connect the existing substation of Somplago (IT) and the new substation of Würmlach (Austria). The project concerns the: - Construction of a new cross border interconnection, 51 km, underground cable. - Connection to the existing substation of Somplago. - Construction of a new 220/220 kV substation in Austria, including a Phase Shifter Transformer.		
2.5		Cluster Hungary – Romania including the following PCIs:					
		2.5.1 Interconnector between Józsa (HU) and Oradea (RO)	Józsa (HU) to Oradea (RO)	MAVIR Ltd (HU) CNTEE Transelectrica SA (RO)	This projects consists of the construction of a new single circuit 400 kV OHL between Hungary and Romania with a length of 120 km (90 km on Hungarian and 30 km on Romanian side). The expected capacity is 1384 MW between Józsa (HU) and Oradea (RO) (onshore).	Planned but not yet in permitting	12/2030
		2.5.2 Internal line between Urechesti (RO) and Targu Jiu (RO)	Urechesti to Targu Jiu (RO)	MAVIR Ltd (HU) CNTEE Transelectrica (RO)	Reconductoring of a 220 kV and a 22 km long OHL from Urechesti to Targu Jiu in Romania (replacement of wires). The expected capacity is 576 MW (onshore).	Planned but not yet in permitting	12/2028
		2.5.3 Internal line between Targu Jiu (RO) and Paroseni (RO)	Targu Jiu to Paroseni (RO)	MAVIR Ltd (HU) CNTEE Transelectrica SA (RO)	Reconductoring of a 220 kV AC and 38 km long single circuit OHL between Targu Jiu and Paroseni (RO) (replacement of wires). The expected capacity is 576 MW (onshore).	Planned but not yet in permitting	12/2028
		2.5.4 Internal line between Paroseni (RO) and Baru Mare (RO)	Paroseni to Baru Mare (RO)	CNTEE Transelectrica SA (RO) MAVIR Ltd (HU)	Reconductoring of a 220 kV AC and 20 km long single circuit OHL between Paroseni and Baru Mare (RO) (replacement of wires). The expected capacity is 576 MW (onshore).	Planned but not yet in permitting	12/2028
		2.5.5 Internal line between Baru Mare (RO) and Hasdat (RO)	Baru Mare to Hasdat (RO)	CNTEE Transelectrica SA (RO) MAVIR Ltd. (HU)	Reconductoring of a 220 kV AC and 44 km long single circuit OHL between Hasdat and Baru-Mare (RO) (replacing the wires). The expected capacity is 626 MW (onshore).	Planned but not yet in permitting	12/2028
		Cluster Israel – Cyprus – Greece currently					

		known as "EuroAsia Interconnector" including the following PCIs:					
2.6		2.6.1 Interconnection between Hadera (IL) and Kofinou (CY)	Hadera (IL) to Kofinou (CY)	Independent Power Transmission Operator (IPTO) (EL)	The project forms part of the Cluster 2.6 a multiterminal interconnector between Israel Cyprus and Greece. Its main objective is the construction and commissioning of the electricity interconnector between Israel and Cyprus. The interconnector will have a capacity of 1000 MW and +/- 500kVdc bipolar configuration, with an offshore length of approx. 310 km between Cyprus and Israel, while its onshore length will be approx. 14 km (approx. 1 km in Israel and 13 km in Cyprus). Converter stations will be of the Voltage Source Converter (VSC) and will allow for reverse transmission of electricity. The installation depth of the cable in some areas between IL and CY is expected to reach 2200 m.	Permitting	12/2029
		2.6.2 Interconnection between Kofinou (CY) and Korakia, Crete (EL)	Kofinou (CY) to Korakia (EL)	Independent Power Transmission Operator (IPTO) (EL)	The project forms part of the Cluster 2.6. Its main objective is the construction and commissioning of the electricity interconnector between Cyprus and Greece (Crete). The interconnector will have a capacity of 1000 MW and +/- 500kVdc bipolar configuration, with an offshore length of approx. 898 km between Cyprus and Greece (Crete), while its onshore length will be approx. 23 km (around 13 km in Cyprus and 10 km in Greece (Crete). Converter stations will be of the Voltage Source Converter (VSC) and will allow for reverse transmission of electricity. The installation depth of the cable in some areas between CY and EL is expected to reach 3000 m.	Under construction	12/2029
2.7		Interconnector between Otrokovice (CZ) - Ladce (SK)	Otrokovice (CZ) to Ladce (SK)	ČEPS a.s. (CZ) SEPS (SK)	A construction of a new AC 400 kV cross-border OHL single-circuit line between the 420 kV substations Otrokovice (CZ) and Ladce (SK) with a total length of 78 km and a transmission capacity 1694 MW. Taking into consideration the ongoing gradual decommissioning of the 220 kV transmission network and its replacement by 400 kV grid on both Czech and Slovak systems including the common profile, the construction of the new 400 kV interconnector is one of the measures aiming at replacing the existing 220 kV interconnectors and increasing the transmission capacity on the Czech-Slovak border.	Under consideration	12/2035
2.8		Interconnector between Lienz (AT) -	Lienz (AT) to Veneto region (IT)	Austrian Power	A reconstruction of around 140 km of the	Planned but not yet in	2035

		Veneto region (IT)		Grid (APG) (AT) Terna - Rete Elettrica Nazionale SpA (IT)	existing 220 kV AC interconnection line between Lienz (AT) and Veneto Region (IT). The project includes the adjustment of power regulation devices. The nominal power is 800 MW. The line will have a nominal power of around 800 MW and therefore will allow to increase the transfer capacity between Austria and Italy by 500 MW.	permitting	
2.9		Hydro-pumped storage in Amfilochia (EL)	Amfilochia (EL)	TERNA ENERGY S.A (EL)	The project of hydro pumped storage system in Amfilochia, is an energy storage facility that utilizes the potential energy of water to store and generate electricity. The system consists of two main components: the independent upper reservoirs of Ag. Georgios and Pyrgos respectively, while the existing Kastraki lake will serve as the lower reservoir (Owned by the Public Power Corporation). A single Powerhouse, located on the right bank of the Kastraki lake will house the electromechanical equipment. With a total installed capacity is 680 MW for production and 730 MW for pumping, the system will provide a storage capacity of 4.88 GWh and a net annual generation of 816 GWh.	Under construction	07/2026
2.10		Ptolemaida Battery Energy Storage System (EL)	Ptolemaida and Megalopoli (EL)	Prolemaida Storage SMSA (Member of Eunice Energy Group) (EL)	The PCI consists of a state-of-the-art battery energy storage system (BESS) plant with a rated power of 250 MW and storage capacity of 1000 MWh. The plant will consist of Li-ion battery groups connected to multiple DC/AC converters. The connection of the plant to the 400 kV EHV transmission network will be achieved via its own EHV substation (400/33 kV).	Permitting	01/2026
2.11		Modernisation of Pumped Hydroelectric Energy Storage in Čierny Váh (SK) [currently known as “SE Integrator”]	Čierny Váh (SK)	Slovenské Elektrárne a.s. (power utility) (SK)	The project consists of an upgrade of the existing pumped hydro energy storage Čierny Váh along with a hybridization of the pumped storage plant by adding electrochemical storage. The proposed upgrade of turbo generators will increase turbine and pump efficiency and will be coupled with a minimum of 70 MW, 105 MWh (net) battery. Following the upgrade, the maximal turbine capacity will reach 730 MW and the maximal pumping capacity will be -670 MW. The project will provide 4 GWh of storage capacity.	Under consideration	31/12/2031

2.12		Interconnector between Subotica (RS) and Sándorfalva (HU)	Subotica (RS) to Sándorfalva (HU)	MAVIR Ltd. (HU) JSC Elektromreza Srbije (EMS) (RS)	The project consists of a new 400 kV interconnection OHL between SS Subotica (RS) and SS Sándorfalva (HU). The line's length is approximatively 51 km and expected capacity of 1330 MW. This is the main investment of the project and a part of the new North-South corridor for electricity transmission.	Planned but not yet in permitting	2030
2.13		Interconnection between Wadi El Natroon (EG) and Mesogeia/St Stefanos (EL) [currently known as "GREGY Interconnector"]	Wadi El Natroon (EG) to Mesogeia/St Stefanos (EL)	Elica Interconnector Single Member S.A. (EL)	This project is a HVDC interconnection between Egypt and Greece consisting of a HVDC submarine cables (±525 kV) and supplementary infrastructure required for the operation of the link. The route of GREGY is a direct link from Wadi-El-Natroon (Egypt) to Attica area (Greece) with a length of about 954 km.	Under consideration	01/2030

3. Priority Corridor Baltic Energy Market Interconnection Plan in electricity ('BEMIP Electricity')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
3.1		Internal line between Stanisławów and Ostrołęka (PL)	Stanisławów to Ostrołęka (PL)	PSE S.A. (PL)	Construction of new 400 kV AC double-circuit OHL line with a length of 108 km and capacity of 2x1870 MVA between Ostrołęka and Stanisławów.	Commissioned	06/12/2023
3.2		Hydro-pumped electricity storage in Estonia	Paldiski (EE)	Energiasalv Pakri OÜ (EE)	Estonian Hydro-pumped storage of 500 MW and storage capacity of 6 GWh in Paldiski.	Permitting	31/12/2030
3.3		Integration and synchronisation of the Baltic States' electricity system with the European networks including the following PCIs: 3.3.1 Interconnection between Tsirguliina (EE) and Valmiera (LV)	Tsirguliina (EE) to Valmiera (LV)	Elering AS (EE) Augstsprieguma tikls AS (LV)	Reinforcement of existing 330 kV OHL between Tsirguliina (EE) and Valmiera (LV) with a length of 62 km (49 km in LV and 13 km in EE) and a planned capacity of 1000 MVA. The main target for existing transmission line reconstruction in Latvia and Estonia is to increase the transmission capacity between Estonia and Latvia which is essential during synchronisation mode to ensure maximum possible flexibility and power flows exchange on Estonian-Latvian cross-border. The line provides direct effect for system stability in case of high North-South flows and in case of several contingencies in Baltic States during synchronous operation with continental Europe.	Under construction	31/12/2024
		3.3.2 Internal line between Viru and Tsirguliina (EE)	Viru (EE) and Tsirguliina (EE)	Elering AS (EE)	Reinforcement of existing 330 kV OHL between Eesti and Tsirguliina (EE) with a planned capacity of 1143 MVA (243 km).	Under construction	01/03/2025
		3.3.3 Internal line between Paide and Sindi (EE)	Paide and Sindi (EE)	Elering AS (EE)	Reinforcement of existing Paide-Sindi 330 kV OHL between Paide, Sopi and Sindi 330 kV substations with total lenght of 95 km and planned capacity of 1770 MVA.	Under consideration	31/12/2035
		3.3.4 Internal line between Vilnius and Neris (LT)	Vilnius to Neris (LT)	LITGRID AB (LT)	New single circuit 330 kV OHL (943 MVA, 80 km length).	Under construction	02/11/2025
		3.3.5 Further infrastructure aspects related to the implementation of the synchronisation of the Baltic States system with the continental European network	Estonia (EE); Latvia (LV); Lithuania(LT)	Augstsprieguma tikls AS (LV) Elering AS (EE) LITGRID AB (LT)	This generic project shall implement the first phase of improvements in system control and stability required for synchronous operation with Continental Europe:- development of Baltic AGC and frequency stability assessment systems with special protection schemes,-upgrades of SCADAs and other IT systems and their	Under construction	31/10/2027

					environment needed for real time operation and planning,- upgrades to HVDC connectors EstLink 1, EstLink 2 and Nordbalt, etc,- construction of three synchronous condensers in Püssi (Estonia), Ventspils (Latvia) and Alytus (Lithuania),- Battery Energy Storage System for Latvian power system.		
		3.3.6 Interconnection between Lithuania and Poland [currently known as Harmony Link]	Darbėnai (LT) to Żarnowiec (PL) or Gižai (LT) to Ełk (PL)/Ostrołęka (PL)	LITGRID AB (LT) PSE S.A. (PL)	The new interconnection between Lithuania and Poland is known as Harmony Link. The project consists of three main parts: - Construction/extension of substations in Poland. - Construction/extension of substations in Lithuania. - Links between substations. The construction of Harmony Link should bring approx. 700MW capacities to be offered to market participants. Currently there are two technical solutions being considered: offshore HVDC (Darbėnai (LT) to Żarnowiec (PL)) and onshore 220 kV AC (Gižai (LT) to Elk (PL)/Ostrołęka (PL)).The Final decision regarding the technical solution will be reached after extensive studies by the end of 2024 taking into account time and cost of implementation.	Permitting	30/06/2033
		3.3.7 New 330kV Mūša substation (LT)	Joniškis district (LT)	LITGRID AB (LT)	New 330 kV Mūša substation (LT).	Under construction	31/12/2025
		Internal line between Bitenai and KHAE (LT)	Bitenai to Kruonis (Kruonis Pumped Storage Plant) (LT)	LITGRID AB (LT)	New 330 kV OHL Kruonio HAE. The project consists of three parts: - Reconstruction of 330 kV Jurbarkas-Bitenai line, by adding a second circuit. - Construction of a new bypass line between Jurbarkas and existing 330 kV line Kruonio HAE – Sovetsk. - Upgrade of 330 kV Bitenai substation to facilitate connection of the additional circuit.	Under construction	31/10/2025
		3.3.9 New 330 kV Darbenai substation (LT)	Darbėnai (LT)	LITGRID AB (LT)	New 330 kV Darbenai substation (LT).	Under construction	12/12/2025
		3.3.10 Internal line between Darbnai and Bitenai (LT)	Darbėnai to Bitėnai (LT)	LITGRID AB (LT)	New 330 kV OHL Darbėnai-Bitėnai in Lithuania. The project consists of two phases: - Reconstruction of existing 330 kV line Klaipeda-Grobina by adding a second circuit. - Construction of 330 kV OHL Darbenai-	Under construction	01/05/2025

					Bitenai, including a bypass around the city of Klaipda.		
		3.3.11 Internal line between Dunowo and Żydowo Kierzkowo (PL)	Dunowo and Żydowo Kierzkowo(PL)	PSE S.A. (PL)	The Dunowo-Żydowo Kierzkowo 400 kV line is interrelated with the project aiming to build the Piła Krzewina-Żydowo Kierzkowo line. The Dunowo-Żydowo Kierzkowo 400 kV project includes: - The reconstruction of Dunowo electrical station with installation of 400/110 kV. transformers. - The construction of new double-circuit 400 kV line. - The lines Dunowo-Żydowo Kierzkowo 400 kV and Piła Krzewina-Żydowo Kierzkowo 400 kV will be connected to each other.	Permitting	31/12/2026
		3.3.12 Internal line between Pia Krzewina and Zydowo Kierzkowo (PL)	Pia Krzewina and ydowo Kierzkowo (PL)	PSE S.A. (PL)	The Pia Krzewina-Zydowo Kierzkowo 400 kV line is interrelated with the project aiming to build the Dunowo-Zydowo Kierzkowo line. The Pia Krzewina-Zydowo Kierzkowo 400 kV project includes: - The reconstruction and modernization of Pia Krzewina electrical station with installation of 400/110 kV transformers and reactive power compensation devices. - The construction of new double-circuit 400 kV line. - The lines Pia Krzewina-Zydowo Kierzkowo 400 kV and Dunowo-Zydowo Kierzkowo 400 kV will be connected to each other.	Permitting	31/03/2026
		3.3.13 Internal line between Morzyczyn-Dunowo-Supsk-Zarnowiec (PL)	Morzyczyn-Dunowo-Supsk-arnowiec (PL)	PSE S.A. (PL)	The modernisation of the Morzyczyn-Dunowo-Supsk-Zarnowiec 400 kV line represents the longest section of modernization of North Line. This project consists of: - The modernization of Morzyczyn-Dunowo 400 kV (commissioned). - The modernization of Dunowo-Supsk 400 kV. - The modernization of Supsk-Zarnowiec 400 kV. - The modernization of Dunowo substation.	Under construction	31/05/2026
		3.3.14 Internal line between Żarnowiec-	Żarnowiec-Gdańsk/Gdańsk	PSE S.A. (PL)	The Żarnowiec-Gdańsk/Gdańsk Przyjaźń-Gdańsk	Under construction	31/08/2026

		Gdańsk/Gdańsk Przyjaźń-Gdańsk Błonia (PL)	Przyjaźń-Gdańsk Błonia (PL)		Błonia 400 kV line consists of the last section of the modernization of the North Line.		
		3.3.15 Synchronous condensers providing inertia, voltage stability, frequency stability and short-circuit power in Lithuania, Latvia and Estonia	Located in 330 kV substations in Lithuania (Neris and Telsiai), Latvia (Grobina and Liksna), Estonia (Kiisa and Viru)	Augstsprieguma tikls AS (LV) Elering AS (EE) LITGRID AB (LT)	Synchronous condensers providing inertia, voltage stability, frequency stability and short-circuit power.	Under construction	31/12/2025
3.4		Third interconnection between Finland – Sweden [currently known as "Aurora line"] including the following PCIs:					
		3.4.1 Interconnection between northern Finland and northern Sweden	Messsaure (SE) to Keminmaa (Viitajärvi)(FI)	Fingrid (FI) Svenska Kraftnät (SE)	A new 400 kV AC electricity overhead line interconnection between Sweden and Finland, connecting the substations Messaure (Sweden) and Pyhänselkä (Finland). The transmission line will cross the border river Tornio from Risudden in Sweden to Vuennonkoski in Finland. It includes an internal 400 kV overhead line in North Finland. In addition to the transmission lines, the project includes two new substations, Viitajärvi substation and Isomaa series compensation station both in Finland and extensions to three existing substations, Messaure substation and Isovaara series compensation station both in Sweden as well as Pyhänselkä substation in Finland. The total length of the line is 380 km, of which 180 km in Sweden and 200 km in Finland. The Aurora Line will increase the transmission capacity from Sweden to Finland by 800 MW and from Finland to Sweden by 900 MW.	Under construction	31/12/2025
		3.4.2 Internal line between Keminmaa and Pyhänselkä (FI)	Keminmaa (Viitajärvi) (FI) to Pyhänselkä (FI)	Fingrid (FI)	A part of the new 400 kV AC electricity overhead line interconnection between Sweden and Finland, connecting the substations Messaure (Sweden) and Pyhänselkä (Finland). It includes an internal 400 kV overhead line in North Finland. In addition to the transmission lines, the project includes two new substations, Viitajärvi substation and Isomaa series compensation station both in Finland and extensions to three existing substations, as well as Pyhänselkä substation in Finland. The total length of the line is 200 km in Finland. The Aurora Line will increase the transmission capacity from Sweden to Finland by 800 MW and from Finland to Sweden by 900 MW.	Under construction	31/12/2024
3.5		Fourth interconnection between Finland –	Northern Sweden (SE) to	Fingrid (FI)	A 400 kV AC overhead line interconnection of	Under consideration	31/12/2032

		Sweden [currently known as "Aurora line 2"]	Northern Finland (FI)	Svenska kraftnät (SE)	approximately 250+ km between Northern Sweden and Northern Finland. The exact location of the line, as well as the connecting substations will be decided based on the currently ongoing detailed grid and market studies. The other technical specifications will also be settled after these studies. The capacity of the Aurora Line 2 is estimated to be 800 MW, if constructed as a single circuit line. With double circuit technology the capacity can be up to 1600 MW.		
3.6		Interconnection between Finland and Estonia [currently known as "Estlink 3"]	Hikia(FI) to Inkoo (FI) to Aulepa (EE) to Risti (EE)	Elering AS (EE) Fingrid (FI)	Estlink 3 consists of three main parts: - New HVDC subsea cable interconnector between Finland and Estonia (450 kV DC 700 MW 120 km) together with converter stations (VCS type converter). - New OHLs in Finland (400 kV 100 km) and Estonia (330 kV 100 km). - Grid reinforcements in Estonia (292,8 km km of 330kV OHL) and Finland (TBD). Total lenght of connection 612,8 km (120 km DC cable with VCS type converters; 200 km new AC OHL; 292,8 km reconstructed AC OHL) additional cross-border capacity 700MW.	Under consideration	31/12/2035

4. Priority Corridor Northern Seas offshore grids ('NSOG')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
4.1		One or more hubs in the North Sea with interconnectors to bordering North Sea countries (Denmark, the Netherlands and Germany) [currently known as "North Sea Wind Power Hub"]	DK-DE-NL	Gasunie (NL) TenneT (NL) TenneT (DE) Energinet (DK)	A large scale European electricity system for offshore wind is proposed to be developed in the North Sea. It includes the construction of one or more hubs at a suitable location in the North Sea with interconnectors to bordering North Sea countries. The whole system may function as a hub for transport of wind energy, an interconnection hub to the connected countries, a working hub for offshore wind developers and a location for possible power-to-gas solutions. This project is a first building block in the North Sea Wind Power Hub (NSWPH) connecting up to 14GW future offshore wind parks to the systems of Denmark, the Netherlands and Germany around 2035. An integral part of the NSWPH is to assess the perspectives of coupling large-scale wind power production with the gas system through power-to-gas (PtG) technology. The total length is 2258 km.	Under consideration	2035
4.2		Offshore hybrid interconnector between Belgium and Denmark [currently known as "Triton Link"]	North Sea - BE-DK	Elia Energinet	The construction of a dual-purpose offshore hybrid HVDC interconnector between Belgium and Denmark integrating 4 GW of offshore wind in the Danish Exclusive Economic Zone in the North Sea. This project creates a first transmission link between the Danish and Belgian electricity transmission systems. It is an offshore hybrid project as it merges two purposes: i) interconnecting two countries and ii) integrating offshore RES. The exact integration of the hybrid HVDC interconnector to offshore & onshore grid connection nodes in Belgium & Denmark have been defined: harbour of Ghent in Belgium and Revsing in Denmark. The project consists of two elements: 1) Connection between Belgium and the Danish Energy Island (2 GW, 773 km), 2) Connection between Denmark and the Danish Energy Island (2 GW, 214 km).	Under consideration	2032
4.3		High voltage offshore substation and connection to Menuel (FR) [currently known as "Offshore Wind connection Centre Manche 1"]	Centre Manche 1 - Menuel	RTE	The offshore Wind connection Centre Manche 1 will consist in a 320 kV HVDC hub in Normandy, connecting a 1,05 GW offshore wind project ("Centre Manche 1") and 200 MW from a second offshore wind project ("Centre Manche	Under consideration	03/2031

					2") to the onshore 400 kV substation of Menuel. The project will consist of a HVDC offshore platform with converter station, an onshore converter station and HVDC onshore & offshore cables. The total cable route length will be of 100 km (offshore + onshore). This project will be related to the Offshore wind Connection Centre Manche 2 project: an AC interlink may be developed between the two offshore substations of Centre Manche 1 and Centre Manche 2.		
4.4		High voltage offshore substation and connection to Tourbe (FR) [currently known as "Offshore Wind connection Centre Manche 2"]	Centre Manche 2 - Tourbe	RTE	The offshore Wind connection Centre Manche 2 will consist in a 320 kV HVDC hub in Normandy and will include an HVDC offshore platform with converter station, an onshore converter station, and HVDC onshore & offshore cables. This hub will connect 1,25 GW of the offshore wind project (Centre Manche 2) to the onshore 400 kV substation Tourbe. The total route length will be of 110km from the substation Centre Manche 2 to the onshore substation Tourbe. This project will be related to the Offshore wind Connection Centre Manche 1 project: an AC interlink may be developped between the two offshore substations of Centre Manche 1 and Centre Manche 2.	Under consideration	09/2031
4.5		Multi-purpose interconnector between Modular Offshore Grid 2 (BE) and Leiston (UK) [currently known as "Nautilus"]	Modular Offshore Grid 2 (BE) and Leiston (UK)	National Grid Interconnector Holdings Limited (UK) Elia Transmission Belgium (BE)	This project consists of a multi-purpose 1-2 GW HVDC interconnector between UK and Belgium. The timing as well as location, routing, capacity are subject to further studies.	Planned but not yet in permitting	12/2030
4.6		Multi-purpose HVDC interconnection between Great Britain and the Netherlands [currently known as "LionLink"]	NL and UK	National Grid (UK) TenneT (NL)	A 2 GW grid connection system with connected windfarms and an 1,4 – 1,8 GW (bipole with DMR system arrangement) interconnector through a 525 kV DC cable between the Netherlands and the UK. The precise route is not yet defined and is under consideration.	Under consideration	12/2030

5. Priority Corridor Baltic Energy Market Interconnection Plan offshore grids ('BEMIP offshore')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
5.1		Latvia and Estonia Hybrid Offshore interconnector [currently known as "Elwind"]	Tume (LV) to Sindi (EE)	Augstsprieguma tikls AS (LV) Elering AS (EE)	The ELWIND PCI consists of a hybrid interconnector project in the Baltic Sea with planned offshore generation production capacity from 1000 MW to 2000 MW. Studies are ongoing to determine the exact location and number of the offshore substations to be built.	Under consideration	31/12/2035
5.2		Bornholm Energy Island (BEI) Hybrid Offshore interconnector between Denmark and Germany	Zealand, Bornholm island (DK), and Stilow (DE)	Energinet (DK) 50HERTZ (DE)	The project aims at building a hybrid interconnector and to integrate 3 GW of offshore windfarm capacity in the Exclusive Economic Zone of Denmark (with a possibility to install an additional capacity of 800 MW). Electricity generated by the wind farms will be converted into high-voltage direct current (HVDC) and transported via 525 kV HVDC sea and land cable systems to onshore substations. The plan is to establish a multi-terminal DC solution with the foundations to be developed into a multi-vendor DC solution (MTDC) on the island of Bornholm, which would be a technical novelty for the European transmission grid. Moreover, it is planned to establish a true energy hub, with the possibility for future extensions including the connections of further interconnectors to other countries or possibly the integration of additional generation or load, including but not limited to Power-to-X facilities.	Under consideration	31/12/2030

6. Priority Corridor South and West offshore grids ('SW offshore')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
6.1		Offshore Wind Connection Occitanie (FR)	Gulf of Lion (France)	RTE (FR)	The offshore Wind connection Occitanie will consist of 750 MW offshore wind connection hub, connecting two different floating windfarms. More precisely, the project will be composed of an HVAC 225 kV offshore connection. The total route length is expected to be around 60 km from the offshore substation Occitanie to the onshore substation.	Under consideration	12/2030
6.2		Offshore Wind Connection PACA (FR)	Gulf of Lion, PACA	RTE (FR)	The offshore Wind connection PACA will consist of a 225kV HVAC link connecting up to 750 MW floating offshore wind to the onshore grid. The total cable route length will be approximately 55 km.	Under consideration	06/2031

8. Priority Corridor Atlantic offshore grids ('Atlantic offshore grids')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
8.1		Offshore Wind Connection South Britanny (FR)	South Britanny	RTE (FR)	The offshore Wind connection South Britanny will consist of a 225 kV HVAC link connecting up to 750 MW floating offshore wind to the onshore substation Pluvigner (225kV) in the Brittany Region with a cable total route length of ca. 80 km (offshore + onshore).	Under consideration	12/2029
8.2		Offshore Wind Connection South Atlantic (FR)	South Atlantic	RTE (FR)	The offshore Wind connection South Atlantic will consist of a 320kV HVDC link connecting up to 1,2GW of offshore wind farm to the onshore substation Granzay (400kV). The project includes 2 substations (offshore and inland) each comprising a converter HVDC/HVAC and a total cable route length of ca. 140 km (offshore + onshore).	Under consideration	12/2032

9. Priority Corridor Hydrogen interconnections in Western Europe ('HI West')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
		Corridor Portugal – Spain – France – Germany (hydrogen) including the following PCIs:					
9.1		9.1.1 Internal hydrogen infrastructure in Portugal	Portugal	REN - Gasodutos, S.A. (PT)	The Portuguese Hydrogen Backbone consists of a hydrogen internal green corridor comprising a new H2 pipeline between Figueira da Foz and Cantanhede and the repurposing of the existing axis Cantanhede – Celorico da Beira – Monforte, allowing the connection of Green H2 Valley at Figueira da Foz and green H2 producers along the HI West corridor. The project consists of: - Repurposed Cantanhede – Mangualde pipeline section of approx. 76 km. - Repurposed Celorico da Beira – Monforte pipeline section of approx. 217 km. - New Figueira da Foz – Cantanhede pipeline section of approx. 50 km. - Repurposed Mangualde – Celorico da Beira Cantanhede pipeline section of approx. 48 km. The Portuguese backbone is an enabler of the H2Med/CelZa project and corresponds to the first phase of the development of a wider H2 National Backbone, ensuring up to 0.75 Mt/y H2 (81 GWh/day) capacity between Portugal and Spain.	Under consideration	12/2029
		9.1.2 Hydrogen interconnector Portugal – Spain	Portugal, Spain	REN - Gasodutos, S.A. (PT) Enagas Transporte S.A.U (ES)	H2Med/CelZa is part of H2Med project. The project consists in developing an interconnection between Celorico da Beira (PT) and Zamora (ES). Its objectives cover transportation of renewable hydrogen (approx. 0.75 Mt/y) from Portugal to Spain by 2030. The infrastructure consists of a pipeline with a length of ca. 162 km in the Portuguese section and 86 km in Spain with a diameter of 28" and a compressor station of 24.6 MW in Zamora. The project H2Med/CelZa together with H2Med/BarMar interconnection project will enable the emergence of one of the major hydrogen corridors via the Mediterranean identified in the REPower EU.	Planned but not yet in permitting	2030

					The expected transmission capacity is 0.75 Mt/y.		
		9.1.3 Internal hydrogen infrastructure in Spain	Spain	Enagás Infraestructuras de Hidrógeno (ES)	The Spanish hydrogen backbone includes two main axes of pipelines of a total approximate length of 2,600 km: - Axis 1: Gijon - Santander - Bilbao - Guipúzcoa – Haro – Zaragoza– Tivissa – Tarragona - Barcelona; Tivissa - Montesa, Montesa - Cartagena of approximately 1,500 km. - Axis 2: Gijon (Musel) – Zamora – Almendralejo - Huelva; Almendralejo - Puertollano, of approximately. 1,050 km. Besides, the Spanish Hydrogen Backbone will include the compression stations to ensure the proper flow of hydrogen through the network, as well as different types of valve positions (regulation and metering stations). It is expected that national hydrogen transmission capacity will reach approx. 325 GWh/day or 3 Mt/y (Axis 1) and 101 GWh/day or 0.9 Mt/y (Axis 2).	Under consideration	31/12/2029
		9.1.4 Hydrogen interconnector Spain France [currently known as BarMar]	Spain, France	Enags Infraestructuras de Hidrgeno (ES) OGE (DE) Terega SA (FR) GRTgaz SA (FR)	The Hydrogen Interconnector Spain – France [currently known as BarMar] aims at interconnecting future hydrogen infrastructure between Spain and France through an offshore hydrogen pipeline. The project concerns the following infrastructure: - New compressor station in Barcelona with capacity of 144 MW. - New offshore interconnector Barcelona-Marseille consisting of approximately 455 km pipeline with a 700-1050 mm diameter. The project will enable the transport of 2 Mt/y of hydrogen and contributes to the emergence of one of the major hydrogen import corridors via the Mediterranean Sea identified in the REPowerEU plan.	Under consideration	31/12/2029
		9.1.5 Internal hydrogen infrastructure in France connecting to Germany [currently known as HyFen]	France	GRTgaz (FR)	The internal hydrogen infrastructure in France (currently known as HYFEN project) aims to develop a French hydrogen transmission network via pipeline, connected to Germany (currently known as H2ercules) and national storage sites. A connection via BarMar will further allow to ensure the interconnection with the Iberian peninsula.	Under consideration	2029

					Being part of the European South-North corridor, HYFEN project will link significant hydrogen potential from renewable electricity (solar and wind power) produced in Iberia (ES and PT) and France to future industrial consumption areas in North-Western Europe. The 1000 km pipeline network, starting at Fos-sur-Mer, will be partially (approx. 327 km from Etrez to Voisines and from Cerville to Obergailbach) based on repurposed natural gas assets. The rest of HYFEN network (673 km) is designed with new pipes. HYFEN project will ensure maximum transmission capacity of hydrogen at 2 Mt/y from France to Germany.		
		9.1.6 Internal hydrogen infrastructure in Germany connecting to France [currently known as H2Hercules South]	Germany	Open Grid Europe GmbH (DE)	The H2ercules South project will enable pure hydrogen imports from various regions of hydrogen production: Iberian Peninsula via France to Medelsheim, Germany as well as Baltic Sea, Eastern Europe and North Africa via Czech Republic to Waidhaus, Germany. This project connect the demand centers in Bavaria, such as Ingolstadt or Nuremberg, which are characterized by a lot of industry (Steel industry, refineries, chemical parks and others) and thus offer numerous decarbonization opportunities for the use of hydrogen. The infrastructure concerns sections: I – MEGAL of approx. 458 km of repurposed pipelines and II connection Ingolstadt of approx. 103 km of repurposed pipelines. The aimed transmission capacity from France to Germany and reverse is estimated at 192 GWh/day (1.8 Mt/y).	Under consideration	12/2029
9.2		France – Germany cross-border hydrogen valleys including the following PCIs: 9.2.1 Hydrogen valley in Germany to the French border [currently known as RHYn]	Germany, France	GRTgaz (FR) Terranets bw GmbH (DE)	The project group of RHYn in France and RHYn Interco in Germany aim at interconnecting future hydrogen infrastructure, producers and consumers between France and Germany by mainly	Planned but not yet in permitting	12/2029

					repurposing methane infrastructure. In France, RHYn project concerns phased development of infrastructure: - Fessenheim – Ottmarsheim- repurposed pipeline with a new connection to Mulhouse of approx. 38 km. - Basel airport connection new or repurposed pipeline section of approx. 25 km. - Fessenhem – Marckolsheim repurposed pipeline section of approx. 38 km. - Fessenheim (FR) – Tunsel (DE) new pipeline section of approx. 5 km. - In Germany, RHYn Interco project covers: - Rhine crossing to Tunsel new pipeline section of approx. 15 km. - Tunsel to Freiburg im Breisgau repurposed pipeline section of approx. 20 km. - Freiburg area repurposed pipeline section of approx. 10 km. The expected total length of the project will be in the range of 150 km and aimed incremental transmission capacity to and from Germany at 12 GWh/day representing 0.1 Mt/y of hydrogen.		
	9.2.2 Hydrogen valley in France to the German border [currently known as Mosahyc]	France, Germany	GRTgaz (FR) Creos Deutschland Wasserstoff GmbH (DE)	Moselle-saar hydrogen-conversion (MosaHYc) is a cross-border hydrogen project between France and Germany linking producers of low carbon or renewable hydrogen with industrial (steel) and mobility consumers across the Mosel-Saarland region. The project aims to develop a 94 km (42 km on German side and 52 km on French side) cross-border 100% hydrogen infrastructure composed of new & repurposed pipelines as follows: - New 19 km (16 km on the German side and 3 km on the French side) from Bouzonville (FR) to Dillingen (DE). - Repurposed 53 km (7 km on the German side and 46 km on the French side) from Carling (FR) to Perl (DE). - Repurposed 2 km from Völklingen (DE) to Fürstenhausen (DE). - Repurposed 20 km (17 km on the German side and 3 km on the French side) from Carling (FR) to Fürstenhausen (DE). The project will deliver up to 5.5 GWh/d (0.05 Mt/y) of cross-border capacity when starting and up to 15 GWh/d (0.2 Mt/y) are planned for 2030.	Permitting	09/2027

9.3		Internal hydrogen infrastructure in France to the Belgium border [currently known as Franco-Belgian H2 corridor]	France	GRTgaz (FR)	The Franco-Belgian H2 corridor aims to develop a 465 km cross-border network allowing import from the Dunkirk port and hydrogen flows to the Parisian and the Grand-Est regions in France and to Belgium. The project is part of a three-part program: - Development of a 50 km network in the Port of Dunkirk, connecting it with Channel ports in Belgium via Alveringem, French-Belgian border. - New 40 km from Valenciennes (FR) to Marchipont (BE), French-Belgian border. - Repurposed pipeline 200 km from Taisnières (French-Belgian border) to Paris and repurposed pipeline 265 km from Taisnières (French-Belgian border) to Nancy. Across the whole Franco-Belgian H2 corridor, an average transport volume of 1 Mt/y (45.3 TWh/year) of renewable and low carbon hydrogen is expected. The hydrogen will be used in particularly hard-to-abate sectors, including steel production, high-value chemicals production, and mobility applications.	Under consideration	2034
9.4		Internal hydrogen infrastructure in Germany [currently known as H2ercules West]	Germany	Open Grid Europe GmbH (DE)	Cross-border and national infrastructure project connecting the Belgium hydrogen backbone with demand centers in Western and Southwestern Germany. The project aims to develop a 500 km dedicated hydrogen infrastructure composed of new and repurposed onshore pipelines. Importing into Germany (from Belgium towards Cologne area): New 110 km from Eynatten (border crossing Belgium-Germany) to Porz. Transport within Germany (from West to North and to the South): - Repurposed 320 km pipelines from Porz to Werne and from Porz to Lampertheim. - New 70 km from Lampertheim to Karlsruhe. The estimated capacity for the whole project is approx. 0.844 Mt/y.	Under consideration	12/2029

					This route allows imports to be transported through Belgium via the Belgian ports and terminals to Germany. Thus, there is a connection of the consumption center Rhenish Mining Area and the chemical industry in Cologne. In a second step, it will be possible to connect the Ruhr region and the demand center Frankfurt/Ludwigshafen as well as Karlsruhe further south with hydrogen by 2030 when further new built and repurposed pipelines are completed. The Rhenish Mining area, the chemical industry in Cologne and the Ruhr area in western Germany and the demand center Frankfurt/ Ludwigshafen are characterized by a lot of industry and thus offer numerous decarbonization opportunities for the use of hydrogen.		
9.5		Internal hydrogen infrastructure in Belgium [currently known as Belgian Hydrogen Backbone]	Belgium	Fluxys Belgium (BE)	The Belgian Hydrogen Backbone has an ambition to link hydrogen import facilities (terminals located in Antwerp, Zeebrugge and Dunkirk) and local hydrogen production in Belgium with the industrial clusters through an interconnected hydrogen backbone. The Belgian Hydrogen Backbone consists of the following key parts: - Interconnection BE- NL, connecting ports of Ghent and Antwerp towards NL of approx. 100 km new pipelines. - Interconnection BE – DE, section Antwerp - Eynatten of approx. 220 km of new pipelines and section Maldegem-Desteldonk of approx. 35 km of repurposed pipelines. - Import Zeebrugge – BE, section Zeebrugge – Maldegem of approx. 25 km repurposed pipeline. - Import Dunkirk – BE, section Alveringem – Maldegem of approx. 80 km new or repurposed pipelines. - Interconnection BE – FR, section Mons – Valenciennes Cluster of approx. 55 km new pipelines. - Interconnection BE – FR, section Mons - Zomergem of approx. 115 km of new pipelines. The project will be executed in different phases. During the first phase (expected to be	Permitting	31/12/2029

					commissioned for mid-2026), focus will be on developing the H2 backbone in some domestic industrial clusters including cross border connection to the Netherlands (for a cross-border capacity of 0,33 MT/y). Subsequent phase(s) will follow immediately based on further commercial interactions and alignment with adjacent TSOs entailing the connection of the H2 backbone respectively to (i) the port of Antwerp-Bruges to the German border (phase 2 representing a cross-border capacity of 0.85 Mt/y) and (ii) French border including connection to Zeebrugge (phase 3representing a cross-border capacity of progressively 0.22 Mt/y (Mons), 0.33 Mt/y (Blaregnies), 0.44 Mt/y (Alveringem), and 0.44 Mt/y (Zeebrugge).		
9.6		Internal hydrogen infrastructure in the Netherlands [currently known as Netherlands National Hydrogen Backbone]	Netherlands	N.V. NEDERLANDSE GASUNIE (NE)	The H2 Backbone of the Netherlands is the national hydrogen network that will connect supply and demand with the future hydrogen storage facility in the northern Netherlands, with import and with other cross-border networks for hydrogen transportation. The development of the hydrogen network is taking place step by step, starting with the Dutch industrial regions (Eemshaven, North Sea Canal area, Rotterdam, Zeeland). The network will be based on the current natural gas network , part of which will become available for the transmission of hydrogen. The network will cover approximately 642 km ofconverted natural gas and newly built H2 pipelines. The project covers the following sections: - 37.1 km from Eemshaven, port area, to Scheemda, - 21.2 km from Scheemda to Oude Statenzijl (Dutch-German border), - 67.8 km from Scheemda to Elim, - 20.8 km from Elim to Vlieghuis (Dutch-German border), - 92.9 km from Elim to Angerlo, - 8.9 km from Angerlo to Zevenaar (Dutch-German border), - 42.5 km from Angerlo to Ravenstein, - 102.4 km from Ravenstein to Moerdijk, - 82.5 km from Moerdijk to Zeeland, port area, - 54.3 km from Moerdijk to Rotterdam, port area, - 111.2 km from Rotterdam to Amsterdam, port area.	Planned but not yet in permitting	31/12/2027

					Once complete, the Dutch H2 Backbone will connect onshore,offshore H2 production sites as well as imported H2 with consumers in the Netherlands, Germany and Belgium. The network will have a capacity of around 4 GW in 2030.		
9.7		Hydrogen interconnectors National Hydrogen Backbone (NL) – Germany including the following PCIs: 9.7.1 Hydrogen interconnector from the North-South backbone in East to Oude (NL) - H2ercules North (DE)	Germany	N.V. Nederlandse Gasunie (NE) Open Grid Europe GmbH (DE)	The project is aiming to establish cross border hydrogen transport capacity between Germany and the Netherlands. The network National H2 Backbone (HNS) - H2ercules Network (OGE) can establish a connection to five European countries (Norway, Netherlands, Belgium, France and Czech Republic) via pipeline. The project concerns the hydrogen transport through the cross-border point Oude Statenzijl. It covers the following infrastructure in Germany: - Wilhelmshaven/Dornum – Wettringen (H2ercules Network North)- new gas pipeline of approx. 240 km. - Wettringen – Werne (H2ercules Network North) - repurposed gas pipeline of approx. 74 km. - Hamm/Werne – Krefeld (H2ercules Network North) new gas pipeline of approx. 120 km. The project aims to realise 52.8 GWh/d (0.5 Mt/y) of green hydrogen transmission capacity from the Netherlands to Germany.	Under consideration	12/2029
		9.7.2 Hydrogen interconnector from the North-South backbone in East to Vlieghuis (NL) – Vlieghuis – Ochtrup (DE)	Germany	Thyssengas GmbH (DE)	The Vlieghuis-Ochtrup project enables the first border crossing point between the Netherlands and Germany. The project also connects a hydrogen electrolysis and the planned hydrogen storage in Gronau-Epe of RWE via the GETH2 system in Ochtrup. The project consists of about 50.2 km repurposed natural gas pipelines (12.2 km DN400, 38 km DN600) in Germany. The expected transmission capacity from the Netherlands to Germany: 0.178 Mt/y by 2029 and 0.289 Mt/y by 2031.	Planned but not yet in permitting	2027

		9.7.3 Delta Rhine Corridor H2	Netherlands, Germany	BASF (NE) Shell New Energies (NL) Open Grid Europe GmbH (OGE) (DE) Port of Rotterdam Authority (NL)	Cross-border and national infrastructure project connecting the port of Rotterdam via the Dutch hydrogen backbone with demand centers in Western and Southwestern Germany (North Rhine-Westphalia and Rhineland-Palatine). The project aims to develop a 506 km (175 km on the Dutch and 331 km on the German side) dedicated hydrogen infrastructure pipelines. On NL section, realized by Gasunie/ HyNetwork Services: - New 55 km from starting point West of Rotterdam to Moerdijk. - New 40 km from Moerdijk to Tilburg. - New 80 from Tilburg to Tegelen / Venlo which is the border point Netherlands / Germany. On DE section, realized by OGE: - New 18 km from Venlo (border crossing Netherlands-Germany) to Gelsenkirchen/ Scholven. - New 103 km from Venlo (border crossing Netherlands-Germany) to Cologne/ Wesseling. - New 210 km from Cologne/ Wesseling to Ludwigshafen. The estimated capacity for the whole project is up to 2.18 Mt/y. The Delta Rhine Corridor H2 project plays a significant role in the national hydrogen network development plans (Dutch hydrogen grid roll-out plan and German Hydrogen Core Grid) that are currently being worked out.	Under consideration	2027
9.8		Offshore hydrogen pipeline Germany [currently known as AquaDuctus]	Germany	GASCADE Gastransport GmbH (DE)	AquaDuctus will be an offshore hydrogen pipeline, connecting the first large-scale offshore hydrogen wind farm site SEN-1 (up to 1 GW generation capacity, located in the German EEZ, 150 km north-west of the island of Heligoland. The 48" offshore pipeline will transport green hydrogen to Wilhelmshaven, Germany. Through an additional onshore pipeline, a direct link to HyPerLink and H2ercules will secure downstream connection to hydrogen users. AquaDuctus will be capable to pick up additional hydrogen quantities e.g., from further hydrogen wind farm sites, re-powering of existing wind farms and/or the interconnection of	Under consideration	2030

					adjacent offshore hydrogen pipelines (e.g., from DK, NL, UK or NO) aiming for export of local hydrogen production to the European market. The project concerns: construction of new sections: 295 km connecting SEN-1 site through the North Sea and landing onshore on the German coast north of the city Wilhelmshafe and 221 km from SEN-1 further north to the end of the German EEZ in the North Sea. From the national production in Germany (Electrolyser) to transmission system in Germany, it is expected to reach transportation capacity of 24 GWh/day by 2029, 120 GWh/day by 2039 and 336 GWh/day by 2045. The project will have a transmission capacity of 20 GW of green H2 (based on a full load 4.45 Mt/y) from 2029, sourced from offshore-electrolysis in the North Sea. The delivered capacity will be further transported to industry consumers as well as to private consumers in Germany and neighbouring countries in order to create a carbon neutral industrial production and heat market.		
9.9		Hydrogen interconnector Denmark – Germany including the following PCIs: 9.9.1 Internal hydrogen infrastructure in Germany [currently known as HyperLink III]	Germany	Gasunie (DE)	Hyperlink III, a hydrogen transport infrastructure in Germany though the route: Heidenau – Stade – Elbe Süd – Klein Offenseth – Fockbek – Ellund, connects to the Danish hydrogen network and facilitates the import of green hydrogen produced in Denmark. The related infrastructure will be planned and implemented in close cooperation with the Danish TSO Energinet. The resulting cross-border hydrogen transport network will extend from the underground hydrogen storage facility in Lille Torup, via DK Hydrogen Pipeline West, to Heidenau in the Hamburg area. It will also provide access to Storengy's SaltHy underground storage facility in Harsefeld. In Heidenau, Hyperlink III joins up with the other Hyperlink sections to enable the transmission of hydrogen to customers in other parts of Germany too.	Planned but not yet in permitting	2028

					The project covers up to 198 km of new pipelines and aims at the transmission capacity of 2.5 GWh/h (0.3 Mt/y) by 2028, with a further potential of 4.3 GWh/h by 2030 and 10 GWh/h as of 2035. Hyperlink III will make it possible, in a close cooperation with a regional DSO, to reach the industrial region of Brunsbüttel/Heide and prospective large customers (producers and offtakers) in Schleswig-Holstein and North-Eastern Lower Saxony. The project could also eventually facilitate offshore hydrogen imports with the integration of the future hydrogen import terminal in Brunsbüttel.		
		9.9.2 Internal hydrogen infrastructure in Denmark [currently known as DK Hydrogen Pipeline West]	Denmark	Energinet (DK)	National infrastructure project connecting the hydrogen storage project Lille Torup in Northern Denmark as well as electrolysis plants in the region of Esbjerg in Western Denmark with Germany. The project aims to develop a 347 km 100% hydrogen infrastructure composed of new (254 km) and converted (93 km) onshore pipelines. The project currently consists of: - New 19 km from the hydrogen storage project Lille Torup to Tjele. - New 71 km from Tjele to Idomlund. - New 55 km from Idomlund to Stovstrup. - New 42 km from Stovstrup to Endrup. - New 38 km from Endrup to Egtved. - New 25 km from Egtved to Landerupgård. - New 4 km from Landerupgård to Ryttergård. - Repurposed 93 km from Egtved to Frøslev (DK)/ Ellund (DE). The transmission capacity at the PCI Denmark-Germany interconnection point is 0.556 Mt/y (60 GWh/day).	Planned but not yet in permitting	01/10/2028
9.10		Ammonia reception facilities in Belgium including the following PCIs: 9.10.1 Ammonia reception facility Antwerp	Antwerp	Fluxys Belgium	The project consists of a liquified hydrogen terminal aiming to develop a first-of-its kind renewable energy hub, facilitating hydrogen imports (using green/low carbon ammonia as carrier) and its redistribution either for direct usage or via the open-access hydrogen backbone. The terminal will have the following technical characteristics: - H2 Injection capacity: 16.2 GWh/d (0.15 Mt/y)	Planned but not yet in permitting	31/12/2028

					- Storage capacity: 200,000 m3. The project is expected to lead to a H2 capacity increment of 16.2 GWh/d (0.15 Mt/y). Fluxys Belgium and Advario are assessing the development of the project at Advario Gas Terminal ("AGT"), suited for the construction of up to 2 tanks of 100,000 m³ each and an industrial scale cracker required for transforming NH3 into H2 with a design capacity of transforming 3,000 t/d of ammonia into H2. The implementation of the project will enable imported hydrogen (via NH3) via the terminal in Antwerp enter the European market, leveraged by the hydrogen network of Fluxys. Through this network, imported hydrogen can be used in local Belgian demand clusters and be exported towards neighbouring countries such as Germany, The Netherlands and France.		
		9.10.2 Ammonia reception facility Amplifhy Antwerp	Antwerp	VTTI Terminal Support Services ("VTTI")	The project consists of a new build green ammonia storage terminal and on-site ammonia cracking facilities in Antwerp, aiming to service the green ammonia market (fertilizer, chemicals & marine) as well as the green hydrogen market, through cracking the ammonia to hydrogen and injecting it into the European backbone system. Amplifhy Antwerp will be connected to other European countries (incl. Germany and Belgium) via the Belgian Hydrogen Backbone and is expected to have a significant impact on the decarbonization of northwest European countries. After phase 1 & 2 (phase 1 to be operational in 2028 and phase 2 in 2029/2030), the facility will have an ammonia import/storage capacity of ~0.109 Mt (~160k m3) and an ammonia cracking capacity of ~0.4Mt/y (~400ktpa). Import capacity is based on the number of jetties at the terminal and the discharge flow rates from vessels into the terminal.	Planned but not yet in permitting	01/07/2028
		9.10.3 Zeebrugge New Molecules development ammonia reception facility	Zeebrugge	Fluxys Belgium	The project consists in the development of an open-access NH3 to H2 import terminal in Zeebrugge, aiming to create a large-scale import terminal, facilitating hydrogen imports (using green/low carbon ammonia as carrier) and redistribution of hydrogen (via transformation of	Planned but not yet in permitting	01/12/2032

					NH3 into H2) via the open-access hydrogen backbone. The terminal will have the following technical characteristics: - H2 Injection capacity: 45 GWh/d (0.45 Mt/y). - Storage capacity: 300,000 m3. The project is expected to lead to a H2 capacity increment of 38 GWh/d (0.41 Mt/y). The pre-feasibility studies confirmed that an extension of the existing LNG Terminal would allow Fluxys to build one to two additional deep-sea jetties (allowing VLGCs of today and tomorrow to moor), up to 3 ammonia storage tanks of 100,000 m^3 each, up to 3 NH3 to H2 cracking units of 3,000 t/d of ammonia transformation capacity each and a connection to the open-access H2 network (including compressors, metering, etc…). The feasibility studies will explore terminal extension (land) and partial repurposing of the Zeebrugge LNG Terminal, enabling the development of the next logical steps toward the successful completion of the PCI.		
9.11		Ammonia reception facilities in Germany including the following PCIs: 9.11.1 Ammonia reception facility terminal Brunsbüttel	Brunsbüttel	RWE Supply & Trading GmbH	The project Ammonia Import Terminal in Brunsbüttel aims to enable the import of a significant amount of green ammonia. Around 300,000 tons of green NH3/y will arrive via the terminal in Brunsbüttel in a first phase. In the second phase, the overall import capacity will be increased to approximately 1.9 Mt/y of green NH3, which amount to about 0.233 Mt/y of H2 after the cracking process, which shall inject H2 into the pipeline grid. The hydrogen terminal, which is composed of berthing infrastructure with unloading facilities; transport pipeline from jetty/berth to the facility; ammonia storage tank; boil-off-gas system, send-out facilities (loading arms for trucks and train wagons); flare (overpressure reduction system); ammonia cracker; hydrogen metering and if necessary compression station; will have the following technical characteristics: - NH3 Import capacity: 30 GWh/d (1.9 Mt/y). - H2 Injection capacity: 23 GWh/d (0.233 Mt/y). - Storage capacity: 125,000 m3.	Planned but not yet in permitting	2030

					The project is expected to lead to a capacity increment of 23.5 GWh/d (700 t/d).		
		9.11.2 Ammonia reception facility Wilhelmshaven (BP)	Wilhelmshaven	BP Europa SE	The project consists in the development of a green hydrogen import facility, located in the German port of Wilhelmshaven. The project aims to develop green hydrogen production from the conversion to ammonia for transportation, shipping to the now Terminal site in Wilhelmshaven, cracking ammonia back to hydrogen and the onward supply to industrial demand centres. The terminal will have the following technical characteristics: - H2 Import capacity: approx. 1 Mt/y of liquid green ammonia (gNH3) by ship. - Production of 0.13 Mt/y of green hydrogen (gH2). - Injection capacity: 0.13 Mt/y (hydrogen will then be injected into dedicated hydrogen pipelines for transportation to industrial regions). - Storage capacity: 2x 55,000 m3 (with the option for future expansion). The project is expected to lead to an increase in hydrogen reception facility send-out capacity of 0.130 Mt/y.	Planned but not yet in permitting	2028
		9.11.3 Ammonia reception facility Wilhelmshaven (Uniper)	Wilhelmshaven	Uniper Hydrogen GmbH	The project consists in the construction of an import terminal at Wilhelmshaven (WHV), enabling the import of up to 2.6 Mt renewable/green/blue ammonia (NH3) inclunding NH3 storage, a rail car loading station and a first-of-its-kind large-scale NH3 cracking plant for the production of renewable hydrogen. Up to 20% NH3 can be directly redistributed by rail. The larger part will be cracked into up to 0.28 Mt/y of H2 and injected into the regulated German hydrogen core network which runs directly alongside the terminal site, and which contains cross border connection to DK and NL and also to the future European Hydrogen Backbone. The terminal and the connecting pipeline infrastructure significantly contribute to Security of Supply based on the forecasted gap between EU hydrogen production and demand. More particularly the site will include:	Planned but not yet in permitting	2030

					- NH3 transshipment facility: a marine infrastructure with up to two berths to allow unloading of NH3 carriers and transportation of ammonia ashore. The terminal capacity is designed to handle approx. 100 shipments/y. - NH3 Tank Farm: two tanks with each 50,000 m^3 NH3 capacity. - NH3 to H2 Cracker: 6 cracker units with total NH3 intake of 7,200 t/d (1,200 t/d each cracker) and production of ca. 160 t/d/unit of hydrogen. - Compressor power for pipeline injection (considering cracking with 6 units): ca. 38 MW Grid connection to hydrogen core network. The project is expected to lead to an increase in hydrogen reception facility send-out capacity of about 0.3 Mt/y.		
9.12		Reception facilities in the Netherlands including the following PCIs: 9.12.1 Rotterdam LH2 reception facility	Rotterdam	Shell New Energies BV	Rotterdam LH2 includes a reception facility for refuelling liquid hydrogen road trailers. The ammonia import terminal will grow over time to facilitate the increasing flows of ammonia into Europe. The import terminal includes de- and re-loading infrastructure itself (LH2 Pumps with a flowrate of 250 m3/h and loading arms to de-load the ships and fuel barks); as well as two LH2 storage facilities with a capacity of 12,500 m3 each. The terminal will have the following technical characteristics: - H2 Import capacity: 3.36 GWh/d (based on the number of jetties at the terminal and the discharge flow rates from vessels into the terminal). - Injection capacity: 3.36 GWh/d. - Storage capacity: 25,000 m3. The project is expected to lead to an increase in hydrogen reception facility send-out capacity of 3.36 GWh/d.	Planned but not yet in permitting	2028
		9.12.2 Ammonia reception facility Amplifhy Rotterdam	Rotterdam	VTTI Terminal Support Services (“VTTI”)	The project consists of a new build green ammonia storage terminal and on-site ammonia cracking facilities in Rotterdam, aiming to service the green ammonia market (fertilizer, chemicals & marine) as well as the green hydrogen market, through	Planned but not yet in permitting	01/07/2028

					cracking the ammonia to hydrogen and injecting it into the European backbone system. Amplifhy Rotterdam will be connected to other European countries (incl. Germany and Belgium) via the National H2 Backbone and Delta Rhine Corridor and is expected to have a significant impact on the decarbonization of northwest European countries. After phase 1 & 2 (phase 1 to be operational in 2028 and phase 2 in 2029/2030), the facility will have an ammonia import/storage capacity of ~0.109 Mt (~160k m3); and an ammonia cracking capacity of ~0.4 Mt/y (~400 ktpa). Import capacity is based on the number of jetties at the terminal and the discharge flow rates from vessels into the terminal.		
		9.12.3 Ammonia reception facility ACE Rotterdam	Port of Rotterdam	N.V. NEDERLANDSE GASUNIE	The project consists in the development of a reception facility in the Port of Rotterdam and aims at importing 10 Mt/y of H2 by 2030. This project introduces an open access approach, by incorporating cracking services to convert stored ammonia back into H2, in one package. The project includes the following main components: - Construction of several new tanks (e.g. 5 pcs x 85,000 m3/tank) and repurposing of 2 LNG tanks (combined storage capacity of 60,000 m3 and in a combined NH3 storage capacity of 485,000 m3). - Establishment of several berths for imports via Very Large Gas Carriers (VLGCs) and Medium Gas Carriers (MGCs), as well as provision for exports via barges and coasters. - Realization of several cracker units with a combined green H2 production capacity of 1.22 Mt, including a connection to the HNS-grid. The project will be implemented in two phases: - Phase 1: With a peak H2 production capacity of 52.9 GWh/d. The facility is estimated to have three ammonia dissociators, each with a max. peak production capacity of 600 t/d of H2. This assumes continuous production and a load factor of 92% due to on average about 8% (maintenance) downtime. Throughput volume: 3.75 Mt/y of NH3. Marine handling	Planned but not yet in permitting	2028

					capacity: a minimun of two (V)LGC berths and at least one barge/short-sea berth and a peak (un)loading rate of 2,500 t/h. - Phase 2: The expected average capacity of the facility in the 2nd phase is increased to 3,342 t/d, 111.4 GWh/d or 1.22 Mt/y of green H2.		
9.13		Ammonia reception facility Dunkerque (FR)	Dunkerque	Dunkerque LNG	The project consists in the development of an open-access NH3 to H2 import terminal in Dunkerque. The project aims to create a large-scale import terminal, facilitating hydrogen imports (using green/low carbon ammonia as carrier) and its redistribution of hydrogen (via transformation of NH3 into H2) via the open-access hydrogen backbone. The project plans building one to two additional deep-sea jetties (allowing VLGCs of today and tomorrow to moor), up to 3 ammonia storage tanks of 100,000 m³ each, up to 3 NH3 to H2 cracking units of 3,000 t/d of ammonia transformation capacity each and a connection to the open-access H2 network (including compressors, metering, etc…) connecting directly two countries: France and Belgium. The terminal will have the following technical characteristics: - Injection capacity: 48 GWh/d. - Storage capacity: 300,000 m3. The project is expected to lead to an increase in hydrogen reception facility send-out capacity of 0.45 Mt/y.	Planned but not yet in permitting	2035
9.14		H2Sines.RDAM electrolyser (PT)	Sines	ELECTRABEL	The foreseen infrastructure includes a 400 MW electrolyser for renewable hydrogen production in Sines (Portugal) with an estimated output of 0.03 Mt/y of hydrogen. The electricity supplied to the electrolyser will come from a dedicated hybrid renewable energy source, composed of renewable energy fields in direct connection and renewable supply through the grid and dedicated power purchase agreement (PPA).	Under consideration	>2030

					End users of the produced hydrogen will be mainly the hydrogen liquefaction plant, connected to the local hydrogen pipeline. Other end users connected to this pipe such as industrials or buildings are targeted. End usages in the mobility sector are expected to develop in the coming years as well. The commissioning timeline of the infrastructure is still under evaluation.		
9.15		Electrolyser facilities in Spain including the following PCIs: 9.15.1 Tarragona hydrogen network electrolyser	Tarragona	Repsol S.A	The project consists of a 150 MW alkaline electrolysis plant in Europe working 24/7 in a major industrial area in the Catalonian Hydrogen Valley with an estimated output ranging between 0.0181 and 0.0227 Mt/y. The project aims to contribute to the overall flexibility and efficiency of the energy system, both the electricity grid and the future hydrogen network. The plant will include all the process and general facilities to support the operation, with a target yearly average availability factor of approximately 95%. Pressurized hydrogen storage will also be included as part of the electrolysis plant scope. Required water supply and electricity supply will come from existing local grids. The production of the renewable hydrogen will be mainly for industrial use (Repsol Refinery and new methanol plant, Ecoplanta Molecular Recycling Solution), as well as other uses such as mobility and injection into the existing natural gas network. The completion of the electrolyser is foreseen for November 2027.	Planned but not yet in permitting	11/2027
		9.15.2 Bilbao large scale electrolyser	Bilbao	Bay of Biscay Hydrogen S.L.	The project consists of a 400 MW alkaline electrolysis plant working 24 hours, which aims to produce around 2 tonnes per hour (~65.5 kt/y) of renewable hydrogen. The project will be located in Muskiz (Spain), in the Petronor refinery, and is part of the Basque Hydrogen Corridor (BH2C). The electrolyser is planned in two phases: - first phase with a nominal power capacity of 100 MW to be commissioned in 2026 with an estimated output of 0.016 Mt/y of green	Planned but not yet in permitting	12/2026

					hydrogen. - second phase of 300 MW with an estimated output of 0.0495 Mt/y to be commissioned in 2030. The electricity to be fed into the electrolysers will be obtained via renewable PPAs, and no dedicated renewable assets are expected to be directly connected to the electrolysers. The electrolyser will supply hydrogen to the Petronor refinery, with the objective of decarbonising the refining activity by substituting grey hydrogen. The electricity to be fed into the electrolysers will be obtained via renewable electricity procured by Power Purchase Agreement (PPA) form the grids, and therefore no dedicated renewable assets are expected to be directly connected to the electrolysers. The electrolyser is expected to deliver hydrogen via the hydrogen pipeline integrated in the BH2C, enabling the hydrogen supply to be extended to other industrial off-takers in the region and also for mobility solutions.		
		9.15.3 Cartagena large scale electrolyser	Cartagena	Repsol S.A.	The project consists of a 600 MW alkaline electrolysis plant in Cartagena (Spain) capable of operating on a continuous basis (24/7), located in a major industrial area in the Cartagena Hydrogen Valley. The project aims to contribute to the overall flexibility and efficiency of the energy system, both the electricity grid and the future hydrogen network. The project will be developed in two phases: - Phase 1 (100 MW) to be commissioned in 2027. - Phase 2 (500 MW additional) planned to be commissioned after 2030. The plant will include all the process, utilities and general facilities to support the operation, with a target yearly average availability factor of approximately 95%. Pressurized hydrogen storage will also be included as part of the electrolysis plant scope. Required water supply and electricity supply will come from existing local grids. The production of the renewable hydrogen will be mainly for industrial use (Repsol Refinery), as well as other	Planned but not yet in permitting	05/2027

					uses such as mobility and injection into the future repurposed natural gas network.		
		9.15.4 Valle andaluz del hidrógeno verde electrolyser	Algeciras/ Huelva	Compañía Española de Petróleos, S.A.U. (CEPSA)	The "Andalusian Green Hydrogen Valley" is CEPSA's initiative to install 2GW of electrolysis capacity by 2030 in the south of Spain next to its two Energy Parks, EP, (former refineries), in Huelva and Cádiz (Algeciras). In Huelva, hydrogen (H2) will be used to decarbonize the transport sector (with biofuels, Sustainable Aviation Fuels for aviation) and local demand to decarbonise the chemical industry. H2 grid injection will also be considered to decarbonise other industrial customers. The 1 GW in Huelva will be developed in different subprojects: - The ONUBA Subproject will be developed in two phases. The first (400 MW) to be commissioned in 2026, and the second (200 MW) to be commissioned in 2028.Together with Fertiberia, CEPSA will build this electrolyser to decarbonize Fertiberia's production processes thanks to the production of renewable ammonia, using green energy and other renewable gases. The project will be supplied with an associated 200 MW photovoltaic energy project, co-develop by Enagás Renovable and Alter Enersun, connected via direct connection to the electrolyser. - The THARSIS Subproject 400 MW to be commissioned in 2029. This project aims to produce E-methanol, with C2X thanks to the development of a 400 MW electrolyser and a methanol plant that would become one of the five largest green methanol plants in the world, with a production capacity of 0.3 Mt/y of green methanol. In Cádiz (Algeciras), the CARTEIA Project will develop 1 GW electrolysis capacity in two phases: - first phase (500 MW) to be commissioned in 2028 and - second (500 MW) to be commissioned in 2029. Both of them will be developed together with EDP Renewables and Yara Clean Ammonia. H2 will be	Planned but not yet in permitting	2028

					used to produce e-ammonia with a nominal capacity of 0.75 Mt/y via a plant developed with Yara Clean Ammonia. This e-ammonia will be used for bunkering in the Strait of Gibraltar.		
		9.15.5 Asturias H2 valley electrolyser	Asturias	H2 Aboño, S.A. (EDP Group)	EDP Group has the ambition of developing 1 GW of electrolysis in the region of Asturias by 2030, if market conditions are favourable. The Asturias H2 Valley project comprises a 150 MW electrolyser in its initial phase. Its purpose is to generate and distribute green hydrogen, utilising electricity sourced from renewable power facilities (including onshore wind, solar, and hydro). The hydrogen will be supplied to local consumers, including a refuelling station. The project is situated in the town of Aboño, which falls within the municipalities of Carreño and Gijón in Asturias (Spain). Notably, this location is adjacent to an existing coal power plant. The first operational phase is scheduled to commence by the end of 2026, and all necessary environmental and grid connection permits have already been secured. The second phase of the project will be divided between two hubs: the Aboño H2 hub (which adds 350 MW of electrolysis to the initial phase) and the future Soto H2 hub (with 500 MW of electrolysis situated at EDP's thermal power plant in Soto de Ribera, approximately 40 km away from Aboño). These two hubs will be interconnected by a high-capacity hydrogen pipeline that aligns with the European Hydrogen Backbone initiative. In total, this second phase will contribute 1 GW of electrolysis capacity, with an estimated yearly production of 0.126 Mt/y of hydrogen split equally between the two locations (Soto and Aboño).	Planned but not yet in permitting	31/12/2027
9.16		Electrolyser facilities in France including the following PCIs: 9.16.1 CarlHYng electrolyser	Carling	Verso Energy SAS in collaboration with Siemens Energy	CarlHYng is an ambitious renewable and low-carbon hydrogen production project situated in the town of Carling (France). The project aims to achieve a total capacity of 300 MW by implementing three successive units between 2027 and 2030. This phased approach will culminate in a nominal production output of 0.051 Mt/y of hydrogen.	Permitting	2030

					Verso Energy, the developer behind CarlHYng, has strategically harnessed a portfolio of renewable assets both locally and across France. These assets will supply the necessary electricity to the project's electrolysers. Notably, the majority of the electricity powering the electrolysis process will be sourced from renewable energy, with the remaining portion coming from low-carbon sources. To facilitate the distribution of this green hydrogen, CarlHYng's production plant will be seamlessly integrated into the 100% hydrogen pipeline. This pipeline, a collaborative effort involving GRTgaz, Creos, and Encevo, forms a crucial component of the mosaHYc project. Its purpose is to serve cross-border hydrogen consumers, including the German steel manufacturer SHS Group.		
		9.16.2 EmilHy electrolyser	Saint-Avold	GazelEnergie Generation	The Emil'Hy project, spearheaded by GazelEnergie, is dedicated to establishing a renewable and low-carbon hydrogen production plant. This facility will be seamlessly integrated into the MosaHYc pipeline project, a joint effort by GRTgaz (the French gas transmission system operator) and CREOS (the German distribution operator). The MosaHYc pipeline spans over 100 kilometres, connecting France and Germany. The project's overarching goal is to achieve an ultimate capacity of 400 MW. This ambitious target will be realized through a phased approach: - Initial Production Phase (2027): The project will kick off with a 200 MW capacity. - Second Phase (2030): An additional 200 MW will be added, bringing the total capacity to the desired level. The heart of this production unit lies in its electrolysis process, which extracts hydrogen from water using electricity sourced from the grid. This production unit will produce up to 0.56 Mt/y of renewable and low carbon hydrogen by electrolysis of water. The energy supply can come from either renewable sources or low-carbon electricity, ensuring compliance with the REDII delegated acts—a requirement endorsed by most hydrogen off takers.	Planned but not yet in permitting	2030

					The resulting hydrogen—whether green or low-carbon—will play a pivotal role in decarbonizing industry and heavy mobility. These sectors are major contributors to pollution in the region, making Emil'Hy's mission all the more critical.		
		9.16.3 HyGreen electrolyser	Rognac	ENGIE Energie Services	HyGreen aims to decarbonize industrial and mobility use cases (steel, chemicals as well as heavy mobility) in the South of France thanks to the integration of large-scale production (Hygreen Project), connected to storage in salt caverns (GeoH2) and several hydrogen pipelines (Hynframed and HY-FEN). Beyond the production of renewable and low carbon hydrogen, the project foresees to guarantee stability of supply (in conjunction with the hydrogen storage facility) as well as grid balancing and flexibility services for both the hydrogen and electricity sectors. The application will be integrated in the cross-border hydrogen network H2Med, HY-FEN, BARMAR connecting Iberia and large industrial demand centres in France and enables to address demand in other regions and across Member States (Germany, Benelux). Overall, the project has an estimated output of 0.055 Mt/y of hydrogen. The project will be developed in phases: - Hygreen Phase 1 aims to install 120 MW of electrolysis capacity in the area of Fos-sur-Mer. The source of electricity will be taken from the power grid. - Hygreen Phase 2 will increase electrolysis capacity by 350 MW in Villeneuve nearby H2 storage salt caverns and will be connected to HYNFRAMED and H2MED Pipeline. The source of electricity for the electrolysers is a set of solar farms in the area nearby and on shore wind farms. From 2030, the target annual hydrogen production is expected to be 250 tonnes per day.	Planned but not in the permitting	31/07/2029
		9.16.4 H2V Valenciennes electrolyser	Valenciennes	H2V	H2V Valenciennes aims to create a sizeable renewable hydrogen production plant of 400 MW in the industrial area of Valenciennes. The plant will be connected to the European hydrogen backbone through the GRTgaz pipeline transport infrastructure in the Valenciennes	Permitting	2031

					region, interconnected with Belgium (operated by Fluxys). Renewable electricity from wind and solar power Purchase Agreements and grid electricity from French mix will feed into the electrolysers. The plant will be connected to RTE grid and developed in phases. - As of 2028, the first unit of 100 MW will produce 0.014 Mt/y of hydrogen for industrial and mobility applications. - The addition of the other three 100 MW units will take place gradually in order to meet the increasing consumption of hydrogen in the region. The final target is to produce 0.056 Mt/y of hydrogen. Technical parameters: - H2V Valenciennes 1a: Installed capacity: 100 MW. - H2V Valenciennes 1b:Installed capacity: 100 MW (200 MW). - H2V Valenciennes 2a: Installed capacity: 100 MW (300 MW). - H2V Valenciennes 2b: Installed capacity: 100 MW (400 MW).		
	9.16.5 H2V Thionville electrolyser	Thionville	H2V	H2V Thionville is a 400 MW electrolyser, located in the industrial area of Thionville in France, close to the German and Luxembourg borders. The estimated total production capacity of the project is of 0.056 Mt/y of hydrogen. The production of hydrogen will be dedicated to industrial and mobility applications. The hydrogen will be produced with electricity coming from wind and solar power purchase agreements (PPA) and grid electricity from the French mix. The plant will be connected to RTE gas grid: project mosaHYc (moselle-saar-hydrogen-conversion), developed by the distribution network operators Creos (Germany) and GRTgaz (France), in cooperation with the energy company Encevo (Luxembourg). The project will be developed in two phases: - The first 200 MW are planned to operate by	Permitting	2028

					2028. - The second phase of 200 MW capacity is aimed to be operational by 2030.		
9.17		Electrolyser facilities in the Netherlands including the following PCIs: 9.17.1 Enecolyser - Green Hydrogen plant	Port of Rotterdam	N.V. Eneco	The Eneco Electrolyser - Green Hydrogen plant is a facility with a capacity of up to 800 MW. It is strategically located in the Port of Rotterdam. The project is designed to be developed in phases, with: - Phase 1 estimated to fall within the range of 50 to 200 MW. - Phase 2 is planned to intalled an additional 800 MW capacity. The overall capacity of the project will depend on the outcomes of upcoming offshore wind and hydrogen subsidies tenders in the Netherlands. For its power supply, the project will draw from two sources: - Promoter's own renewable units: Eneco plans to utilize electricity generated from its own renewable energy assets. - Dutch Electricity Transmission System: Additionally, the project will tap into the Dutch electricity transmission system. To facilitate distribution, the Eneco Electrolyser will be seamlessly integrated into the HyNetwork Services (HNS) network at one of the five projected connection points within the Port of Rotterdam. This network was formerly known as "HyTransPort". The connection will be established via a ~3 km distribution pipeline, which could also link the Enecolyzer, Enecogen, and BP Refinery. As for operational efficiency, the load factor of the Eneco Electrolyser is anticipated to range between 60% and 70%. This variability will depend on the final power sourcing strategy adopted for each phase of the project. Overall, the electrolyser will have an output ranging between 0.085 Mt/y and 0.1 Mt/y.	Planned but not yet in permitting	2028
		9.17.2 H2-Fifty electrolyser	Port of Rotterdam	Hydrogen Chemistry	H2-Fifty is a 250 MW water electrolysis plant in the Port of Rotterdam.	Planned but not yet in permitting	2026

				Company (HyCC)	It is expected to produce up to 0.040 Mt/y (>100 tonnes H2/day green hydrogen) from renewable electricity. The green hydrogen will be supplied via hydrogen backbones to Europe's second largest refinery (bp Europoort) and other customers in industry and mobility across the Netherlands and Germany. The renewable electricity will be supplied via Power Purchase Agreement (PPA) compliant with the EU's Renewable Energy Directive and will source particularly electricity from Dutch offshore wind farms.		
		9.17.3 SeaH2Land electrolyser	Zeeland	Orsted Hydrogen Netherlands Holding BV	The SeaH2Land project combines offshore wind with a 1 GW electrolyser onshore in the Dutch province of Zeeland and the Belgium province of East-Flanders with commissioning foreseen around 2030. The industrial cross-border cluster, called Smart Delta Resources area, houses a variety of companies of different subsectors. The demand for hydrogen in the region is more than 0.58 Mt/y – making it the largest hydrogen cluster in the Benelux - which will increase towards more than 1.081 Mt/y in 2050. The project is composed of three phases: - The technology demonstration phase is currently ongoing, for which commissioning is expected in 2025/2026. - For up to 400 MW, commissioning is planned for 2029. - The phase towards 1 GW electrolysis commissioning date is expected in around 2030.	Permitting	2030
9.18		Electrolyser facilities in Germany including the following PCIs: 9.18.1 GreenWilhelmshaven electrolyser	Wilhelmshaven	Uniper Hydrogen GmbH	The Green Wilhelmshaven Electrolyser project will be an important domestic source for green hydrogen to the European hydrogen backbone. With the decarbonisation of energy imports, Wilhelmshaven is now facing a major transformation as an energy and industrial location, with enormous opportunities to become a hub for green energy sources for Europe. At the	Planned but not yet in permitting	2031

					site of the coal-fired power plant that was decommissioned at the end of 2021, Uniper will build and operate a large-scale electrolyser. The electrolyser will have a capacity of up to 1 GW and produce up to 1.1 Mt/y of RFNBO hydrogen in the final phase. The ramp-up phase is scheduled to begin early 2028 with the commissioning of an 1st phase electrolysis capacity of 200 MW. Due to its location on the North Sea, Wilhelmshaven is situated in a windy area with a steadily growing capacity of onshore and offshore wind farms for the generation of renewable electricity. Specifically, the transmission system operator Tennet is planning to integrate two offshore grid connection systems into the extra-high voltage grid via the Wilhelmshaven2 grid connection point with a transmission capacity of 2 x 2 GW. The site is particularly suitable for large-scale electrolysis because, on the one hand, grid congestions in the German electricity grid can be avoided and, on the other hand, the connection to the hydrogen core network and the integration of nearby hydrogen storage facilities mean that consumption centres in north-west Europe can be reliably supplied with green hydrogen. With the hydrogen transport projects H2ercules (OGE) and Hyperlink (Gasunie), customers in neighbouring European countries can also benefit in addition to customers in Germany.		
	9.18.2 CHC Wilhelmshaven electrolyser	Wilhelmshaven	EWE GASSPEICHER GmbH	Tree Energy Solutions (TES) and EWE have signed a Memorandum of Understanding (MoU) to build an electrolyser at TES's Green Energy Hub in Wilhelmshaven (Germany). The electrolyser is planned to be installed and operated starting in 2028. The planned capacity of the electrolyser is 500 MW. This MoU is in line with Germany's strategic energy policy to develop clean energy generated by the North Sea and broaden the possible supply for hydrogen.	Planned but not yet in permitting	2030	

					The hub in Wilhelmshaven is strategically placed on the North Sea coast and can accommodate up to 2 GW capacity electrolysers with renewable energy sources such as offshore wind in order to generate locally produced green hydrogen. The 500 MW electrolyser is expected to reach a hydrogen production of up to 0.05 Mt/y. The electricity necessary for the production of hydrogen is expected to come mainly from the electricity grid.		
9.19		Jytske Banke electrolyser (DK)	Jutland	Copenhagen Infrastructure Energy Transition Fund I K/S (CI ETF I)	The Jytske Banke electrolyser (DK) is a 1 GW hydrogen electrolyser located on the Westcoast of Jutland. It aims to produce hydrogen (H2) in the amount of 4 TWh/y, equivalent of 0.115 Mt/y. The project aims to utilise and integrate the abundant wind resources of the North Sea via a direct line to produce green hydrogen, a versatile element and energy carrier with an unprecedented potential to accelerate the green energy transition. The project is located in the European Union priority corridor HI WEST and will supply green hydrogen for hard-to-abate sectors in Europe, while supporting a green European hydrogen economy and the European Union's climate ambitions. The project can meet local hydrogen market demand in Denmark and the local area, supporting the several initiatives in Northwestern Jutland to become bunkering hubs for green fuels and to decarbonize their industry. The electrolyser is expected to be powered exclusively by the nearby offshore wind farm. Note that the project is undergoing a change of name and will become the Jord Hydrogen Project. The timeline for realisation of this project of common interest has been aligned with the timeline for construction of the offshore windfarm project(s) that are intended to deliver power via a direct line to the facility. This means that the FID of the integrated project (offshore wind and electrolyser) is expected by 2027, with commissioning date by 2030.	Planned but not yet in permitting	2030
9.20		Danish Hydrogen Storage (DK)	Lille Torup	Energinet	The project will establish an underground	Planned but not yet in	2027

					hydrogen storage in existing natural gas salt caverns at Lille Torup (DK). The scope of this project covers repurposing one natural gas cavern into hydrogen in 2027, with a scalable set-up capable of repurposing several other caverns if needed. The project aims to enable cluster development, as an essential part of the Danish hydrogen infrastructure, in close collaboration with local projects, as well enhance cross border hydrogen import/export, as part of the development of the Danish Hydrogen Backbone West project. The project has the following technical specifications: - The first cavern will be able to hold 7,000 tons H2 and have an injection / withdrawal capacity 480 MWh/h (LHV) or 567 MWh/h (HHV). - Working gas volume is 116 GWh (LHV) or 137 MWh/h (HHV). - Expected increase in underground hydrogen storage capacity in total 4-5 caverns equal 28-35,000 tons of H2 (the caverns have an average size of 700,000 m3).	permitting	
9.21		Hystock Opslag H2 storage	Zuidwending	N.V.Nederlandse Gasunie	The project consists in the development of an underground hydrogen storage in the Netherlands, aiming to: - Construct an oversized plant with 1 cavern connected as first cavern and with an aboveground installation. - Expand the capacity by developing three more salt-caverns. - Realize a connection with the Hydrogen Backbone. More particularly, the project plans to develop: 4 (salt) caverns which can store up to 25.3 kt (960 GWh) of hydrogen; an above ground installation; connection to the National H2 backbone (and European backbone). The project will have the following technical specifications: - Maximum Injection rate: 64 GWh/d. - Maximum Withdrawal rate: 64 GWh/d.	Planned but not yet in permitting	2032

					- Working gas volume: 1,000 GWh. - Expected increase in underground hydrogen storage capacity: 420 mcm (total stored hydrogen capacity: 4 caverns of approx. 1,000,000 m3 = 4,000,000 m3 with approx. Pmax180 bar). The project will help to achieve more flexibility in the electricity system and thus ensure flexibility services for the hydrogen value chain around 2030 and later. This will be made possible by connecting Hystock to the Dutch National Hydrogen grid. The Dutch Hydrogen grid will be further linked to the Belgian and German Hydrogen grids.		
9.22		Hydrogen storages in Germany including the following PCIs: 9.22.1 Salthy hydrogen storage Harsefeld	Harsefeld	Storengy Deutschland GmbH	The project consists of the construction of an underground hydrogen storage and more particularly the creation of a new salt cavern and construction of dedicated surface facilities to store 100% H2. The storage will be connected to the H2 network of Gasunie running from the Netherlands to Denmark via Hamburg where a H2 distribution network is planned. The project will have the following technical specifications: - Maximum Injection rate: 17 GWh/d. - Maximum Withdrawal rate: 17 GWh/d. - Working gas volume: 205 GWh. - Expected increase in underground hydrogen storage capacity: 58 mcm. The maximum storage volume and the injection/withdrawal capacities are subject to further investigations and may be adapted depending on market needs. The planned Working Gas Volume could be cycled several times in a year thanks to a highly-flexible plant design. The Harsefeld salt dome potentially allows for the creation of several caverns, enabling the following extension options : 2nd phase with another cavern and the necessary surface equipment & 3rd phase: repurposing to H2 of existing natural gas facilities.	Planned but not yet in permitting	2030
		9.22.2 RWE H2 Storage expansion Gronau-Epe	Gronau-Epe	RWE Gas Storage West GmbH	The project consists of the Hydrogen Storage expansion in Gronau-Epe, close to the Dutch border.	Planned but not yet in permitting	2028

					The enlargement includes additional sub- and above-surface installations counting: two repurposed salt caverns, used for storing natural gas, as well as a new developed above surface installation, in combination with the first project phase installation, co-existing with the natural gas storage. The project will have the following technical specifications: - Maximum Injection rate: 120,000 Nm³/h (259 t/d). - Maximum Withdrawal rate: 120,000 Nm³/h (259 t/d). - Working gas volume: approx. 154 GWh. - Expected increase in underground hydrogen storage capacity: approx. 43.5 M Nm³ H2 of working gas volume. The commercial start of these additional capacities will contribute to support the development and upscale of the infrastructure of one of the first hydrogen clusters in Germany. The enlargement of the hydrogen storage will contribute to the development of the European Hydrogen Backbone, by enabling market parties to balance and structure the increasing H2 flows, matching the needs of the end users.		
9.23		Storage GeoH2 (FR)	Manosque	Géométhane GRTgaz	The Géométhane GeoH2 hydrogen project, in Manosque, aims to develop, build and operate a hydrogen underground storage facility, including the connection pipeline Hynframed, allowing for an integrated approach to decarbonization in the Fos-Lavera-Marseille area and subsequent interconnection with H2Med and Hy-Fen. The storage facility has an initial capacity of 6,000 tons in 2 salt caverns. These 2 caverns are already built in Manosque and are currently full of brine. More particularly the project will develop two repurposed salt cavern in brine, as well as dedicated surface facilities for H2 storage (on Géométhane natural gas storage in Manosque, near Marseille - Fos-sur-Mer). The project will have the following technical specifications:	Planned but not yet in permitting	2029

					- Maximum injection / withdrawal rates: 6 GWh/d (may be adapted depending on market needs). - Working gas volume: 6,000 t / 250 GWh. - Expected increase in underground hydrogen storage capacity: 67 mcm. The extension options include a 2nd phase: up to 50 kt / 2.05 TWh/ 583 mcm, leaching additional caverns within the permit in force and repurposing to H2 of existing natural gas facilities, offering significant flexibility potential to hydrogen producers, shippers and ultimately consumers. The GEOH2 in Manosque, aims to be connected through Hyframed, to the H2Med & Hy-Fen corridor, developed to transfer hydrogen from the Iberia peninsula to Germany. GRTgaz Hyframed project is a 120 km pipeline that connects Manosque to Fos-sur-Mer, the starting point of Hy-Fen and the expected landing point of BarMar.		
9.24		Hydrogen storages in Spain including the following PCIs: 9.24.1 H2 storage North – 1	Cantabria	Enagás Infraestructuras de Hidrógeno	The project consists of the development of a Salt Cavern for H2 seasonal storage in the Cantabria as part of the national Spanish hydrogen system. The key infrastructure components H2 storage North-1 will have the following technical specifications: - Injection capacity: 11 mcm/d - 41 GWh/d. - Withdrawal capacity: 11 mcm/d - 41 GWh/d. - Working gas volume of 6,884 t is expected by 2030. In later development stages the working gas volume will reach up to 13,767 t. The underground hydrogen storage capacity is expected to increase from 77 mcm to 154 mcm under normal conditions.	Planned but not yet in permitting	31/12/2029
		9.24.2 H2 storage North – 2	Basque Country/Castilla y León	Enagás Infraestructuras de Hidrógeno	The project consists of the development of a Salt Cavern for H2 seasonal storage in the Basque-Cantabrian Basin including the following provinces: Burgos, Guipúzcoa and Álava as part of the national Spanish hydrogen system. The key infrastructure components of H2 storage	Under consideration	31/12/2029

					North-2 will have the following technical specifications: - Injection capacity: 6 mcm/d - 21 GWh/d. - Withdrawal capacity: 6 mcm/d - 21 GWh/d. - A working gas volume of 4,150 t is expected by 2030. In a later development stage, the working gas volume is expected to reach up to 16,600 t. The underground hydrogen storage capacity is expected to increase from 46 mcm to 184 mcm under normal conditions.		
9.25		Offshore hydrogen pipeline Norway – Germany	Pipeline Germany Norway	GASSCO AS Equinor ASA	The CHE Pipeline project seeks to build a dedicated open-access high pressure hydrogen pipeline from the West coast of Norway to northern Germany. The design of the hydrogen transport infrastructure is under evaluation and will either be based on (1) a partially new- and-partially repurposed natural gas offshore pipeline, (2) a completely new offshore pipeline and (3) a new pipeline that is connected to the Aquaductus pipeline in the German sector. In the repurposed case, a new hydrogen pipeline will be tied into the existing Europipe pipeline with a subsea connection. Three options are currently under assessment for the pipeline section to Germany: (1) repurposed Europipe 1 to Dornum, (2) new built pipeline to Wilhelmshaven (completely new from the hydrogen plant in Norway to Wilhelmshaven) and (3) tie-in to the Aquaductus pipeline. The project also includes an onshore receiving terminal at the exit point of the pipeline in all cases, except for the Aquaductus case. In the Aquaductus case the receiving terminal will be part of the Aquaductus scope. The maximum transport capacity of a newly built hydrogen pipeline infrastructure is up to 4 Mt/y of hydrogen. This hydrogen pipeline infrastructure will allow low-carbon and renewable hydrogen produced in the North and Norwegian Sea Basin to directly connect to the transport pipeline. More specifically the project consists of 3 concepts under review: - Concept 1: New 360 km 40'' offshore pipeline from the West coast of Norway to Draupner. The new	Planned but not yet in permitting	2030

					pipeline will be tied into the Existing Europipe pipeline, which will be disconnected from the natural gas network and re-qualified for hydrogen transport. Europipe is approximately 600 km long and 40'' in diameter. The capacity of this concept is pending confirmation from DNV, due to ongoing evaluations of Europipe, but is expected to be in the range 1.7 to 4 Mt/y. - Concept 2: New 937 km 40'' offshore pipeline from the West coast of Norway to a new built receiving terminal in the Wilhelmshaven area. The capacity of this concept is 4 Mt/y. - Concept 3: New 600 km 40'' offshore pipeline from the West coast of Norway to tie-in point to Aquaductus at the entry to the German EEZ (Aquaductus phase 2). From this point the hydrogen will be transported to a new built receiving terminal in the Wilhelmshaven area. The capacity of the pipeline from Norway to the Aquaductus tie-in point is 4 Mt/y.		

10. Priority Corridor Hydrogen interconnections in Central Eastern and South Eastern Europe ('HI East')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
		Hydrogen corridor Italy – Austria – Germany including the following PCIs:					
10.1		10.1.1 Internal hydrogen infrastructure in Italy [currently known as Italian H2 Backbone]	Italy	Snam Rete Gas S.p.A.	The project concerns the construction of an Italian backbone for the dedicated transport of hydrogen to supply the H2 Italian and European demand by connecting production plants and import infrastructures to final demand and neighbouring countries. The project concerns the commissioning of approximately 1920 km (around 75% repurposing and 25% new built) which allow: H2 import at Mazara entry point equal to 4.4 Mt/y or 448 GWh/d and from Austria up to 1.7 Mt/y or 168 GWh/d. Furthermore, the project allows H2 exports to Austria up to 1.7 Mt/y or 168 GWh/d. The Italian H2 Backbone project can be divided in two main parts: - The South-North backbone ("Dorsale Sud-Nord"), which is the southern-central part of the project, connecting Mazara del Vallo (TP) entry point in Sicily with the Minerbio node close to Bologna. This section is composed mainly by repurposed assets, with the exception of the pipeline between Sulmona (AQ) and Oricola (AQ), planned as newly built asset. - TheEast backbone ("Dorsale Est"), which is the northern part of the project, completing the H2 Italian backbone towards Austria, firstly connecting Minerbio (BO) to Zimella (VR) through a repurposed pipeline and then envisaging the construction of new pipelines from Zimella (VR) to Malborghetto (UD), finally completed till Tarvisio (Italy-Austria border) with a last and relatively short repurposed section. In addition, the PCI includes 2 compressor stations of the same size for a total of 100 MW located near Gallese (VT) north of Rome and Monforte San Giorgio (ME) in Sicily. However, up to 500 MW of H2 compressor stations could be needed depending on domestic Italian H2	Planned but not yet in permitting	31/12/2029

					demand development. The diameters of the pipelines are in the range between DN 400 and DN 1200. Through additional investments, not detailed in the current project configuration, the Italian Hydrogen Backbone could enable other potential entry or exit points in the North-East and/or South of the Italian system.		
		10.1.2 Internal hydrogen infrastructure in Austria [currently knowns as H2 Readiness of the TAG pipeline system]	Austria	Trans Austria Gasleitung GmbH	The project consists of the repurposing of 1 out of 3 existing pipelines of TAG's system for 100% hydrogen transport, with all related facilities and offtakes allowing technical import capacity of up to 1.84 Mt/y or 168 GWh/d. The project considers the transportation of H2 between the Italian-Austrian border and the Austrian-Slovakian border to connect the H2 pipeline of Eustream, including a connection to the H2 WAG Pipeline of Gas Connect Austria within Austria, close to the Austrian/Slovakian border, to directly supply Germany. The system will be in full operation in 2030 and is optimized to transport hydrogen from low-cost production areas in North Africa to the largest hydrogen demand clusters by utilizing mainly existing infrastructure. The pipeline can be operated in both transportation directions and it is an essential part of the European Hydrogen Network, covering the "Adriatic H2 Corridor", the "South Eastern H2 Corridor" and the "Eastern H2 Corridor" according to the REPowerEU Plan and also of corridors A (North Africa and Southern Europe) and E (East and South-East Europe) according to the European Hydrogen Backbone. The project is also part of the European Clean Hydrogen Alliance. The project includes the following activities and infrastructure elements: - Repurpose of 1 out of 3 existing gas pipelines (380 km) for hydrogen, including the change of components such as section valves or insulation joints where necessary. - 2 compressor stations located in Weitendorf and Eggendorf with a compressor capacity of around 30 MW each. As the determination of the H2 operating and IP pressure is subject to further study and has not yet been finally determined, the required compressor capacity may change.	Planned but not yet in permitting	31/12/2029

					- Metering Stations at the IPs and offtake/intake points along the pipeline connecting with the distribution grid.		
		10.1.3 Internal hydrogen infrastructure in Austria [currently known as H2 Backbone WAG and Penta West]	Austria	GAS CONNECT AUSTRIA GmbH	The project reflects the vision of an evolution to a H2 network enabling the delivery of H2 to industrial sites in Austria and supplying it further to neighbouring regions as well as storage sites. The project connects potential H2 sources from Northern Africa (e.g. Tunisia) via Italy or Ukraine via Slovakia with H2 demand centres in Austria and Central Europe, South Bavaria in particular. The project constitutes an important contribution in achieving the objectives of the REPowerEU plan as well as the European Green Deal. The transport of H2 through this infrastructure project with a potential capacity of 1.3 Mt/y or 150 GWh/d will lead to CO2 savings as it enhances fuel switching for high-temperature industries along the route, contributing to a significant reduction in GHG. The project includes the following activities and infrastructure elements: - Construction of 200 km of new pipelines considering WAG pipeline route (Oberkappel-Bad Leonfelden; Rainbach-Rapottenstein; Kirchberg-Sierndorf) and Penta West pipeline route (Überackern-Oberkappel). - Repurposing of 140 km of existing pipelines considering WAG pipeline route (Bad Leonfelden-Rainbach; Rapottenstein-Kirchberg; Sierndorf-Baumgarten). - Repurposing of one existing compressor station of 16 MW in a redundant configuration (1+1) located in the vicinity of Kirchberg and metering stations.	Planned but not yet in permitting	2030
		10.1.4 Internal hydrogen infrastructure in Germany [currently knowns as HyPipe Bavaria – The Hydrogen Hub]	Germany	BAYERNETS GmbH	HyPipe Bavaria – The Hydrogen Hub sets the course for a hydrogen interconnection point between Germany and Austria (IP-H2 Überackern) and establishes a hydrogen hub in Southern Bavaria. HyPipe Bavaria supports the development of an EU-wide network for transport and storage of hydrogen and creates necessary interconnections for the priority corridors HI West and East. It is driven by the market demand of end customers as well as of the goal of Bayernets to contribute to the EU targets to decarbonize hard-to-abate sectors.	Planned but not yet in permitting	31/12/2030

					The project increases as a hydrogen hub the security of supply for neighbouring TSOs by diversifying the international transit from all geographical directions. It enables the timely supply of demand centers in Bavaria by connecting the potential hydrogen sources from various directions, i.e. renewable hydrogen from Northern Africa (e.g. Tunisia and Algeria) via Italy and Austria. The project is mainly focused on the utilization of existing repurposed infrastructure to transport renewable H2. Out of a 294 km long network, 280 km of the existing pipelines will be repurposed. It also includes the construction of 14 km of new pipelines from Forchheim to Irsching in the direction of Ingolstadt and from Burghausen to the Austrian interconnection point Überackern. The total potential H2 transmission capacity of the HyPipe Bavaria is around 1.39 Mt/y or 150 GWh/d in both directions.		
10.2		Hydrogen interconnector between Czechia and Germany including the following PCIs: 10.2.1 Internal hydrogen infrastructure in Czechia towards Germany	Czechia	NET4GAS, s.r.o.	The Czech-German Hydrogen Interconnector (CGHI), Czech part, aims to create a hydrogen interconnector to connect high potential hydrogen supply areas in Northern Germany and the Baltic countries with expected high demand clusters in the EU (predominantly in South Germany and North Bohemia). Additionally, it will also enable connection of local suppliers and consumers along the corridor. The North-South supply corridor is promoted by three European gas transmission companies: GASCADE (DE), NET4GAS (CZ) and Open Grid Europe (DE). The project represents repurposing of around 170 km of existing gas pipeline within the western branch of the Czech gas transmission system to enable 100% hydrogen transportation. The total potential capacity of the repurposed transmission pipeline is 1.56 Mt/y or 144 GWh/d in both directions.	Planned but not yet in permitting	31/12/2029
		10.2.2 Internal hydrogen infrastructure in Germany [currently known as FLOW East - Making Hydrogen Happen]	Germany	GASCADE Gastransport GmbH ONTRAS Gastransport GmbH	GASCADE Gastransport GmbH in cooperation with ONTRAS Gastransport GmbH develops with FLOW – making hydrogen happen (East) a project to connect the Baltic Sea with the Czech Republic and Poland with a potential capacity of 2.22 Mt/y or 240 GWh/d.	Planned but not yet in permitting	01/03/2029

					The project foresees mainly repurposing of existing infrastructure on that route. On the entry side, capacities of renewable hydrogen sourced in the onshore and offshore production in the region of Lubmin and delivered via offshore connections from projects within the Baltic Sea are planned. The renewable hydrogen will be transported to the Czech-German VIP Brandov where it is handed over to the network of Net4Gas, s.r.o.. This cooperation is formed under the title of the Czech-German Hydrogen Interconnector (CGHI) which will ensure an integrated cross border hydrogen network from the Baltic Region to Central European countries. Another amount of hydrogen will be transported to Poland into the network of GAZ-SYSTEM S.A. via the newly built H2 interconnection Germany-Poland operated by ONTRAS Gastransport GmbH. This connection is also capable to transport green hydrogen from the Polish network to the Flow (East) system depending on market demand. The project includes the following activities and infrastructure elements: - Repurposing of 480 km of existing pipelines starting at IP Lubmin, German entry point and ending at IP Deutschneudorf, German-Czech interconnection point to the Czech gas transmission system. - Construction of two sections of 49 km of new pipelines in total, where the first section starting at Biesenbrow, connection point to the repurposed FLOW pipeline, and ending at Schwedt, connection point to a refinery to be delivered with hydrogen in the future, and the second section starting at Schwedt, Germany and ending at Mescherin, German-Polish interconnection point to the future Polish hydrogen network. - One compressor station, for which the location and capacity is very dependent on the updated expected flows calculation within the national hydrogen core grid.		

10.3		Hydrogen interconnector between Greece and Bulgaria including the following PCIs: 10.3.1 Internal hydrogen infrastructure in Greece towards the Bulgarian border	Greece	DESFA S.A.	This project consists of a new bidirectional hydrogen pipeline of approx. 570 km with a potential capacity of 0.9 Mt/y or 80 GWh/d to and from Bulgaria. The purpose of the project is to transmit pure hydrogen (H2) mainly from the southern part of Greece, up to the Interconnection with Bulgaria. The project is the Greek part of a planned cross-border hydrogen network between Greece and Bulgaria aiming to create the first interconnection hydrogen point between the two countries. A preliminary analysis defined a 36'' pipeline with a possible need for 2 compressor stations of 30 MW each located in Megara near Athens and Nea Messimvria near Thessaloniki. The hydrogen pipeline will be constructed in parallel with the existing high-pressure gas pipeline. It will connect hydrogen supply points with Athens, Corinth and Thessaloniki industrial areas, where potential hydrogen consumers are expected to be located, and is subject to relevant developments with neighbouring countries, namely Bulgaria and possibly North Macedonia in the future.	Under consideration	01/11/2029
		10.3.2 Internal hydrogen infrastructure in Bulgaria towards the Greece border	Bulgaria	Bulgartransgaz EAD	This project aims to develop a new bidirectional H2 transmission infrastructure on the territory of Bulgaria suitable for the transmission of 100% hydrogen. The planned project entails constructing 250 km long pipeline DN 1000, with a total capacity of approximately 0.9 Mt/y or 80 GWh/d, together with 2 compressor stations with a total power of 48 MW (24 MW each), located in the regions of Kulata (Municipality of Petrich) and Dupnitsa. The purpose of the project is to provide conditions for transmission of hydrogen from/to Greece and to the region of Sofia in Bulgaria. Subsequently, further development (expansion) of the infrastructure on the territory of Bulgaria is possible both inside the country and to cross-border interconnection points with Romania and other neighbouring countries.	Under consideration	31/12/2029

10.4		Generic corridor aiming to transmit hydrogen from Ukraine to Slovakia, Czechia, Austria and Germany	Ukraine to Slovakia, Czechia, Austria	GAS TSO OF UKRAINE LLC Eustream, a.s. NET4GAS, s.r.o.	The Generic Corridor between Ukraine, Slovakia, Czechia, Austria and Germany represents a key hydrogen corridor in Central Europe for transporting hydrogen from major high potential and cost-efficient hydrogen supply areas outside the EU, from Ukraine, North Africa and South-East Europe via Slovakia and Czechia to hydrogen demand areas in Germany. The hydrogen corridor will also enable the transport of hydrogen between hydrogen production facilities and hydrogen consumers mainly in Ukraine, Czechia, Slovakia and Germany.	Planned but not yet in permitting	31/12/2029

11. Priority Corridor Baltic Energy Market Interconnection Plan in hydrogen ('BEMIP Hydrogen')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
11.1		Hydrogen interconnector between Sweden and Finland [currently known as Nordic Hydrogen Route Bothnian Bay]	The Bothnian Bay	Nordion Energi AB (SE) Gasgrid Finland Oy (FI)	Nordic Hydrogen Route (NHR) – Bothnian Bay is a cross-border infrastructure project in the Swedish and Finish Bothnian Bay connecting production/ storage/ export facilities for hydrogen as well as hydrogen offtakers in Sweden and in Finland. The project aims to develop a 1,021 km (526 km on Swedish and 495 km on Finnish sides) 100% hydrogen infrastructure composed of both new onshore and potentially offshore pipelines. On the Swedish section: - New 180 km from Örnsköldsvik to Umeå, - New 209 km from Umeå to Boden, - New 137 km from Boden to the Swedish-Finnish border point. On the Finnish section: - New 15 km from Swedish-Finnish border point Tornio to the harbor of Tornio (Röyttä), - New 140 km from harbor of Tornio (Röyttä) to Oulu, - New 70 km from Oulu to Raahe, - New 150 km from Raahe to Kokkola, - New 120 km from Kokkola to Vaasa. Transmission capacity up to 4.4 Mt/y. Hydrogen supply potential of ~2.7 Mt/y by 2030 and ~6 Mt/y by 2040. Details provided reflect the current planning status (April 2024), but may be revised in the following months.	Under consideration	31/12/2028
11.2		Hydrogen interconnector between Finland, Estonia, Latvia, Lithuania, Poland and Germany [currently known as Nordic-Baltic Hydrogen Corridor]	Nordic and Baltic Sea region	Gasgrid Finland Oy (FI) Elering AS (EE) Conexus Baltic Grid, JSC (LV) AB Amber Grid (LT) Operator Gazociągów Przesyłowych GAZ-SYSTEMS.A. (PL) ONTRAS	Cross-border infrastructure project connecting hydrogen production facilities in Finland to Germany, via Estonia, Latvia, Lithuania and Poland. The project aims to develop a 2,362 km (770 km on Finnish, 290 km on Estonian, 288 km on Latvian, 284 km on Lithuanian, 720 km on Polish and 10 km on German sides) 100% hydrogen infrastructure composed of new onshore pipelines and an offshore interconnector between FI and EE.	Under consideration	31/12/2029

				Gastransport GmbH (DE)	On FI section: - New 180 km from Vaasa to Pori. - New 60 km from Pori to Rauma. - New 330 km from Rauma to Hämeenlinna,via Uusikaupunki, incl. Tampere. - New 160 km from Hämeenlinna to Inkoo, incl. Hanko. - New 40 km from Inkoo meeting the pipeline from Estonia mid-Sea (offshore). On EE section: - New 40 km from meeting the pipeline from Finland mid-Sea to the Estonian mainland, nearby Paldiski. - New 250 km from the Estonian landfall to the Estonian-Latvian border, nearby Karksi. On LV section: - New 161 km from Karski to Incukalns. - New 87 km from Incukalns to Iecava. - New 40 km from Iecava to the Latvian-Lithuanian border, nearby Kiemėnai (LT). On LT section: - New 2 km from the Lithuanian-Latvian border to Kiemėnai. - New 53 km from Kiemėnai to Panevėžys. - New 112 km from Panevėžys to Elektrenai. - New 100 km from Elektrenai to Santaka. - New 17 km from Santaka to the Lithuanian-Polish border. On PL section: - New 180 km from the Polish-Lithuanian border nearby Santaka (LT) to Ostrołęka Power Plant, coal and biomass power plant currently being expanded with a 754 MWe natural gas block (CCGT) - a prospective hydrogen offtaker. - New 161 km from Ostrołęka Power Plant to Orlen S.A. in Płock, refinery and petrochemical plant and prospective hydrogen offtaker. - New 51 km from Płock to Anwil S.A. in Włocławek, producer of nitrogen fertilizers and plastics as well as prospective hydrogen offtaker. - New 86 km from Włocławek to natural gas underground storage site Mogilno, nearby Damasławek. - New 242 km from Damasławek to the Polish-German border in the vicinity of		

					Eisenhüttenstadt (DE). On DE section: - New 10 km from the Polish border interconnection point to Eisenhüttenstadt. The estimated capacity for the whole project is approx. 1.85 Mt/y. The coordinates of the NBHC are further refined in a pre-feasibility study, which will be available mid-2024. Details provided reflect the current planning status (April 2024) but may be revised in the following months.		
11.3		Hydrogen interconnector between Sweden, Finland and Germany [currently known as the Baltic Sea Hydrogen Collector]	Baltic Sea region	Nordion Energi AB Gasgrid Finland Oy	Baltic Sea Hydrogen Collector (BHC) is a cross-border infrastructure project connecting hydrogen production facilities onshore and offshore in Sweden, Finland and the Baltic Sea region with hydrogen offtake in Germany. The project aims to develop two parallel pipeline strands totalling 2,206 km (2x 168 km on Swedish side connecting Sweden with Åland, 2x 80 km connecting Finland with Åland, 2x 855 km connecting Åland with the German side) as a 100% hydrogen infrastructure composed of new offshore pipelines between Sweden, Finland and Germany. On the Swedish section: New 168 km parallel strand (total of 336 km) from the Swedish starting point to Åland. On the Finnish section: New 80 km parallel strand (total of 160 km) from the Finnish starting point to Åland. On the offshore section to Germany - New 855 km parallel strand (total of 1,710 km) from Åland to Lubmin. - New offshore pipeline from a diversion point in the Baltic Sea to Gotland and Bornholm; the maritime routes are currently under development. Hydrogen supply potential of ~5.4 Mt/y by 2040. Details provided reflect the current planning status (April 2024), but may be revised in the following months.	Under consideration	31/12/2029

12. Priority Thematic Area Smart electricity grids deployment ('Smart electricity grids')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
12.1		ACON - Again COnnected Networks (CZ, SK), to foster the integration of the Czech and Slovak electricity markets by improving efficiency of distribution networks	Jihovýchod (CZ), Jihozápad (CZ), Strední Morava (CZ), Bratislavský kraj (SK), Západné Slovensko (SK)	Západoslovenská distribučná, a.s. (SK) EG.D a.s. (CZ)	12.1 The ACON project aims to foster the integration of the Czech and Slovak electricity markets by improving efficiency of the distribution networks. The project involves the construction and improvement of the distribution grid backbone facilitating the connection of additional electricity points of delivery. The deployment of smart grid technologies is a key component of the project. This includes installing smart elements in the distribution grid for more efficient management, integrating advance ICT solutions to gather and analyse data and development of control system applications to improve the reliability of electricity supply. More specifically, the project includes: - Construction of aprox. 50 km of border and cross-border MV lines, two110/22 kV substation, installation of 3 glazed frost detectors on 110 kV overhead lines, installation of approx. 55 fault detectors, installation of more than 300 remote control and automatic switchers, construction and smartification of more than 1,400 secondary transformer stations. - Deployment of communication technology for remote switchers and automated metering, construction of approx. 1,000 km of optical fibre network. - Integration of following IT solutions: Data integration between TE (Technical Evidence), GIS (Geographical Information System) and SCADA (Supervisory Control and Data Acquisition); monitoring of critical infrastructure equipment, SW solution recording and sharing measured and sensory data, electricity quality meters, smart asset management register and smart asset management tasks and Firewalling. - Implementation of automated metering management technology. Once the project is completed the market integration between CZ and SK will be improved, the distribution grid will be more resilient and	Under construction	2027

					the implementation of smart technologies and communication equipment will enable active regulation of energy demand, facilitating the integration of new energy consumers, decentralized renewable energy sources and support electric vehicles.		
12.2		CARMEN (BG, RO), to reinforce cross-border TSO-TSO cooperation and data sharing, enhance TSO-DSO cooperation, invest in grid expansion and increase EN 12 EN capacity for integration of new renewables and improve grid stability, security and flexibility	Nord-Vest (RO); Centru (RO); Nord-Est (RO); Sud-Est (RO); Vest (RO); Severozapaden (BG); Severen tsentralen (BG); Severoiztochen (BG).	Elektroenergien Sistemen Operator (BG) Delgaz Grid S.A. (RO) Transelectrica (RO)	CARMEN (Carpathian Modernization of Energy Network) aims to reinforce cross-border TSO-TSO cooperation and data sharing, enhance TSO-DSO cooperation, invest in grid expansion, increase capacity for integration of new renewables and improve grid stability, security, and flexibility. Large part of these goals contains implementation of smart technologies and further grid digitalization and modernization. The Project mostly involves: - The conductor replacement and installation of the DLR (dynamic line rate) system in more than 450 km of OHL (overhead lines) at the Romanian distribution grid, 150 km at the Romanian transmission level and 300 km at the Bulgarian transmission grid. - The construction of more than 500 km of fibre optic and integration of NOC (Network Operations Center) services into HV/MV Substations in RO. - The modernization and digitalization of approx. seventeen 110/20/6 kV primary substation and 46 secondary substations (MV/LV) fully integrated into DMS, SCADA and Smart Metering systems. - The modernization of approx. three 400/110 kV substations in RO (by installing FACTS for voltage control) and three in BG. The construction of approx. four new 400/110 kV substations with installed FACTS in BG. - The upgrade of the operation and control platforms in RO, such as the power quality monitory platform, voltage and reactive power regulation platform, supported by the installation of FACTS and Static Synchronous Series Compensator (SSSC), active power regulation over OHLs, etc. - Development of the RO PMU platform and connection to the Central East European data sharing platform (between CZ, HU, SK, BG, and RO, ensuring smooth data exchange with high priority of security and	Permitting	31/12/2030

					fast reaction in emergency scenarios. Once the project is completed, the cross-border cooperation of RO and BG electricity markets will be improved increasing the quality, safety, and reliability of electricity supply and the capacity to integrate intermittent-decentralized RES, new market players and e-mobility.		
12.3		Danube InGrid (HU, SK), to efficiently integrate the behaviour and actions of all market users connected to the electricity networks in Hungary and Slovakia	Bratislava Region (SK), Trnava Region (SK), Nitra Region (SK), Trenčín Region (SK), Prešov Region (SK), Košice Region (SK), Western Transdanubia (HU), Central Transdanubia (HU), Central Hungary (HU), Northern Hungary (HU)	Východoslovenská distribučná, a.s. (SK) ELMŰ Hálózati Kft. (HU) ÉMÁSZ Hálózati Kft. (HU) Západoslovenská distribučná, a.s. (SK) Slovenska electrizacna prenosova sustava a.s. (SEPS) (SK) E.ON Észak-dunántúli Áramhálózati Zrt. (HU)	Danube InGrid aims to to efficiently integrate the behaviour and actions of all market users connected to the electricity networks in Hungary and Slovakia. The Project adopts smart grid technologies and fosters the roll-out of modern energy infrastructure at national and on cross-border areas of SK and HU, to efficiently support the increase demand of consumers, prosumers and distributed renewable energy sources. The project, inter alia, involves: - Construction and modernization of the grid infrastructure, such as one 400/110 kV substations at the HV level and three 110/22 kV substations at the distribution level in Slovakia and sixteen 132/22 kV and two 132/10 kV substation in Hungary. It also includes multiple secondary substations equipped with smart elements, more than 132 km of distribution and transmission lines. - Update and development of management systems such as SCADA, GIS and creation of meteo-cross-border data exchange platform (with more than 147 meteorological stations), digital customer interface platforms (approx. 7), ICT solutions for asset management, easier failure location and remote grid control, and for digitalization of grid processes, and also for cybersecurity. - Smart devices on High Voltage and Medium Voltage lines leading to its digitalization and automation - Installation of smart devices, such as 140 VRDT (voltage regulation distribution transformers) i.e. on-load tap-changing transformers) , more than 2,000 voltage and current metering devices with communication function in MV/LV transformer stations, digital protective	Under construction	12/2029

					relays, bay control units, shunt reactors, digital substation feeders, reclosers, remotely controllable and automatic more than 1,400 switching elements and fault indicators, HV sensors etc. leading to the digitalization of the HV and MV grid. - Optical fibre network (more than 1000 km) on High Voltage and Medium Voltage levels to increase the level of communication between TSO and DSO and to integrate smart devices, new market players and renewables into the dispatching centers creating a two ways communication system. - Battery energy storage system in remote areas to support the voltage stability. - HV and MV shunt reactors for power flow management between TSO and DSO to optimize the power flows in 400 kV and 110 kV grids in Central Europe.		
12.4		Gabreta Smart Grids (CZ, DE), to increase grid hosting capacity, enable remote monitoring and control of MV grids and improve grid observability and network planning	South Bohemia (CZ); Vysočina (CZ); South Moravia (CZ); Olomouc (CZ); Zlín (CZ); Upper Bavaria (DE); Lower Bavaria (DE); Upper Franconia (DE); Middle Franconia (DE); Lower Franconia (DE); Upper Palatinate (DE).	EG.D, a.s. (CZ) Bayernwerk Netz GmbH (DE)	Gabreta Smart Grids aims to increase grid hosting capacity, enable remote monitoring and control of MV grids and improve grid observability and network planning. The project focuses on accelerating the digitization of the distribution grid and fostering cross-border cooperation between Germany (Bavaria) and the Czech Republic, specifically in the borderland area of Bohemian Forest. It aims to modernize and optimize the distribution grid by implementing smart technologies, enabling faster outage detection and restoration times and ensure secure and reliable data transmission over long distances. Key components of the Project include: - Construction and upgrade of approx. 24 km of border and cross-border MV lines, more than 10 primary substations and more than 3,000 digital secondary substations. - Installation of over 1,900 voltage regulated distribution transformers (VRDT), 9,000 monitoring devices, approx. 350 remotely controlled switchers and approx. 25 protection systems in 110/22 kV substations. - Construction of over 900 km of optical fibre network and approx. 4,000 PLC (power line communication) points.	Under construction	31/12/2030

					- To support efficient data management and analysis, the project integrates various IT solutions, such as the upgrade of the SCADA, the grid control and monitoring systems and a data sharing platforms. Once the Gabreta project is completed, it will strengthen the grid in the border region, increase flexibility and improve the security and quality of electricity supply. Moreover, it will facilitate the integration of renewable energy sources and new energy market players and support the development of e-mobility.		
12.5		GreenSwitch (AT, HR, SI), to increase hosting capacity for distributed renewable sources and efficient integration of new loads, improving observability of the distribution network and increasing cross-border capacity	Southern Austria (AT);): Jadranska Hrvatska (HR), Kontinentalna Hrvatska (HR), Vzhodna Slovenija (SI), Zahodna Slovenija (SI).	ELES, d.o.o. (SI) Elektro Ljubljana d.d. (SI) ELEKTRO GORENJSKA, podjetje za distribucijo električne energije, d.d. (SI) Elektro Celje, podjetje za distribucijo električne energije, d.d. (SI) Hrvatski operator prijenosnog sustava d.o.o. (HR) HEP Operator distribucijskog sustava d.o.o. (HEP-ODS) (HR) KNG-Kärnten Netz GmbH (AT)	GreenSwitch aims to optimize the existing grid infrastructure and allow the integration of new technologies and advanced functionalities in the transmission and distribution networks in SI, HR, and AT. The project will reinforce and digitalize the transmission and distribution grids by modernizing the electrical infrastructure (HV/MV substations and lines), installing new ICT components, and developing control system applications. Once the project is completed, the cross-border cooperation of SI, HR and AT electricity markets will be improved, the quality, safety, and reliability of electricity supply will be increased, the capacity of the grid for RES integration will be enhanced, and the sector coupling (e-mobility, heating) will be. These outcomes will be achieved by: - Installing two new power control devices (SSSC and PST), 15 km of HTLS conductors and ICT components to upgrade the DTR (dynamic thermal rate) and the WAMS (Wide Area Monitoring System) at the transmission level in HR and SI. - Constructing seven automated primary and approx. 390 secondary substations, 350 km of MV loops, 12 km of HTLS conductors, two cross-border emergency MV lines; installing four shunt reactors, approx. 100 km of fibre optics, approx. 11.000 LTE meters/modems, around 3.190 smart meters, and 3 RAN base stations; and developing new functionalities of the upgraded ADMS in the distribution grids of AT, SI, and HR. - Installing two heavy-duty grid connection	Under construction	31/12/2028

					terminals and seven network connections for fast charging stations for e-mobility and a waste heat extraction system at eleven HV power transformers of five substations in SI. Upgrading the existing VPP (Virtual Power Plant), optimizing storage, and connecting storage to the VPP will contribute to flexibility and supply quality.		

13. Priority Thematic Area Cross-border carbon dioxide network ('CO2 network')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
13.1		CO2 TransPorts will establish infrastructure to facilitate large-scale capture, transport and storage of CO2 from the Rotterdam, Antwerp and North Sea Port areas	Rotterdam (NL), Antwerp (BE), North Sea Port (BE/NL)	Havenbedrijf Rotterdam N.V (NL) North Sea Port (BE/NL) Havenbedrijf Antwerpen NV van publiek recht (BE)	CO2TransPorts is comprised of multiple pipelines proposed to be developed in two distinct project phases. Phase 1 of this PCI is focused on the development of local CO2 collection infrastructure in the Rotterdam and Antwerp port areas. In the Netherlands, the pipeline segment ('Rotterdam CO2 Collection Network') will be developed for both the transport and storage of CO2 in the Rotterdam region. In Belgium, the pipeline segment ('Antwerp CO2 Collection Network') will consist of local CO2 collection pipelines being developed in the Antwerp region, which will be stored before 2027. Phase 2 is focused on developing the 'International Backbone (Antwerp to Rotterdam)', which is the primary piece of cross-border pipeline infrastructure. The international pipeline will stretch from the most northern point of the Antwerp port area, cross the Dutch-Belgian border and connect to Rotterdam's pipeline in the eastern part of the port. Further, the Belgian collection network ('Belgium National Backbone') will also be expanded beyond Antwerp to connect to numerous industrial clusters. As Phase 3 is in concept phase, no construction dates are available. The volumes collected in the Antwerp area before 2027 will be associated with the Northern Lights PCI. For the launching volumes of the collection network in Rotterdam, offshore storage is provided in the P-18 depleted gas fields off the coast of The Hague. Capacity of these fields is 37 Mt of CO2 and it can accommodate a supply rate of the order of 2-3 Mt/y and possibly up to 5 Mt/y. It is therefore planned to utilise the P18 fields to their maximum storage capacity over the initial 15-year operational period at a storage rate of 2.5 Mt/y.	Under construction	2026

					The infrastructure elements comprising this PCI are: - Dedicated CO2 collection pipelines in the Antwerp and Rotterdam areas, excluding upstream pipelines, as well as fixed facilities for liquefaction, buffer storage and CO2 converters in view of its further transportation by pipeline or other modes of transport. - Surface and injection facilities associated to the P-18 fields. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.		
13.2		Aramis – cross-border CO2 transport and storage project, intake from emitters in the hinterland of the Rotterdam harbour area, pipe transport to storage on the Dutch continental shelf	Rotterdam (NL)	TEPNL (NL) Shell (NL) Gasunie (NL) EBN (NL)	The main objective of the Aramis project is the construction of CO2 transport infrastructure, consisting of a trunkline system (~200 km length) which is connected to a shipping terminal with buffer storage facilities (CO2next project) and other CO2 transport infrastructure facilities (Porthos project). The Aramis project envisages a new high-capacity trunkline (22 Mt/y) to transport CO2 from the Port of Rotterdam to the geological storage sites that are located on the Dutch Continental Shelf. The first phase of the Aramis project will be designed for a minimum of 7,5 Mt/y capacity, with the potential to scale up in steps to 22 Mt/y total capacity. The Aramis project will closely collaborate with Porthos, which is part of the PCI CO2TransPorts, and aims to utilise the overcapacity in their onshore backbone and pursue synergies in the development of compression capacity on the Maasvlakte. At the end of the Aramis Trunkline a distribution platform will be constructed, which will allow for connections to various storage locations, such as the L04A field and the L10 field. The K14-FA field will have a direct connection to the Aramis Trunkline via a so-called in-line tee. The infrastructure elements comprising this PCI are: - A dedicated main CO2 trunkline with different transport connections from the Port of Rotterdam to the geological storage	Permitting	2028

					sites located on the Dutch Continental Shelf. - Fixed facilities including buffer storage in the CO2 next terminal. - Surface and injection facilities associated to the abovementioned storage fields. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.		
13.3		ECO2CEE – open-access cross-border CO2 transport and storage project with projected storages sites in Denmark, Norway, Netherlands and UK	Gdansk (PL)	Air Liquide Polska Sp. z o.o. (PL) ORLEN S.A. (PL) Holcim Polska S.A. (PL) AB ORLEN Lietuva (LT)	ECO2CEE (its predecessor listed in the 5th PCI List under the PCI name "Poland - EU CCS Interconnector") is a project comprising liquefaction and buffer storage facilities in an open access multi-modal liquid CO2 import - export terminal in the Polish Gdańsk Hub, which will receive CO2 from Polish and Lithuanian emitters, where a link to the planned multi-modal export terminal in the Lithuanian port of Klaipeda (which scope is included in the CCS Baltic Consortium project) is also foreseen. The Project will create a common area on the Southern Baltic coast from which CO2 can be shipped to storage sites in the North Sea basin and the Baltic Sea basin in the future. The infrastructure elements comprising this PCI are: - Fixed facilities for liquefaction, buffer storage and CO2 converters in the multimodal export-import LCO2 Hub in Gdańsk. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.	Under consideration	09/2027
13.4		Bifrost – transport and storage project with offshore storage in DK from emitters from Denmark, Germany, Poland and Sweden	Denmark, Germany, Poland, Sweden	ARC – I/S Amager Ressourcecenter (DK) Evida (DK) BlueNord Denmark A/S (DK) TotalEnergies SE (F) Nordsøfonden (DK) Ørsted Salg &	The project intends to repurpose existing oil and gas infrastructure where possible, such as offshore facilities (e.g. platforms, interconnections) and the offshore gas transportation system, as well as newly built infrastructure to be developed where necessary.	Under consideration	2030

				Service A/S (DK)	The infrastructure elements comprising this PCI are: - The development of a dedicated onshore and offshore CO2 transportation network, other than upstream, from different regions in Denmark and Germany to the geological storage sites. - The length of onshore pipelines, other than upstream, is of indeterminate length. The offshore pipeline infrastructure has a length of circa 360 km. - Marine transport is also being considered to ensure possibility of sourcing from more remote locations looking at shipping export solutions. Shipping is outside of the PCI scope. - Fixed facilities for liquefaction and buffer storage. - Surface and injection facilities associated to offshore Danish geological storages in the North Sea. Harald depleted gas fields, located on the far western edge of the Danish North Sea, approximately 260 km direct from the shore. The fields are connected via the pipeline connection to Nybro, on the west coast of Jutland, which is the pipeline that could be repurposed for CO2 transportation for the project Bifrost, and Saline aquifers nearby the Harald storage area. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems. Shipping is outside of the PCI scope. Phase 1 will mainly rely on the storage capacity of the Harald depleted fields. The estimated storage capacity is 2.5 Mt/y over 15 years with a total storage capacity of circa 40 Mt. Phase 2 will rely on saline aquifers offshore Denmark, in the vicinity of the Harald infrastructure. The estimated storage capacity is 10.5 Mt/y over 23 years with a total storage capacity of circa 220 Mt.		

13.5		Callisto – Development of multi-modal CO2 hubs in the Mediterranean storing CO2 emissions from France and Italy	Rhône Valley, Fos and Marseille in France and Ravenna in Italy	Eni S.p.A. (IT) Snam S.p.A. (IT) ArcelorMittal Méditerranée (FR) Yara Italia SpA (IT) GRTgaz S.A. (FR) Air Liquide France Industrie (FR) Enipower SpA (IT) Basell Polyoléfines France SAS (FR) Cabot Italiana SPA (IT) Elengy S.A (FR) Versalis SpA (IT) Marcegaglia Ravenna S.p.A (IT) Lafarge Ciments S.A. (FR) Herambiente S.p.A. (IT) Les Chaux de la Tour (LHOIST Group) (FR) Polynt S.p.A. (IT) Lyondell Chimie France (FR) PetroIneos Manufacturing France SAS (FR) Société du Pipeline Sud Européen (SPSE) (FR)	Callisto is a project aiming to collect, transport and permanently store anthropogenic CO2 in the Mediterranean Sea. The infrastructure elements comprising in this PCI are: - In France, dedicated pipelines, other than upstream, collecting CO2 from industrial clusters located in the Rhône Valley and Fos - Marseille industrial areas zones. - In Italy, several dedicated pipelines, other than upstream, as follows: (i) a pipeline connecting Ravenna and the Ravenna Casalborsetti facility (15 kms); (ii) a new pipeline connecting Ferrara and Ravenna-Casalborsetti; (iii) a pipeline connecting Marghera and Ferrara. Two offshore dedicated pipelines will be laid to reach the injection reservoirs. - In France, fixed facilities for liquefaction, buffer storage and CO2 converters in a CO2 Hub located in the Fos-Marseille zone. The CO2 Hub will gather the CO2 coming from the Rhône Valley and Fos - Marseille emitter clusters, to be then transported, by ship, to the Ravenna CCS permanent storage in Italy to be stored. In Italy, fixed facilities of the Ravenna Hub, including buffer storage and converters of carbon dioxide. Shipping solutions are not part of the PCI. - Surface and injection facilities associated to the related offshore CO2 storage fields off Ravenna CCS. . - Any equipment or installation for the proper, secure and efficient operation of the project, including protection, control and monitoring systems. The total amount of CO2 avoided via collection in the Fos - Marseille & Rhone Valley areas for the French emitters and the Ravenna Hub for the Italian emitters and injected in the related geological storage is estimated at 128 Mt CO2 over 23 years of operation with a ramp up from 2 to 6,4 Mt/y within the first 6 years of operation.	Planned but not yet in permitting	2029

					CO2 will come from France and Italy, with the possibility to extend to other industrial basins in France and Italy, and other countries.		
13.6		CCS Baltic Consortium – cross-border CO2 transport from Latvia and Lithuania with a multi-modal LCO2 terminal based in Klaipeda	Broceni (LV), Naujoji Akmenė (LT), Klaipėda (LT)	AB KN Energies (LT) SCHWENK Latvia SIA (LV) Mitsui O.S.K. Lines, Ltd. (JP) Akmenės cementas AB (LT) Larvik Shipping AS (NO)	The project will develop a first cross-border carbon dioxide infrastructure in the Baltic region, with substantial GHG emission reductions in the connected industrial clusters operating in the hard to abate sector. The infrastructure elements comprising this PCI are: - Fixed facilities for liquefaction, buffer storage and CO2 converters in a new multimodal LCO2 export/import terminal in Klaipėda seaport. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems. The onshore transport from industrial emitters in Lithuania and Latvia to the new multimodal terminal in Klaipėda will primarily use existing rail infrastructure, which is not part of the PCI. Alternative CO2 pipeline transportation, other than upstream, will be analysed in the future. Transport from Klaipėda to onshore/offshore permanent storage sites will be realised via shipping, outside the PCI scope. Potential CO2 storage/sequestration sites located offshore Denmark, North Sea are under consideration.	Planned but not yet in permitting	03/2030
13.7		Delta Rhine Corridor –This project will transport CO2 from Germany, The Netherlands and potentially Belgium to offshore storage infrastructure off the Dutch coast	Rotterdam, Chemelot, German Ruhr area, Rhineland and Rhineland-Palatinate	Gasunie (NL) Shell (NL) BASF (DE) OGE (DE) Port of Rotterdam (NL)	The Delta Rhine Corridor Project envisages a new-built high-capacity pipeline to transport carbon dioxide from emitters to CO2 export infrastructure in the Rotterdam harbour (such as the Aramis PCI). Via this export infrastructure, the CO2 can be transported to geological storage sites, located offshore in the North Sea. The infrastructure elements comprising this PCI are: - Pipelines, other than upstream, collecting CO2 from industry clusters in the Rotterdam area, Chemelot, the German Ruhr area, Rhineland region, Rhineland-Palatinate and potentially Antwerp.	Planned but not yet in permitting	12/2030

					- Any equipment or installation for the operation of the project, including protection, control and monitoring systems. The project aims to tie in at the Maasvlakte in the Aramis PCI infrastructure for further transport of the CO2 to permanent geological storage in depleted gas reservoirs in the North Sea. Other CO2 storage, export or utilization infrastructure projects could also be connected to the Delta Rhine Corridor.		
13.8		EU2NSEA – cross-border CO2 network developed between Belgium, Germany and Norway to also collect CO2 from DK, FR, LV, NL, PL, SE and CH with storage on the Norwegian continental shelf	Denmark, Latvia, Poland, Sweden, and Germany	Equinor ASA (NO) Fluxys Belgium (BE) Wintershall Dea AG (DE)	The EU2NSEA project is designed to enable the transport and storage of CO2 from North-West Europe to the North Sea in Norway. The project, which involves 8 EU Member States, 1 EEA country (Norway) and a third country (Switzerland), will transport CO2 from collection hubs in Belgium and Germany through offshore pipeline infrastructure to storage sites in the North Sea. Additional collection hubs in France and the Netherlands will be connected to the offshore pipeline infrastructure. The cross-border transport between EU Member States along multiple corridors; CO2 captured in Denmark, Latvia, Poland, Sweden, and eastern Germany will travel via ship through the Kiel Canal to Wilhelmshaven for injection into the pipeline, avoiding longer travel distances, improving ship operating efficiency and reducing GHG emissions from transport. Interconnection between Germany and Belgium will provide transport route of CO2 for central and southern Germany to Zeebrugge. The infrastructure elements comprising this PCI are: - An offshore CO2 transport pipeline infrastructure from export terminals in Zeebrugge and Wilhelmshaven to storage sites in the North Sea, with a length of over 1000 km CO2 collection networks, other than upstream pipelines. - Fixed facilities for liquefaction, buffer storage and converters in two CO2 export terminals in Zeebrugge (BE) and Wilhelmshaven (DE). Shipping solutions are not part of the PCI	Planned but not yet in permitting	2029

					- Surface and injection facilities associated to two storage sites in the North Sea for the permanent safe geological storage of CO2. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems. There will be two storage sites that are part of this PCI: - Smeaheia CO2 geological storage site (NO) with an annual injection rate of >20 Mt/y. The theoretical maximum storage capacity of the Smeaheia storage site is larger than 500 Mt. - Luna CO2 geological storage site (NO) with an annual injection rate of min 5 Mt/y. The theoretical maximum storage capacity of the Luna storage site is estimated to be 375 Mt.		
13.9		GT CCS Croatia – construction of pipeline transport infrastructure in Croatia and Hungary, with underground storage in HR	Croatia and Hungary	Croatian Hydrocarbon Agency (CHA) (HR)	Geothermal CCS Croatia concerns the transport and permanent storage of CO2 from emitters in Croatia and Hungary, located along the HR-HU border. The project is designed in such a way that the operator of the transport system will take over the captured CO2 from emitters, mainly cement plants in Hungary and Croatia, and transport it via pipelines to the site of the injection plant in Bockovac, Osječko-baranjska County, Republic of Croatia. The infrastructure elements comprising this PCI are: - Dedicated pipelines collecting CO2 from Croatia and Hungary, excluding upstream. - Fixed facilities for liquefaction, buffer storage and CO2 converters in the CO2 storage area per below. - Surface and injection facilities associated to the onshore CO2 storage field in in Bockovac, Croatia. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems. At this stage, the estimated capacity of	Planned but not yet in permitting	12/2027

					permanent store is 15.77 Mt of CO2 at this site over a period of 25 years.		
13.10		Norne – transportation infrastructure in Denmark with onshore storage, emitters primarily from DK will transport by pipeline and SE, BE and UK emitters will transport to DK via ship	Aalborg and Kalundborg and CO2 onshore geological storage sites at the Gassum and Havnsø Structures (DK)	Capio Danmark Holding III ApS (DK)	Norne establishes a cross-border onshore CO2 storage solution for emitters in Northern Europe. The physical infrastructure will be located in Denmark, with two onshore storage locations, two reception facilities at ports to receive primarily international (EU) CO2 by ship, and connecting pipeline. Norne is phased for the first system to be operating by mid-2027. The full Norne CO2-hub concept across two storage structures and receiving facilities is planned to be operational by end-2028. The infrastructure components included in this PCI are: - A dedicated 80 km pipeline from reception facility at the Port of Aalborg to the Gassum Structure. - Fixed facilities for liquefaction, buffer storage and CO2 converters at the reception facility at the Port of Aalborg. - Surface and injection facilities associated to the Gassum structure. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems. A future expansion of this PCI would include: - Aditional pipelines, other than upstream, to connect industries south of the Gassum Structure and East of the Havnsø Structure, to CO2 injection in each system. In addition, a 20 km pipeline from the Port of Kalundborg to the Havnsø Structure. - Fixed facilities for liquefaction, buffer storage and CO2 converters at the Port of Kalundborg. - Surface and injection facilities in a second system for permanent CO2 storage in the Havnsø Structure. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.	Planned but not yet in permitting	2027

					The total estimated combined capacity of the targeted reservoirs is 800 - 900 Mt of CO2. This is sufficient to inject CO2 for permanent storage at a 2030 goal rate of 28 Mt/y for approximately 30 years.		
13.11		Prinos Offshore storage at Prinos field for emissions from EL, by pipeline, and from BG, HR, CY, EL, IT and SI by ship	Kavala, NE Greece (Prinos CO2 Storage) Vicinity of Athens (CO2 Pipelines and liquefaction)	ENERGEAN OIL & GAS (GR) Hellenic Gas Transmission System Operator S.A. (DESFA) (GR)	The Project aims to transport/store CO2 produced by local and remote sources from hard-to-abate economic activities with the objective of decarbonizing industrial clusters in the Kavala region offering also CO2 storage services to regional emitters in hard to abate sectors in e.g. Bulgaria, Cyprus, Croatia. The infrastructure elements comprising this PCI are: - Surface and injection facilities associated to the Prinos CO2 storage field. It will be developed in two phases: Phase 1 (2025 - 2028) with an estimated injection capacity of 1 Mt/y. The facility will be able to receive CO2 in compressed form by the end of 2025/beginning 2026 and further expand to receive CO2 in liquid form (LCO2) by mid-2027. Phase 2 (December 2027 and onwards): The second phase is designed for an injection capacity in the range of 3 MtCO2/year for 25 years (or higher injection rates for shorter time periods). - Large-scale aggregation of CO2 via dedicated pipelines, other than upstream, in South Greece. - The development of CO2 liquefaction facilities and buffer storage in an export terminal at the Revithousa island. The terminal's capacity is designed at 5 Mt/y (with possibility to be further expanded to ˜10 Mt/y). The liquified CO2 will be then transported by CO2 carriers to Prinos or other permanent storage facilities in the region. - Shipping solutions are not part of the PCI. - Any equipment or installation for the operation of the project, including protection, control, and monitoring systems.	Permitting	2028
13.12		Pycasso – transport and storage of CO2 in	Southwest of France (FR),	Repsol SA (ES)	PYCASSO (PYrenean CO2 Abatement through	Planned but not yet in	2030

		onshore storage site in southwestern FR, industrial emitters from FR and ES	North of Spain (ES)	Teréga SA (ES) Lafarge Ciments (FR)	Sustainable Sequestration Operations) consists of a cross-border network of CO2 transport segments, collecting emissions in South-Western France and Northern Spain, and onshore storage infrastructures in France. The infrastructure elements comprising this PCI, per development phase, are the following: The Phase 1 of the project, due to start operations in 2030, includes: - two sections of pipeline infrastructure, excluding upstream, required to transport CO2 collected industrial clusters in South West France to the storage sites; - Liquefaction and buffer storage facilities in an import Bayonne terminal which will receive carbon emissions from industrial emitters in France and in Northern Spain; - Surface and injection facilities in two storage sites located in South West France. The Phase 2 of the project, due to start operations in 2035, includes: - Collecting pipeline, other than upstream, to transport CO2 from industrial clusters located between the Bordeaux area and the storage sites. - Cross-border pipeline to transport carbon from industrial emitters located in Northern Spain. - Liquefaction and buffer storage facilities in a receiving terminal in Bordeaux which may also receive CO2 from other CCUS hub or export carbon emissions by ship to other offshore storage sites. The two potential storage sites are depleted onshore gas fields located in the core project in the Pyrenean foothills in Southwestern France, with an estimated total capacity of up to 500 Mt. Estimated injection rates range from 1-3 Mt/y in 2030 and up to 6 Mt/y in 2035.	permitting	

13.13		Northern Lights – a CO2 cross-border connection project between several European capture initiatives (among others Belgium, Germany, Ireland, France, Sweden) transport by ship to storage on the Norwegian continental shelf	Øygarden (NO)	ArcelorMittal Belgium (BE) ArcelorMittal GmbH Hamburg (DE) ArcelorMittal GmbH Bremen (DE) Esso Raffinage SAS (FR) Fluxys Belgium SA/NV (BE) Havenbedrijf Antwerpen (Antwerp Port Authority) (BE) Neste Oyi (FI) Norcem AS (NO) Shell Global Solutions International B.V. (NL) Total S.E. (FR/BE) YARA France SAS (FR) Air Liquide Industries Belgium (BE) Preem (SE) Stockholm Exergi (SE) Havenbedrijf Antwerpen NV van publiek recht (BE) Equinor ASA (NO) Northern Lights JV DA (NO) AirLiquide Industries France (FR)	CO2 transport connection project between several European capture initiatives and the storage site on the Norwegian Continental Shelf, as well as providing alternative storage to other CCS projects. This PMI involves promoters in Norway and several Member States (France, Belgium, Netherlands, Germany, Sweden). The N-LiTES storage site is located offshore Norway, and the CO2 receiving terminal is at the Energy Park located in the Øygarden municipality, west of Bergen, Norway. The pipeline from the CO2 receiving terminal to the storage site is about 100 km long. The project is developed in two stages: - Phase 1 : Capacity to transport, inject and store up to 1.5 Mt/y CO2, where ca. 800 ktpa reserved for the two capture projects in the Longship. Construction of both on- and offshore facilities commenced in 2021, and Phase 1 is planned to be ready for operations in 2024. Any infrastructure element related to Phase 1 is outside the scope of this PMI. - Phase 2: This phase will allow for expansion of the CO2 transport, onshore handling and offshore storage capacity to up to 5 Mt/y. Part of the Phase 1 infrastructure has already been designed for Phase 2 capacity, this includes the offshore pipeline, and the umbilical to the offshore template. The infrastructure elements comprising this PMI related to Phase 2, are as follows: - Fixed facilities for buffer storage, liguefaction and CO2 converters in an onshore receiving terminal. Shipping solutions are not part of the PMI. - Surface and injection facilities associated to the CO2 storage acreage in Norway. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.	Under construction	2026

13.14		Nautilus CCS – Emissions from Le Havre, Dunkirk, Duisburg and Rogaland areas to be captured and transported by ship to various sinks in the North Sea	Dunkirk (FR) and Le Havre (FR), Duisburg (DE), Rogaland (NO)	Vår Energi (NO) Air Liquide France Industrie (ALFI) (FR) ArcelorMittal France (FR) EQIOM (FR) Chaux et Dolomies du Boulonnais (CDB) (Lhoist group) (FR) Grand Port Maritime de Dunkerque (GPMD) (FR) Dunkerque LNG (Dk LNG) (FR) GRT Gaz S.A. (FR) Esso Raffinage SAS (FR) YARA France SAS (FR) BOREALIS CHIMIE SAS (FR) TotalEnergies Raffinage France (TERF) (FR) Air Liquide Deutschland (DE) Horisont Energi (NO) Rheinkalk GmbH (DE)	The Nautilus CCS PMI aims to collect, transport and permanently store anthropogenic carbon dioxide in the North Sea. CO2 is collected from various industrial emitters in France and Germany. Nautilus CCS is a large cross-border network geographically involving France, Germany, and Norway. The Nautilus CCS gathers 3 CO2 export hubs: 1. D'Artagnan in the Dunkirk area, France, including: - A dense phase underground collecting CO2 pipeline network, excluding upstream sections. - Fixed facilities for liquefaction and buffer storage in a CO2 Terminal in Dunkirk. 2. ECO2Normandy in Normandy, France: Different scenarios of interconnection to a shipping Terminal are currently being considered for CO2 transportation, using pipeline and/or barge solutions. In the main scenario, an existing pipeline will be repurposed to transport gaseous CO2 from emitters' sites along the Seine River, to a terminal expected to be in Le Havre harbour. 3. C Zero in Duisburg, Germany: Multimodal hub in Port of Duisburg: rail / barge import, buffer storages, barge loading to export CO2 down the Rhine River that will be connected via shipping to a variety of CO2 storage sites in development in the North Sea. Nautilus CCS also includes a CO2 surface and injection facilities in a hub on the South-West Norwegian coast (Rogaland area, Norway) - Gismarvik CO2 Hub (GCO2H), capable to receive large CO2 ships. In addition, the local infrastructure will be developed for CO2 transport in Rogaland. GCO2H will offer to multiple permanent storages of CO2 to be developed off the southwest Norwegian coast a terminal and injection services and will transport the CO2 from the terminal to the CO2 sinks via subsea pipelines. The infrastructure elements comprising this PMI are:	Permitting	2029

					- Dedicated CO2 collection pipelines in the Dunkirk hinterland and Seine River areas, excluding upstream. - Fixed facilities for liquefaction, buffer storage and CO2 converters in the Dunkirk, Le Havre and Duisburg ports. Shipping solutions are not part of the PMI. - Surface and injection facilities in Rogaland associated to CO2 storage fields in the North Sea. - Any equipment or installation for the operation of the project, including protection, control and monitoring systems.		

15. Priority Corridor Projects that maintain their status of project of common interest (Article 24 derogation) ('Article 24 derogation')

No	TYNDP Reference	Definition in Delegated Act	Details on location	Promoter(s)	Type / technology employed	Implementation status	Date of commissioning
15.1		Connection of Malta to the European gas network – pipeline interconnection with Italy at Gela	Gela (IT) - Delimara (MT)	Interconnet Malta Ltd (MT)	A hydrogen-ready gas pipeline interconnection between Malta (Delimara) and Italy (Gela, Sicily) with a capacity of 1.2 bcm/year (this is the capacity of the project for transmitting natural gas, the capacity for of the project when it will transmit 100% hydrogen will be updated), diameter of 22" (DN 560) and an approximate length of 159 km (151 km offshore, 7 km onshore in Sicily and 1km onshore in Malta). The pipeline has been designed for bi-directional flow but its primary aim is to enable gas / hydrogen flows from Italy to Malta.	Permitting	11/2028
15.2		Pipeline from the East Mediterranean gas reserves to Greece mainland via Cyprus and Crete [currently known as "EastMed Pipeline"], with metering and regulating station at Megalopoli	Levantine Basin gas fields to Cyprus and Greece mainland via Crete (EL)	IGI Poseidon S.A. (EL, IT)	The 'EastMed Pipeline' is a new onshore and offshore pipeline spanning approximately 1900 km from the sources collection point located at the EU offshore Cypriot border to the European markets through Cyprus and Greece. It has been designed with a transportation capacity up to 12 bcm/y for natural gas, able to transport up to ~13 bcm/y of pure hydrogen when converted. The Project, in conjunction with the energy grids to which will be interconnected, is designed to guarantee the possibility to physically reverse the flow, both natural gas and hydrogen, along its entire route. The overall power of the compressor stations to be installed is approximately 280 MW. The Project is interconnected with the Greek and Italian transmission grids through, respectively, the Metering and Regulating Station in Megalopoli and the Poseidon Pipeline.	Permitting	12/2027