The Mediterranean: an energy and decarbonization opportunity for Europe

The wider Mediterranean region holds exceptional value for the European Union's energy transition, energy security, and industrial competitiveness. Rich in renewable energy resources, hydrocarbons, and carbon storage potential – and hosting critical infrastructure such as the Suez Canal, LNG terminals, and gas corridors – the region can contribute significantly to the achievement of a decarbonized, diversified, and secure European energy system.

As the EU advances in its path towards net zero emissions and moves to end Russian gas imports by 2027, it must fully harness the Mediterranean's potential along the way. This includes tapping both EU Member States' and neighbouring countries' resources to meet three core energy-related objectives: sustainability, security of supply, and economic competitiveness.

The European Commission's New Pact for the Mediterranean is a welcomed step to deepen cooperation on trade, energy, climate, and sustainable development in the region. As highlighted by Commissioner Dubravka Šuica in Barcelona in July 2025, the Pact seeks to ensure a shared space of peace, prosperity, and stability, *"anchored in all areas of common interest"*.[1] The Pact is forecasted to build on existing flagship initiatives such as the Trans-Mediterranean Energy and Clean Tech Cooperation Initiative (T-MED). However, to establish a strategy that ensures economic growth and prosperity, it must go beyond a focus on renewables only.

It should leverage, among others, the findings of initiatives such as the Union for Mediterranean (UfM), which established the Euro-Mediterranean Gas Platform to promote gas market integration, infrastructure development (pipelines, LNG terminals), secure a sustainable supply to the EU and partner countries. Alongside renewables, a broader, integrated energy and decarbonization strategy is needed – one that combines natural gas, carbon capture and storage (CCS), and low-carbon hydrogen.

The EU should urgently act to:

- **Unlock natural gas production potential and develop gas power plants in the Mediterranean** to support coal power phase-out and stabilize power grids during the energy transition and allow for local power production on islands.
- **Develop regional and cross-border natural gas, CO_2 and hydrogen transport networks** to enhance regional integration and energy system flexibility.
- **Accelerate regional deployment of CO_2 storage capacity** to enable cost-effective decarbonization of hard-to-abate sectors and preserve industrial competitiveness.
- **Promote development of low-carbon hydrogen** to complement green hydrogen, providing scale, affordability, and technological maturity.
- **Deepen partnerships with non-EU Mediterranean countries** to foster security of natural gas supply, as well as clean energy deployment and regional cooperation.

1 Speech by Commissioner Šuica at the MedCat conference on the New Pact for the Mediterranean, 9 July 2025.

By advancing this integrated energy approach, the Mediterranean region can emerge as a natural gas hub for Southern Europe and a regional platform for clean energy transformation – delivering security of gas supply, energy diversification, climate progress, economic growth, and enhanced regional cooperation. This paper explores these synergies and addresses a critical question for the EU's decarbonization and energy security future: *How can the Pact for the Mediterranean integrate natural gas and CCS to advance energy security and decarbonization across the EU and its neighbors?*

1. Unlocking the Mediterranean's potential for natural gas production

The role of natural gas in the region

In response to ongoing geopolitical instability and recurring supply challenges, **the EU should adopt a forward-looking strategy toward the Mediterranean region, using its potential to contribute to Europe's energy security, stability and industrial decarbonization efforts. This begins with acknowledging the Mediterranean's current role and future potential for crude oil and natural gas production**. Taking into consideration that the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) focuses on reducing emissions rather than the type of fuels used for the energy transition, it is essential to also value other aspects of the energy trilemma such as affordability and energy security. This includes recognizing the role of natural gas, as well as the development of indigenous and nearshored resources, among others, within the potential of the Mediterranean. Developing these resources can help reduce transport emissions, whilst operating under strict environmental regulations, leveraging cutting-edge, low-impact technologies.

The risks associated with inaction are substantial. Failure to invest deeper in the development and integration of Mediterranean energy resources – including natural gas – could further expose the EU to heightened supply vulnerabilities, such as: geopolitical shocks, volatile global energy markets, and increased competition – e.g. for LNG – from other major importers (i.e. the Asian market), which could result in increasing emissions. In the absence of proactive engagement, the EU may lose strategic influence in the region that is pivotal not only for energy, but also for broader economic, environmental, and political cooperation.

The central role of natural gas in the Mediterranean's energy transition has been reaffirmed at the highest institutional level. As highlighted during the 2024 UfM Gas Platform Conference, an initiative cofounded by the EU, natural gas is not only a transitional fuel, but a strategic asset for ensuring reliable energy supply, industrial competitiveness, and social stability across the region. Even with a continued expansion of renewable energy, **gas will continue to play critical role in the coming decades, complementing the intermittency of renewable energy** and enabling high-temperature energy-intensive industrial processes. This is especially true in the Southern Mediterranean, where population and economic growth are expected to drive a 30% increase in energy demand by 2050, and will need industrial activities to support this growth. Any scenario consistent with climate targets still sees gas maintaining its role in a diversified energy mix, as the region collectively works toward reducing coal and oil use, expanding renewable generation, and investing in electrification and decarbonization pathways.[2]

EU's Mediterranean natural gas reserves and resources

Strengthening the resilience of regional energy infrastructure must become a foundational objective for EU-led investments, particularly in areas highly vulnerable to extreme weather-related events. This is essential to preventing disruptions like the severe power failures in Spain in early 2025, which highlighted the importance of balancing renewables penetration with a robust power grid, adaptable and robust backup capacities.

In this context, the EU Mediterranean region is well positioned in terms of potential for energy production. Italy for instance is already among the richest EU countries in terms of crude oil (310 million barrels of oil equivalent - Mboe) and natural gas (41 billion cubic meters – bcm) reserves, but **the potential for domestic production resulting from EU's untapped natural gas resources in the region is even more remarkable**. Among the EU's natural gas resources in the region, Italy, France, and Croatia represent significant strategic assets, holding an estimated 146 bcm, 120 bcm and 78 bcm, respectively. If these Member States are incentivized to harness their full exploration and production potential, they would play a key role in enhancing the Union's strategic autonomy.

2 Union for Mediterranean, Gas Platform. *Press release conference on role of gas in Med. energy transition. Paris, March 2024*.

Additionally, the Eastern Mediterranean continues to emerge as an important supply source. **Cyprus's newly discovered natural gas fields (Aphrodite, Cronos, and Zeus) though not yet operational, are estimated to contain approximately 265 bcm of commercially recoverable resources**. These fields are expected to become commercially viable by 2027-2030, with gas exports likely to transit via Egypt, for lack of gas transit routes towards Europe, further reinforcing the Mediterranean's strategic relevance.[3]

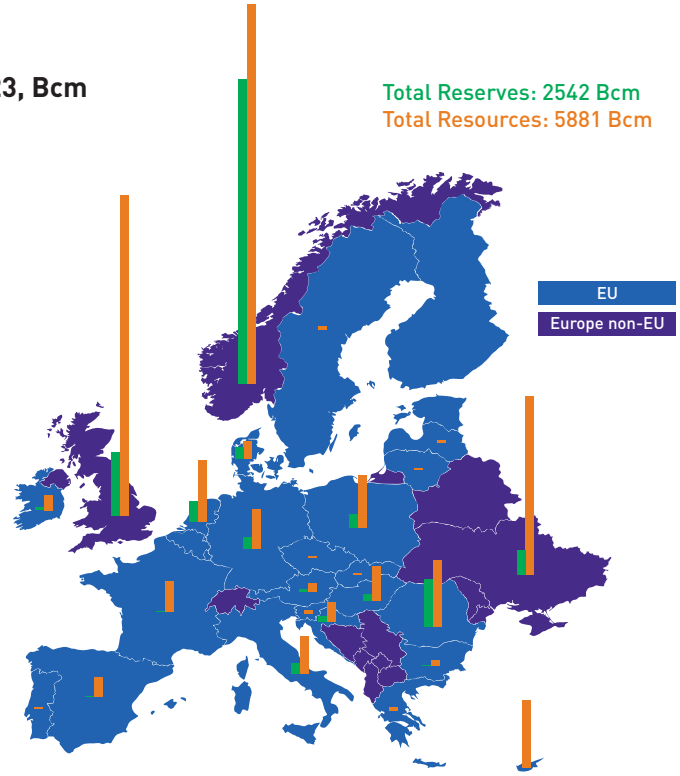
Natural gas reserves and resources 2023, Bcm

Reserves Resources

NO	1668 / 2079	DE	44 / 155
UK	269 / 1354	IT	41 / 146
RO	187 / 264	HU	26 / 136
UA	96 / 704	CZ	20 / 78
NL	80 / 241	IE	11 / 62
PL	54 / 208	CY	0 / 265
DK	46 / 69	FR	0 / 120

Natural gas **reserves** are commercial reserves that are either proved or probable.

Natural gas **resources** are the expected total recoverable economical resources.



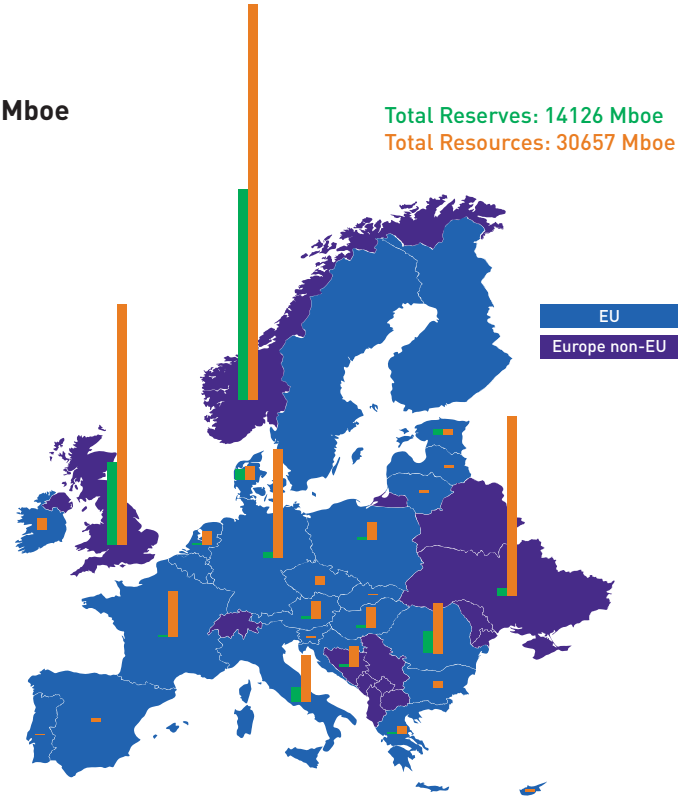
Crude oil reserves and resources 2023, Mboe

Reserves Resources

NO	7468 / 14015	AT	57 / 363
UK	1759 / 5101	CZ	56 / 440
UA	1523 / 3810	HU	53 / 432
RO	463 / 1063	PL	49 / 375
IT	310 / 988	FR	37 / 960
DK	215 / 290	NL	25 / 282
DE	111 / 2296	IE	0 / 242

Crude oil **reserves** are commercial reserves that are either proved or probable.

Crude oil **resources** are the expected total recoverable economical resources.



3 Cavic, M. 'TotalEnergies and Eni sign on dotted line for Cyprus gas exports through Egypt' *Offshore-Energy*, 2025.

The wider Mediterranean: proximity and sustainable growth

In this context, the East Med pipeline initiative advanced in recent years to connect natural gas fields in the Eastern Mediterranean – primarily offshore Israel and Cyprus – to European markets via Greece represented an example of sound infrastructure development. Although the East Med pipeline has been characterized as technically feasible and economically viable, the necessary reserves remain to be proven. Recent exploration activity in the Eastern Mediterranean, along with growing interest in Greece, could create a favourable environment for its future development – particularly in the context of Europe's efforts to diversify energy supply and reduce reliance on Russian gas.

Beyond the EU, the broader Mediterranean basin includes several key energy-producing countries whose existing infrastructure and production volumes make them crucial partners for Europe's energy diversification, such as Algeria, Israel, Egypt, Libya.[4] Algeria stands as a major supplier, with over 2,400 bcm of proven natural gas reserves and long-standing export infrastructure linking it to Europe via pipelines such as TransMed and Medgaz.[5] Egypt has emerged as a regional gas hub, thanks to recent offshore discoveries in the Zohr and Leviathan fields (the latter developed jointly with Israel), with estimated reserves exceeding 2,000 bcm and growing liquefied natural gas (LNG) export capacity. Despite political instability, Libya remains a major oil and gas producer with substantial export capacity via pipelines and LNG terminals. Israel has also significantly expanded its production capabilities in the Eastern Mediterranean, with gas reserves estimated at over 1,000 bcm. **Together, these EU and non-EU Mediterranean countries form a robust energy corridor capable of contributing significantly to Europe's energy security, supply resilience, and decarbonization goals, especially if supported by a stable regulatory framework, infrastructure investment, and diplomatic engagement.**

Recommendation

IOGP Europe urges the European Commission to provide funding for infrastructure through instruments such as the TEN-E framework, the Connecting Europe Facility (CEF). These resources should be directed towards upgrading and expanding energy interconnectors and corridors across the Mediterranean, crucial for the EU's security and diversification of energy supply.

We pledge for a more stable presence of the European Union in the Mediterranean region, through establishing additional partnerships with Mediterranean countries based on European values of mutual benefit, respect of fundamental laws and climate targets. **IOGP Europe calls on the European Commission and the European External Action Service (EEAS) to intensify strategic energy diplomacy in the Mediterranean, promoting structured partnerships with key producer countries**. These partnerships should be grounded in long-term cooperation frameworks aligned with EU climate targets, the diversification of energy supply, and the shared goal of regional stability. The EU should foster regulatory and investment certainty by facilitating joint infrastructure planning, market integration, and technology transfer, while supporting governance reforms that ensure environmental sustainability and the rule of law.

2. A global gateway for energy supply diversification

Diversifying energy sources, supply partners, and transport routes is a critical priority for safeguarding Europe's energy security. This has been acknowledged in the European Commission's Roadmap to end natural gas imports from Russia by 2027[6] and involves modernizing infrastructure and increasing pipeline inflows from North Africa and the Caspian region.

The Mediterranean stands as an important entry point for natural gas imports in the EU, with Italy (Transmed, TAP pipelines) and Spain (Medgaz and Maghreb-Europe pipelines) as major gateways connecting Europe with North African suppliers such as Algeria – constituting 13% of total EU natural gas imports. Türkiye on the eastern flank, acts as a bridge between the EU and other important gas suppliers through the Adriatic Sea, such as Azerbaijan (4% of EU imports). In addition, LNG imports from African and Middle Eastern countries – such as Mozambique, Congo, Tanzania, Qatar, and the UAE – offer significant potential to broaden the supply base.[7]

4 International Energy Agency, *World Energy Outlook 2024*.
5 M. Ouki, *Italy and its North African gas interconnections: A potential Mediterranean gas 'hub'?* The Oxford Institute for Energy Studies, 2023.
6 European Commission, Roadmap towards ending Russian energy imports, COM (2025)4040 final.
7 Data on natural gas imports in this paper are sourced from Rystad Energy, UCube (2024)

In parallel, Mediterranean LNG terminals are emerging as vital pillars for Europe's energy diversification strategy. For instance, the Alexandroupolis FSRU in Greece has been in commercial operation since October 2024,8 with a 5.5 bcm/year capacity, and pipeline links extending to Southeast and Central Europe. Meanwhile, Italy's Ravenna FSRU, with a 5 bcm/year capacity is already under operation to ma rising LNG flows, especially from the Middle East and North Africa (MENA) region and the U.S. To address the energy supply challenge of the Russian-Ukraine crisis, the oil and gas industry has shown its resilience leveraging the availability of diversified supply sources, multiple long-term partnerships, and the flexibility of its supply chain.

Regulatory modelling in supporting infrastructure development, market expectations and new long-term contracting is essential for Europe's energy security and affordability. However, if the introduction of new rules (e.g., EU Methane Emissions Regulation) raises liability risks, sets unachievable requirements and/or implementation uncertainties for natural gas imported into Europe, they risk undermining the EU's flexibility and range of supply choices and could threaten the EU's security of supply and/or competitiveness.

3. Anchoring EU decarbonization in the Mediterranean: developing a CCS value chain in the region

The region's geographical and climate conditions, due to considerable solar and wind power generation potential, make it a leading candidate for a future renewable-led energy system. Building on this potential for solar and wind, the Mediterranean is also increasingly seen as a hub for green hydrogen production and export. High renewable availability, coupled with **strategic proximity to European industrial centers and existing energy infrastructure**, positions the region to play a pivotal role in the EU's decarbonization strategy. Several Southern European countries are investing in large-scale electrolysis projects aimed at producing green hydrogen for domestic use and cross-border export, particularly to Northern Europe via future hydrogen corridors such as the H_2Med pipeline. North African nations, notably Egypt and Morocco, are also advancing hydrogen initiatives in partnership with European stakeholders, leveraging their abundant solar resources and access to maritime routes.

Beyond these, the Mediterranean is emerging not only as a critical energy corridor but also as a uniquely endowed region for CCS, with extensive onshore and offshore geological formations suitable for permanent CO_2 storage. Countries such as Italy, Greece, Croatia, France, and Spain are actively developing CCS projects to leverage these natural advantages. The wider Mediterranean basin, including Algeria, Israel and Egypt, possess a combined theoretical storage capacity in the multi-gigatons range, with saline aquifers and depleted oil and gas fields offering ideal reservoirs.

In total, the EU Mediterranean region accounts for more than **20 carbon capture projects in development**, with major industrial clusters involved in Italy, France, Croatia, Spain, and Greece. Italy's *Ravenna CCS project* and Greece's *Prinos project* are leading examples of industrial-scale CO_2 storage efforts already underway.[9] **Notably, the Mediterranean hosts the only two CO_2 storage projects currently operational within the EU: the CO_2 EOR Project in Croatia, and the Ravenna CCS Phase 1 project in Italy.**

Spain's North-Eastern *TarraCO2* aims to start operations by 2030, adding 2 $MTCO_2$ per annum of injection capacity. Italy's *Ravenna Phase 1 project* entered into operations for its first phase of CO_2 injection in 2024. Eni, as operator of the project in a joint venture, plans to scale-up the project to develop an injection capacity of 4 $MtCO_2$ per year by 2030, with the potential to increase this to over 16 $MtCO_2$ annually post-2030. Similarly, Greece's first CO_2 storage project *Prinos* aims to start operations in 2029 with an initial capacity of 1 $MtCO_2$ per year, potentially expanding to 3 $MtCO_2$ after 2030, depending on market conditions.

This takes on added significance as Spain and France are also developing additional hubs in the Ebro and Murcia basins,[10] and in Lacq, respectively. This positions the Mediterranean as an important decarbonization hub for the EU's Net Zero Industry Act (NZIA) CO_2 injection capacity objectives and targets for 2050, enabling industrial emissions abatement across borders.

8 Todorović I. 'Alexandroupolis LNG Terminal begins commercial operations', Balkan Green Energy news 2025.
9 IOGP Europe's Map of projected CO_2 Storage Sites in Europe.
10 The Greenpulse project, with an estimated total capacity of 40 Mt [2024].

Recommendation

The EU should therefore promote funding and derisking schemes at the national and EU level to enable effective decarbonization solutions through CCS for Mediterranean CO_2 emitters such as the Ravenna CCS and Prinos projects.

A strategic tool to achieve this would be to develop ad-hoc public-private partnership initiatives to support the development of CO_2 capture, transport and storage infrastructure, where emitters are geographically dispersed, and storage capacity is still emerging.

These would cover the three key risks that currently hinder CCS investments:

1. **Market risks** – Adequate infrastructure is a prerequisite for unlocking the development of sufficient demand. If emitters are not yet ready or available, assets may remain underutilized, leading to high tariffs and making participation economically unfeasible.
2. **Delay risks** – Emitters may face delays in delivering CO_2 as planned, creating uncertainty for infrastructure operators and affecting project timelines and revenues.
3. **Counterparty risks** – If an emitter fails to deliver, operators may struggle to find alternative clients in a market that is not yet liquid, undermining the financial stability of the project.

This partnership could be financed by the Member States that will benefit from access to CO_2 storage capacity, for example using revenues from the EU Emissions Trading System (ETS).

These public-private partnerships could be particularly relevant in the Mediterranean, where cross-border cooperation is essential and only a few storage projects are currently under development. **By reducing financial uncertainty for both emitters and infrastructure operators, the partnerships would support the creation of a stable, investable, and integrated CCS market.**

To support the development of the CCS value chain and scale-up hydrogen scale-up, a regional CO_2 transport network is rapidly taking shape. Italy's Ravenna hub, a logistic hub part of the Ravenna CCS project, will serve as a central node, providing connection for Italian and Southern Europe (Mediterranean Area) emitters, leveraging on an infrastructure capable of receiving CO_2 through multiple transport modes, i.e. ships, pipelines, trains, and trucks. The EU Callisto PCI (project of common European interest) planned to be connected to the Ravenna storage facility is developing a multi-modal CO_2 transport corridor linking emitters in Italy and France with the storage site, leveraging both pipelines and shipping. Similarly, Greece's Prinos project includes a CO_2 liquefaction and export terminal in Kavala.

Recommendation

The European Commission should create incentives at the EU level for the development of market, easing the business case for CCS project developers with targeted public funding and de-risking mechanisms, as IOGP Europe suggests in its proposal for a European CCS Bank. We deem the announced Industrial Decarbonization Bank as an appropriate framework to establish this mechanism.

By covering the cost gap between a stable 'strike price' and the fluctuating ETS allowance prices, CCfDs offer a stable, predictable environment for investors, ensuring the economical viability of capture investments (and the related costs of contracting for transport and storage).

This should be paired with a clear strategy for the development of a reliable CO2 infrastructure framework, rooted in the transparency and non-discriminatory principles already established in CO2 Storage Directive 2009/31 (Article 21).

4. Beyond borders: the regional engine of Mediterranean decarbonization

Non-EU countries in the region are also accelerating CCS deployment: Algeria pioneered the technology with the In Salah project, storing nearly 4 $MtCO_2$ per year,[11] and Egypt is now scaling up onshore and offshore initiatives to decarbonize the gas and fertilizer sectors. The Eastern Mediterranean's offshore reservoirs – including Egypt's *Abu Qir* and Israel's *Leviathan* fields – are being assessed for future storage. This geological advantage positions the Mediterranean as an indispensable decarbonization hub for the medium to long-term, enabling industrial emissions abatement across borders.

Carbon capture will also be a vital enabler for low-carbon hydrogen production, with the potential of creating a major EU hydrogen hub in the Mediterranean.

In this context, leveraging the Mediterranean region's CCS capabilities and the proximity of North African countries is crucial. Algeria, possessing substantial natural gas reserves and CCS infrastructure, is strategically positioned to supply low-carbon hydrogen to Europe. **For instance, the 2023 Algerian hydrogen roadmap aspires to meet 10% of Europe's hydrogen demand by 2040, using both renewable and low-carbon hydrogen** production methods.[12]

To seize this opportunity, **IOGP Europe calls on the European Commission to prioritize CCS infrastructure, promote cross-border CO_2 and hydrogen transport frameworks**, and to **establish robust partnerships with neighboring Mediterranean states to operationalize the region's carbon storage potential and low-carbon hydrogen production at scale for the future.**

Proposal

To unlock the Mediterranean's vast potential as a hub for low-carbon energy development, a central governance structure is essential to attract investment and enhance the region's global appeal. **Establishing a dedicated recurrent, multilateral initiative, a *"Mediterranean Platform for Energy and CO_2"***, would enable the coordination of natural gas, hydrogen, CCS, and energy infrastructure projects across EU Mediterranean countries and key partners such as Algeria, Tunisia, Egypt, Israel, Morocco, Albania and Türkiye, projecting the EU's influence and know-how in the region. **IOGP Europe stands ready to collaborate for the development of such a forum for investment planning, regulatory harmonization, including of carbon markets to access CO2 storage in third countries in the Mediterranean region.**

[11] P.S. Ringrose et. al., *'The In Salah CO_2 Storage Project: Lessons Learned and Knowledge Transfer'* Energy Procedia 37, 2013. P. 6226-6236.
[12] Algerian Ministry of Energy, *Stratégie Nationale de Développement de l'Hydrogène en Algérie* [2023].

IOGP Europe recommendations:

1. Secure and Diversify Energy Supply

- **Support natural gas production** in the Mediterranean by acknowledging its relevance for EU energy security and decarbonization. This includes incentivizing development in countries like Italy, France, Croatia, and Cyprus, as well as strengthening infrastructure to harness untapped resources.
- **Strengthen the Mediterranean as a global gateway** for energy imports by diversifying supply routes and partners, especially through enhanced links with North Africa, the Eastern Mediterranean, and the Caspian region.
- **Modernize and expand strategic energy infrastructure** across the region by allocating targeted EU funding (e.g., via TEN-E, CEF, Cohesion Funds). Key projects include building new or upgrading existing pipelines, interconnectors, and LNG terminals.

2. Scale Up Carbon Capture and Storage (CCS)

- **Establish robust market signals and funding frameworks** for carbon capture and storage (CCS), including support mechanisms like a European CCS Bank to enable full-scale deployment and long-term investment viability.
- **Promote a cross-border CO_2 and hydrogen transport framework** that integrates pipeline and shipping solutions, such as the Ravenna and Prinos CCS hubs and the Callisto PCI corridor, linking Mediterranean industrial clusters with viable storage sites.
- **Forge cooperation agreements with non-EU Mediterranean countries** – to enable cross-border CO_2 storage, project EU's know-how and influence, harmonize standards, and de-risk hydrogen and CCS investments.

3. Build a Low-Carbon Hydrogen Economy

- **Accelerate the development of a Mediterranean low-carbon and renewable hydrogen hub**, particularly leveraging low carbon hydrogen production potential in North Africa and linking it to EU demand via shared infrastructure and aligned regulatory regimes. International hydrogen pipelines, including associated infrastructure in transit countries, should be financed proportionally by the beneficiary countries, and may be accompanied by European aid and financing.
- **Ensure fair cost-sharing for international hydrogen pipelines, including associated infrastructure in transit countries**. These should be financed proportionally by the beneficiary countries and may be supported by European aid and financing.

4. Enable Governance and Regional Integration

- **Create a central governance mechanism** – a *"Mediterranean Platform for Energy and CO_2"* - to coordinate policy, investment, and project development in natural gas, CCS, hydrogen and renewables across the EU and the Mediterranean with partner countries.

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