

Study on the implementation of methane abatement partnerships

Final report

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List of abbreviations

AECID	Agencia Española de Cooperación Internacional para el Desarrollo (Spain's Development Cooperation Agency)
AICS	Agenzia Italiana per la Cooperazione allo Sviluppo (Italy's Development Cooperation Agency)
BA	Bilateral agreement
CAT	Climate Action Tracker
CATF	Clean Air Task Force
CCAC	Climate and Clean Air Coalition
CPI	Climate Policy Initiative
DFI	Development financial institution
EBRD	European Bank for Reconstruction and Development
ECA	Export credit agency
EDF	Environmental Defence Fund
EIB	European Investment Bank
ESG	Environmental, social and governance
EU	European Union
FFRP	Fossil Fuel Regulatory Programme
GCC	Gulf Cooperation Council
GFMR	Global Flaring and Methane Reduction Partnership
GGFR	Global Gas Flaring Reduction Partnership
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German development cooperation agency)
GMH	Global Methane Hub
GMI	Global Methane Initiative
GMP	Global Methane Pledge
IEA	International Energy Agency
IMEO	International Methane Emissions Observatory

IPCC	Intergovernmental Panel on Climate Change
LAS	Legality assurance systems
LDAR	Leak detection and repair
LNG	Liquefied natural gas
MDB	Multilateral development bank
MoU	Memorandum of Understanding
MPA	Multi-partner agreement
MRV	Monitoring, reporting and verification
NDC	Nationally determined contribution
NDICI	Neighbourhood, Development and International Cooperation Instrument
NECP	National Energy and Climate Plan
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
OGMP	Oil and Gas Methane Partnership
PAF	Pilot Auction Facility for Methane and Climate Change Mitigation
SDGs	Sustainable Development Goals
SEI	Stockholm Environment Institute
SOE	State-owned entity
UNEP	United Nations Environment Programme
VPA	Voluntary partnership agreement
WRI	World Resources Institute
ZRF	Zero Routine Flaring

Executive Summary

Study Objectives

This study provides a comprehensive assessment of potential methane abatement partnerships (MAPs) between the European Union and key fossil fuel exporting countries, with a specific focus on three bilateral case studies: Spain–Algeria, Italy–Azerbaijan, and Germany–Angola. It explores the viability of Voluntary Partnership Agreements (VPAs), Bilateral Agreements (BAs), and Multi-Partner Approaches (MPAs) as implementation models to support compliance with the emerging EU Methane Regulation, and foster global methane mitigation. The study also assesses financing options, institutional roles, and regulatory gaps, offering concrete design elements for future partnerships.

Methodology

The study integrates qualitative and quantitative approaches. Extensive desk research was conducted on legal frameworks, methane emissions data, regulatory developments, and relevant international initiatives. This was complemented by semi-structured interviews with relevant stakeholders. The analysis combines international and country-specific insights with lessons drawn from analogous frameworks.

Key Findings

- Strategic Rationale for MAPs:
 - Producer countries will be directly affected by the EU Methane Regulation, particularly regarding the requirements imposed on fossil fuel imports. MAPs can support exporting countries in aligning with these requirements while reinforcing their domestic climate ambitions.
- Comparative Assessment of Implementation Models:
 - VPAs are legally binding and politically anchored agreements that support regulatory reforms, capacity building, and sector-wide compliance. They are most effective where inclusive governance, legal harmonisation, and domestic enforcement capacity are prioritised.
 - BAs offer flexibility and targeted support but are resource-intensive to negotiate and enforce. Their success hinges on sustained political will and robust monitoring structures.
 - MPAs enable coordinated action and financing at scale, facilitating knowledge exchange and standard-setting but may face challenges in stakeholder alignment and governance.
- Financial Needs and Investment Sources:
 - Methane abatement is highly cost-effective, but upfront financing is a hurdle. Studies indicate that on the order of hundreds of billions of dollars may be needed by 2030 to achieve large reductions in fossil fuel methane emissions. Most mitigation measures (leak repairs, equipment upgrades, gas capture) are low-cost or even profitable over time, yet many producer countries lack capital to invest in them. This creates an implementation gap despite the availability of cheap solutions. Multiple funding sources exist but are not fully aligned. They include multilateral climate funds, development bank loans, EU funding instruments, bilateral aid, and private-sector investment. Innovative incentives (such as premium pricing for low-methane gas) could further engage private capital. The challenge is to scale up and coordinate these resources to meet investment needs.

- Case Study Insights:
 - Spain–Algeria: An MPA is proposed, leveraging the countries’ deep energy ties and the EU’s convening power. Spain depends heavily on Algerian gas, while Algeria faces high methane emissions and flaring levels. The MPA would support regulatory implementation, flare reduction roadmaps, and methane-certified gas trade. Financing could be mobilised through EU instruments, the World Bank, and premium pricing by Spanish and EU firms. This inclusive model avoids bilateral sensitivities and aligns economic incentives with climate goals.
 - Germany–Angola: A VPA is proposed, anchored in the existing LNG trade between Angola and Germany. It would support Angola in ending routine flaring and strengthening its MRV framework. Germany’s support would focus on technical assistance and capacity-building, as public funds are unlikely to be used to subsidise high-revenue fossil fuel firms. Angola’s existing legal framework and international commitments provide a solid basis, but gaps in verification and enforcement remain.
 - Italy–Azerbaijan: A formal BA could set binding methane targets for Azerbaijan’s gas sector. The agreement would formalise methane reduction targets and institutional cooperation. While Azerbaijan has made international commitments, it lacks binding methane-specific legislation and has seen increases in flaring. The BA would help operationalise these commitments by supporting regulatory reforms, third-party MRV systems, and potentially mobilising financial and technical assistance from Italian institutions and EU instruments. The involvement of Italian energy companies would support on-the-ground implementation.

Conclusion

The study concludes that methane abatement partnerships are a viable and timely mechanism for addressing emissions from fossil fuel imports. A well-designed MAP, grounded in inclusive governance, regulatory alignment, and transparent MRV, can accelerate global progress towards methane reduction, enhance compliance with EU standards, and foster more equitable climate cooperation. Tailored implementation models, sustained political engagement, and flexible funding strategies are crucial to unlocking their full potential.

1. Introduction

Driven by international momentum through initiatives such as the Global Methane Pledge¹ (GMP) and legislation such as the EU Methane Regulation (2024/1787)², methane emissions reduction has become a central component of the European Union's (EU) climate diplomacy and energy transition efforts. This study investigates practical approaches to operationalising methane abatement partnerships between EU Member States and fossil fuel producing countries, addressing a critical gap in current policy frameworks.

1.1 Background and context

Methane is the second most impactful greenhouse gas (GHG) after carbon dioxide (CO₂), with a global warming potential significantly greater than CO₂ over short timeframes. Although it remains in the atmosphere for a much shorter period (approximately 12 years), its impact on global warming during that time is disproportionately large³.

According to the International Energy Agency (IEA), global methane emissions from the fossil fuels sector must decline by around 75% by 2030 to align with the Net Zero Emissions by 2050 Scenario⁴. This level of ambition is also central to achieving the targets set out in the Paris Agreement. Methane emissions are closely linked to air quality degradation and public health risks, due to their role in forming ground-level ozone⁵. Given these multiple environmental and social harms, accelerating methane abatement has become a strategic priority in international climate policy, particularly within the energy sector, where cost-effective abatement options are widely available.

Multiple initiatives have been launched at international level to advance reductions in methane emissions, such as the GMP, launched by the EU and the United States (US) at the Conference of the Parties (COP) 26. Nevertheless, methane emissions continue to rise and the world is not on track to meet the GMP collective target. More transparent, measurement-based data and additional investment are urgently needed to support methane abatement, particularly in the fossil fuel sector⁶.

In the EU, the Methane Regulation was adopted as the first EU-wide legal framework to address methane emissions across the energy sector, covering oil, gas and coal production, as well as imports. Crucially, the Methane Regulation extends its reach beyond the EU's borders, with Articles 27, 28, 29, and 30 imposing direct obligations on importers.

Article 27 (reporting obligations)

By May 2025 (and annually thereafter), EU importers must submit detailed information on the methane emissions associated with their imported fossil fuels to national authorities. Non-compliance requires detailed justification and corrective action.

Article 28 (equivalence of monitoring, reporting and verification (MRV) measures)

From January 2027, EU importers must demonstrate that fossil fuels imported under contracts concluded or renewed after August 2024 comply with MRV measures equivalent

¹ Global Methane Pledge (n.d.). <https://www.globalmethanepledge.org/resources/global-methane-pledge>

² Regulation (EU) 2024/1787 of the European Parliament and of the Council of 13 June 2024 on the reduction of methane emissions in the energy sector and amending Regulation (EU) 2019/942. <https://eur-lex.europa.eu/eli/reg/2024/1787/oj/eng>

³ IEA (2024). Global Methane Tracker 2024. Understanding methane emissions. <https://www.iea.org/reports/global-methane-tracker-2024/understanding-methane-emissions>

⁴ IEA (2024). Global Methane Tracker 2024. Key findings. <https://www.iea.org/reports/global-methane-tracker-2024/key-findings>

⁵ IEA (2024). Global Methane Tracker 2024. Understanding methane emissions. <https://www.iea.org/reports/global-methane-tracker-2024/understanding-methane-emissions>

⁶ IEA (2025). Global Methane Tracker 2025. Key findings. <https://www.iea.org/reports/global-methane-tracker-2025/key-findings>

to EU standards. For pre-existing contracts, importers must actively renegotiate to secure compliance. The European Commission will verify equivalence, ensuring uniformity across Member States.

Article 29 (methane intensity thresholds)

From August 2030, all imported fossil fuels must meet maximum methane intensity thresholds set by the European Commission, promoting reduced global emissions. Importers must provide annual reports demonstrating compliance with these intensity levels to retain market access.

Article 30 (transparency and methane database)

By February 2026, the EU will establish a comprehensive methane transparency database, publicly accessible, detailing methane emissions from all fossil fuels imported into the EU. Importers must provide information for inclusion in this database, increasing transparency and market accountability.

In parallel, the European Commission announced EUR 175 million in financial support to reduce methane emissions at COP28 under the ‘You Collect, We Buy’ scheme⁷. At COP29 in Baku, the European Commission launched the Methane Abatement Partnership Roadmap to facilitate collaboration between fossil fuel importing and -exporting countries. The Roadmap is the next iteration of the ‘You Collect, We Buy’ initiative and outlines a suite of voluntary measures for abating emissions⁸.

The Methane Abatement Partnership Roadmap⁹ was launched as a strategic initiative to foster collaboration with major fossil fuel producing countries beyond the EU’s borders. It aims to support producer countries in taking earlier and more ambitious action on methane abatement before the EU’s forthcoming Methane Regulation on fossil fuel imports becomes fully binding. It provides a framework for technical assistance, financial support, and knowledge-sharing, encouraging producer countries to progressively align with EU standards on MRV, while respecting their national sovereignty and development priorities.

The Methane Abatement Partnership Roadmap is led by the European Commission, with strong engagement from EU Member States such as Italy and Germany, and with the support of non-EU countries such as Canada, Japan, the United Kingdom (UK) and the US. Its cooperative, partnership-based model recognises that methane emissions are a cross-border challenge that cannot be solved by top-down regulation alone. Achieving rapid reductions requires coordinated action across the entire fossil fuel value chain, from production to distribution, with shared commitments, incentives, and technical cooperation between governments, industry, and civil society.

The Roadmap focuses on six key actions:

1. establishing cooperation between exporting and importing countries;
2. improving transparency with measurement-based emissions data;
3. supporting the development of methane policies and robust MRV systems;

⁷ European Commission (2023). EU announces €175m financial support to reduce methane emissions at COP28. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6057

⁸ European Commission (2024). EU steps up efforts to abate methane emissions with partners at COP29. https://energy.ec.europa.eu/news/eu-steps-efforts-abate-methane-emissions-partners-cop29-2024-11-12_en

⁹ European Commission (2024). Methane Abatement Partnership Roadmap. https://energy.ec.europa.eu/document/download/1978e73b-0158-4593-87a5-c051bc0ec714_en?filename=Methane%20Abatement%20Partnership%20Roadmap.pdf

4. working with operators to develop abatement plans for existing assets;
5. mobilising investment for emissions reduction projects;
6. tracking implementation to ensure actual emission cuts.

It promotes collaborative, regionally adapted initiatives that use EU financing and expertise through frameworks agreed with partner nations. It designates industry players, non-governmental organisations (NGOs), and international organisations such as the IEA as implementation partners, promoting data exchange and technical assistance to achieve quantifiable methane reductions and improve the EU's global climate leadership.

These partnerships are not diplomatic gestures, but, rather, strategic instruments. For the EU, they offer a near-term means to accelerate methane emissions reductions upstream, helping external suppliers to move progressively towards alignment with the ethos and future requirements of the Methane Regulation, even if they do not yet fully satisfy its legal standards. For producer countries, they represent an opportunity to attract investment, enhance energy system efficiency, and retain access to a decarbonising European energy market.

1.2 Objectives and approach

Methane abatement partnerships¹⁰ offer an essential mechanism to enable significant emission reductions within the fossil fuel sector, particularly across oil and gas supply chains. While comprehensive MRV requirements are clearly defined in the Methane Abatement Partnership Roadmap, limited guidance exists on how technical and financial support can be delivered effectively to partner countries. This study aims to bridge this gap by developing actionable implementation scenarios.

The objectives of the study are threefold: to identify key stakeholders, mapping their respective roles, responsibilities, and current initiatives related to methane abatement; to explore viable implementation models under various leadership scenarios (European Commission-led, Member State-led, or World Bank-led); and to assess the financial landscape, evaluating available resources, investment requirements, and the suitability of different financial instruments. The findings of the study will be particularly relevant in the context of COP30, which is expected to drive implementation across all sectors of the Paris Agreement and renew momentum on high-impact measures such as methane abatement¹¹, and where the European Commission hopes to announce the first example of a successful methane abatement partnership.

The study applies a mixed-method approach, combining extensive desk-based research with targeted stakeholder interviews to deliver robust, evidence-based findings. The desk research component involved a systematic review of a wide range of sources, including official policy documents, legislative and regulatory texts, scientific literature, academic journals, technical reports, and reputable press and newspaper coverage.

To complement and validate the desk-based findings, the study team conducted a series of semi-structured interviews with selected stakeholders to capture practical perspectives, institutional priorities, and contextual insights not always visible in documentation sources. These stakeholders were chosen for their expertise, institutional role, and relevance to the study's objectives. Interviewees included representatives from international organisations, leading international research institutes, national competent authorities from the EU Member States covered in the study, NGOs, bilateral agencies, and financial institutions actively engaged in methane abatement or climate policy. Overall, four interviews were conducted with

¹⁰ European Commission (n.d.). Statement on Methane Abatement Partnership Roadmap. https://energy.ec.europa.eu/document/download/1978e73b-0158-4593-87a5-c051bc0ec714_en?filename=Methane%20Abatement%20Partnership%20Roadmap.pdf

¹¹ International Institute for Sustainable Development (IISD) (2025). Brazil shares priorities for COP30. <https://sdg.iisd.org/news/brazil-shares-priorities-for-cop-30/>

NGOs from the EU Member States, one interview with a public authority from Germany, one with an international organisation, one with an international research institute, and one with a bilateral agency from Germany.

An initial, thorough stakeholder analysis identified international organisations, selected EU Member States (Germany, Italy, Spain), fossil fuel exporting countries, infrastructure operators, multilateral development banks (MDBs), private financial institutions, and NGOs and their roles in methane abatement (including existing initiatives). Following this analysis, implementation models, such as voluntary partnership agreements, bilateral agreements, and multi-partner agreements, were evaluated for their practical applicability, considering potential leadership roles of different actors. A financial assessment then identified funding gaps and matched those gaps these against available funding streams and mechanisms.

Finally, three detailed case studies – Germany–Angola, Italy–Azerbaijan, and Spain–Algeria – synthesised historical contexts and existing methane abatement initiatives, integrating insights from the preceding analytical tasks. These case studies applied the most suitable implementation model identified, demonstrating how methane partnerships could be structured practically within each bilateral context.

2. Stakeholder analysis

Understanding the stakeholders involved is crucial for developing effective implementation models for methane abatement partnerships. Accordingly, this chapter identifies and maps key stakeholders relevant to implementing such partnerships between the EU and fossil fuel producing countries. It outlines the roles, responsibilities, interests, and current initiatives of key stakeholder groups such as international organisations, EU institutions, selected Member States, selected fossil fuel exporting countries with their authorities and operators, and examples of MDBs, bilateral agencies, private finance institutions, and civil society. A detailed breakdown of stakeholders is presented in Annex 2.

2.1 International level

International organisations set norms, provide data and analysis on methane emissions abatement, and facilitate international cooperation. They include (see Box 1 for details on initiatives):

- The United Nations Environment Programme (UNEP) hosts some key initiatives related to methane abatement. The [International Methane Emissions Observatory](#) (IMEO) collects and summarises methane data based on national inventories, scientific and satellite data, and information from industry reporting through the [Oil and Gas Methane Partnership 2.0](#) (OGMP 2.0). It also participates in implementing the [GMP](#) and operates the [Methane Alert and Response System](#) (MARS), a satellite-based tool that identifies and notifies stakeholders of major methane emission events to enable rapid mitigation. The [Climate and Clean Air Coalition](#) (CCAC) brings together governments, intergovernmental organisations, and NGOs to reduce powerful but short-lived climate pollutants such as methane, black carbon, hydrofluorocarbons and tropospheric ozone. The CCAC works on methane through the GMP, [Fossil Fuel Regulatory Programme](#) (FFRP), and its Trust Fund for supporting projects in developing countries that address climate change and air pollution issues.
- The IEA has developed the [Global Methane Tracker](#), which gathers the latest sector-wide emissions estimates based on satellite data and measurement campaigns. It also looks at different abatement options and their costs, international methane initiatives, and emissions from abandoned fossil fuel facilities.
- The [Global Methane Initiative](#) (GMI) is an international public-private partnership working to eliminate barriers to the recovery and use of methane as a valuable energy source. The initiative provides technical support for deploying methane recovery and use projects in the oil and gas, biogas, and coal mine sectors.

Box 1: Key International organisation initiatives

[Global Methane Pledge](#) (GMP)

The GMP was launched at COP26 by the EU and the US and is supported by a range of international organisations, such as the GMI, the Global Methane Hub (GMH), the IEA and the World Bank. The GMP works on methane mitigation through six action areas: the Energy Pathway, the Waste Pathway, the Food and Agriculture Pathway, Methane Plans and Policies, Data for Methane Action, and Finance for Methane Abatement. Participating countries joining the GMP agree to undertake voluntary actions to reduce global methane emissions by at least 30% by 2030 (compared to 2020 levels) globally. In addition, participants voluntarily commit to using good practice inventory methodologies and continuously improve the national GHG inventory reporting under the Paris Agreement. The GMP also aims to improve support for international initiatives on methane emission reduction by advancing technical and policy work that can help participants in their pledges.

[Oil and Gas Methane Partnership 2.0](#) (OGMP 2.0)

OGMP 2.0 is UNEP's oil and gas reporting and mitigation programme, the successor to the earlier OGMP. The new version is more ambitious and aspires to be the only comprehensive, measurement-based international reporting framework for the sector. Over 150 participating companies adhere to a protocol for systematically managing their methane emissions from oil and gas operations. OGMP 2.0 also provides a community of practice for exchanges between members and information on access to finance. OGMP 2.0 ultimately delivers empirically verified methane emissions data that IMEO uses to gain insight into strategic mitigation actions and science-based policy options for delivering the GMP.

[Methane Alert and Response System](#) (MARS)

MARS, launched at COP27 in 2022, is the first public, global satellite-based detection and notification system for very large methane emissions. It integrates data from over a dozen satellite instruments, using advanced artificial intelligence to rapidly identify emission events. Once verified, MARS alerts governments and companies, enabling timely mitigation responses. While initially focused on the oil and gas sector, MARS is expanding its detection capabilities to include emissions from coal and waste. By leveraging UNEP's institutional reach and scientific networks, MARS enhances IMEO's capacity to support real-time methane mitigation and advance the goals of the Global Methane Pledge.

[Fossil Fuel Regulatory Programme](#) (FFRP)

The FFRP is mandated to provide developing countries with tailored solutions for capacity development, regulatory frameworks, and compliance with existing frameworks. The CCAC and the Clean Air Task Force (CATF) implement projects focused on methane abatement policies and regulations, following a rigorous assessment, approval, and monitoring process. Projects are developed based on requests from national governments, as funding is not provided directly to private sector actors in the fossil fuel sector. The FFRP is funded by the CCAC Trust Fund and contributions from donor governments and philanthropic organisations.

MDBs are important actors on the international stage, providing finance and technical assistance for methane abatement projects. Their resources and expertise are crucial for funding and implementing projects, enhancing credibility, and attracting investors. Examples include (see Box 2 for details on initiatives):

- The World Bank plays a significant role through financing and methane abatement partnerships. Its methane reduction strategy includes the [Global Flaring and Methane Reduction Partnership](#) (GFMR), the [Zero Routine Flaring by 2030](#) (ZRF) Initiative, and the [Global Gas Flaring Reduction Partnership](#) (GGFR).
- The European Bank for Reconstruction and Development (EBRD) has funded projects for methane abatement in countries such as [Uzbekistan](#) and [Egypt](#).
- The European Investment Bank (EIB) contributes to the GMP by offering support (financing and advisory services) to public and private actors implementing methane emissions reductions in the agriculture, solid waste management and wastewater sectors¹².

Box 2: World Bank initiatives

[Global Gas Flaring Reduction Partnership](#) (GGFR)

The GGFR is a public-private partnership that aims to support the petroleum industry and national governments in their efforts to reduce the flaring of gas. It complements ongoing efforts by mobilising the petroleum industry, national governments, and development agencies in joint actions. The World Bank is strengthening the knowledge base on gas flaring, sharing best practices, developing standards and identifying countries where gas flaring reduction is possible in cooperation with industry and national governments. The GGFR aims to overcome the barriers that hinder investment in flaring reduction by improving legal frameworks, enhancing international market access for gas, providing

¹² EIB (2021). EIB will contribute to objectives of Global Methane Pledge. <https://www.eib.org/en/press/news/eib-will-contribute-to-objectives-of-global-methane-pledge>

technical assistance, developing financing mechanisms, disseminating information, and promoting local small-scale gas use.

Among its participating partners are the governments of Algeria and Angola, as well as Sonatrach (the state-owned oil company of Algeria).

[Global Flaring and Methane Reduction Partnership](#) (GFMR)

Building on the earlier GGFR¹³, the GFMR is a multi-donor trust fund that unites national governments, oil and gas companies and development institutions under a common goal: ending routine gas flaring and cutting methane emissions to near zero by 2030. It operates as a multi-donor trust fund that pools resources from governments, international organisations, and private sector companies. The goal is to reduce methane emissions from oil and gas operations to near-zero levels by 2030, focusing on increasing the productive use of associated gas that would otherwise be flared or vented. The initiative also provides funding, technical expertise, policy advice, and institutional capacity-building support to partner countries. In practice, the GFMR now operates in over a dozen oil-producing countries, together accounting for roughly one-quarter of the sector's methane emissions worldwide. Participating governments and state-owned oil companies receiving GFMR assistance commit to applying best-available industry standards and operational practices, ensuring that flaring and leaks are systematically addressed as part of long-term programmes.

[Zero Routine Flaring by 2030](#) (ZRF)

The ZRF initiative¹⁴ was launched in 2015. This voluntary agreement invites oil-producing nations and energy companies to pledge the elimination of routine flaring of associated gas by 2030. Under ZRF, endorsing governments and firms commit to implementing no-flaring policies for new oil fields, ending routine flaring at existing fields, and reporting annually on their flaring volumes and reduction progress. By early 2024, over 100 national oil companies, private producers and governments had joined ZRF, signalling a broad international consensus that routine flaring would be phased out. Endorsers cite benefits such as better hydrocarbon resource management and international recognition for environmental leadership. Overall, ZRF operates as a coalition-based pledge, i.e. it reinforces regulatory standards by creating a *de facto* global norm against routine flaring and by encouraging signatories to align their practices and regulations with the Paris Agreement climate goals.

2.2 European level

EU institutions, including the European Commission, the European Parliament, and the Council of the European Union, drive EU climate and energy policies, lead international climate diplomacy (e.g. GMP), and manage funding instruments. These include the [Neighbourhood, Development and International Cooperation Instrument](#) (NDICI), which supports climate and environmental programmes in partner countries; the [Innovation Fund](#), which can help to finance innovative low-carbon projects, including methane reduction technologies. EU institutions' interests include achieving EU climate goals, ensuring energy security, and promoting EU environmental standards internationally. Current initiatives involve implementing the [Methane Regulation](#) and the [Methane Abatement Partnership Roadmap](#).

Box 3: European level initiatives

[Methane Regulation](#)

The Methane Regulation (Regulation (EU) 2024/1787) creates binding rules for monitoring, reporting, and reducing methane emissions in the EU's oil, gas, and coal industries, as well as throughout import supply chains. It requires that operators undertake regular leak detection and repair (LDAR) surveys and prohibit routine venting and flaring, except under strict safety or technical circumstances. The

¹³ United Nations (UN) (n.d.). *Global Gas Flaring Reduction Partnership*. <https://sdgs.un.org/partnerships/global-gas-flaring-reduction-partnership>

¹⁴ World Bank Group (n.d.). *Global Initiative to Reduce Gas Flaring: Zero Routine Flaring by 2030*. <https://thedocs.worldbank.org/en/doc/984231518029901708-0110022018/original/ZRFInitiative.pdf>

Methane Regulation also requires operators to quantify their methane emissions at both the source and site levels, verified by independent third-party verifiers, and report them on an annual basis. It also addresses imports: as of January 2027, importers are required to prove to the authorities that the oil, gas, or coal they are importing into the EU meets the same monitoring and reporting standards set by the Methane Regulation, and they are also required to comply with a methane intensity standard by 2030.

Selected EU Member States such as Germany, Italy, and Spain, through their national ministries ([German Federal Ministry for Economic Affairs and Climate Action](#), [Italian Ministry of the Environment and Energy Security](#), [Spanish Ministry for Ecological Transition and the Demographic Challenge](#) (MITECO)) implement EU directives and engage in bilateral cooperation on methane abatement. Their interests include meeting climate targets, securing energy supply, and leveraging national expertise. Their historical and economic ties with Angola, Azerbaijan, and Algeria, respectively, are significant for potential partnerships.

Bilateral agencies within these Member States offer targeted support for methane abatement through development programmes, technical assistance, and knowledge transfer. Their interests include supporting development in partner countries and contributing to climate goals. Their involvement is significant, enabling tailored support based on country contexts and relationships.

Box 4: Bilateral agencies in selected Member States

[Deutsche Gesellschaft für Internationale Zusammenarbeit](#) (GIZ)

GIZ is Germany's leading development cooperation agency, actively addressing methane emissions through initiatives such as the [FELICITY project](#). Implemented in collaboration with the EIB and funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, FELICITY supported cities to prepare and implement climate-friendly urban infrastructure projects. The initiative focused on sectors such as energy, wastewater, transport, and waste. For instance, modern sewage treatment facilities were established at four sites in Ecuador and a waste processing plant was set up in Mexico, contributing to [reductions in methane emissions](#). Additionally, GIZ provides capacity development for municipal, regional, and national experts to prepare and implement climate-friendly urban infrastructure projects. The initiative prepares specific mitigation projects in cities that are eligible for funding, supporting the development of their technical, financial, and economic feasibility, as well as the management of environmental and social risks.

[Agenzia Italiana per la Cooperazione allo Sviluppo](#) (AICS)

AICS, Italy's Development Cooperation Agency, is committed to supporting sustainable development and environmental protection in partner countries, with a focus on reducing methane emissions. It funds and implements projects that address environmental challenges, including methane emissions, through capacity-building, policy support, and technical assistance. Through collaborating with local governments and international organisations, AICS designs and executes climate-related initiatives that contribute to global efforts to reduce GHG emissions and promote sustainable development practices.

[Agencia Española de Cooperación Internacional para el Desarrollo](#) (AECID)

AECID, Spain's Development Cooperation Agency, focuses on promoting sustainable development and environmental protection in developing countries, with an emphasis on reducing methane emissions. It supports projects to reduce methane emissions, particularly in the agriculture, waste management, and energy sectors. Through funding, technical assistance, and policy support, AECID collaborates with local governments, international organisations, and other stakeholders to design and implement climate change mitigation strategies, including methane abatement, to assist in achieving the United Nations (UN) Sustainable Development Goals (SDGs) by addressing climate change and reducing GHG emissions.

2.3 Other actors

Selected fossil fuel exporting countries such as Angola, Azerbaijan and Algeria manage the fossil fuel sector and infrastructure through their authorities and operators (e.g. [Sonangol](#), [SOCAR](#), [Sonatrach](#)). Their goals are to maximise revenue, ensure long-term viability, attract investment, and maintain market access. Partnerships offer opportunities for technology transfer and investment in emissions reduction.

Private finance institutions such as commercial banks, investment funds, and private equity firms provide capital for energy projects, increasingly considering environmental, social and governance (ESG) factors. Their goals are to generate financial returns, manage risk, and respond to climate change pressures. Methane abatement projects need to demonstrate economic benefits if they are to attract private investment.

NGOs and philanthropic organisations advocate for stronger methane policies, raise awareness, monitor emissions, and engage with stakeholders. Their goals are to reduce GHG emissions, improve air quality, and promote transparency, while providing capacity-building and training. They act as watchdogs and drive policy changes.

Box 5: Examples of NGOs and philanthropic organisations

[Clean Air Task Force](#) (CATF)

CATF is a global non-profit organisation dedicated to safeguarding the climate and public health. Recognising the urgent need to address methane emissions, CATF developed the [Country Methane Abatement Tool](#) (CoMAT), a free and customisable tool to help governments to estimate methane emissions from their oil and gas industries and develop comprehensive mitigation plans and policy strategies. CoMAT empowers officials to analyse data, build consensus, and design effective solutions to reduce methane pollution. By providing technical expertise and resources, CATF supports countries in their efforts to achieve significant reductions in methane emissions, contributing to global climate change mitigation goals.

[Environmental Defence Fund](#) (EDF)

EDF is a non-profit organisation committed to environmental protection and climate action. Recognising methane as a potent GHG with a significant impact on global warming, EDF has launched several initiatives to reduce methane emissions. It advocates for strong methane regulation and supports the development of policies to limit methane emissions, contributing to the reduction of short-term global warming and advancing climate goals.

[Global Methane Hub](#) (GMH)

GMH is a global network of scientists, experts, activists, policymakers, and philanthropists working towards methane mitigation by supporting governments, civil society, researchers, investors, and the private sector to develop and implement strategies for methane emissions reductions in the energy, agriculture, and waste sectors. It provides [data and research](#), as well as funding support through its [energy programme](#).

Research institutions are important actors for providing information and expertise to all actors working on methane abatement.

Box 6: Examples of research institutions

[World Resources Institute](#) (WRI)

WRI is a leading global research organisation that offers important data, analysis, and policy recommendations on methane emissions and mitigation strategies, particularly in the energy and agriculture sectors. WRI actively contributes to the development of methane mitigation strategies in fossil fuel operations, promoting solutions such as LDAR programmes and improved monitoring.

Through its publications and initiatives, WRI offers detailed analyses and accessible guidance to inform and support action by governments, operators, and international partners. It also focuses on methane reduction in agriculture, sharing expertise on innovative practices such as the use of methane-inhibiting feed additives and improved manure management.

[Stockholm Environment Institute](#) (SEI)

SEI supports global methane abatement through research, consultancy services, and capacity-building projects. Publications such as the [Global Methane Pledge Roadmap](#) describe practical measures that countries can take to minimise their emissions. It also offers assistance services such as life-cycle emissions analysis and capacity-building to assist governments and development partners in designing and implementing successful methane reduction programmes.

2.4 Stakeholder interactions

Analysis of the stakeholder landscape reveals a complex web of actors with diverse yet interconnected interests in methane abatement. The EU institutions are central to setting the policy direction and providing the overarching framework, while individual Member States have specific bilateral relationships and national expertise. Fossil fuel exporting countries and their operators are key to achieving actual emission reductions, but their engagement depends on balancing economic priorities with the need to adapt to a decarbonising global economy. International organisations and MDBs offer essential technical expertise and financial resources, while bilateral agencies can provide tailored, country-specific support. Finally, private finance institutions are crucial to scaling-up investments, while NGOs play a crucial role in advocating for ambitious action and ensuring accountability.

The success of operationalising methane abatement partnerships hinges on effectively navigating the interests and priorities of these diverse stakeholders. Implementation models must leverage the strengths and potential challenges associated with each group. For example, alignment between the EU's regulatory ambitions and the economic realities of fossil fuel producing countries is crucial. Similarly, attracting private investment requires demonstrating clear financial returns and mitigating investment risk. As a whole, the stakeholder landscape is characterised by interdependencies rather than hierarchies. The effective operationalisation of methane abatement partnerships thus requires not only technical cooperation but careful coordination of political, financial, and regulatory interests. Implementation models must be context-specific, include diverse actor types, and respond to varying capacities and motivations.

3. Possible implementation models

The urgent need to mitigate methane emissions has catalysed the formation of various international partnerships to operationalise reduction strategies. This chapter looks at the structural frameworks through which methane abatement partnerships can be implemented, focusing on both contractual models and leadership approaches. It identifies the practical mechanisms, stakeholder roles, and potential challenges and best practices inherent in each model.

This chapter identifies three possible models for implementing methane abatement partnerships. The first model involves **voluntary partnership agreements** (VPAs), which are bilateral cooperation frameworks between the EU and partner countries. These agreements are designed to support regulatory reform, build institutional capacity, and establish systems for verifying compliance with methane abatement measures such as LDAR, bans on routine flaring, and credible MRV systems. The second model is **bilateral agreements** (BAs) between the EU (or its Member States) and individual exporting countries. In a bilateral arrangement, the partners formally agree methane reduction targets and cooperation measures, such as technical assistance, financing or regulatory alignment, tailored to the specific needs and conditions of the partner country. The third model is **multi-partner agreements** (MPAs), which encompass broader coalitions involving multiple countries and stakeholders aiming to coordinate efforts and share best practices. Initiatives such as the GMI exemplify the potential of such collaborations to harmonise standards and amplify impact across borders.

In addition to the type of partnership model, this chapter examines different leadership approaches that could drive these initiatives. One scenario is a **European Commission-led** approach, where the European Commission coordinates methane partnership efforts on behalf of Member States. In this top-down model, the Commission would take the lead in negotiating agreements, setting programme objectives, and mobilising EU-wide resources, providing a unified European stance. Another possibility is a **Member State-led** approach, which relies on one or more Member States to manage the partnership. Here, a Member State (or a group of Member States) might leverage its bilateral ties or regional influence to forge agreements with producer countries, with the EU institutions playing a supporting or aligning role. A further approach is leadership by an international body, for example, a **World Bank-led** initiative. In this case, the World Bank or another global institution would convene and oversee methane abatement partnerships, bringing in its financial expertise and acting as a neutral broker. The EU and its Member States would participate as key partners and funders, but the overall programme would be anchored in a broader multilateral context.

Each partnership model and leadership style is analysed to understand how it might function in practice and what it would require. The analysis highlights the advantages and disadvantages of each approach, providing an understanding of the pathways through which the EU and fossil fuel exporting countries can collaborate to curb methane emissions.

3.1 Voluntary partnership agreements (VPAs)

VPAs have emerged as a strategic governance tool to facilitate structured cooperation on methane abatement between the EU and fossil fuel exporting countries. VPAs focus on the joint development of legally binding frameworks that promote regulatory reform, capacity-building, and institutional strengthening. They can serve as a platform to align national mitigation efforts with international best practices by establishing mutually agreed commitments, including MRV protocols, LDAR standards, and the gradual phase-out of routine venting and flaring. By fostering trust, technical cooperation, and transparency, VPAs create enabling environments for climate finance, private sector investment, and long-term emissions reduction. This section explores how VPAs can be effectively designed and implemented to reduce methane emissions, drawing lessons from existing VPA models while adapting to the

fossil fuel context.

3.1.1 Overview of VPAs

Originally developed in the context of forest law enforcement and governance, VPAs have proven adaptable to a variety of policy domains where legal, institutional, and technical reforms are required to address transboundary environmental challenges. In the context of methane abatement, VPAs offer a structured approach to supporting partner countries, primarily fossil fuel exporters, to enhance their regulatory, institutional, and operational capacity to monitor, reduce, and minimise methane emissions from key sectors such as oil and gas¹⁵.

The strength of the VPA model lies in its dual character as both a legal instrument and a political partnership. It offers predictability and structure, while allowing space for country-specific tailoring. In the methane context, this means that each VPA can be adapted to the legal, institutional and technical reality of the partner country, while adhering to a core set of principles on environmental integrity, public participation, and accountability¹⁶. An additional advantage is the economic incentive it can provide: products or fuels covered under a VPA could benefit from 'fast-tracking' into the EU market. This preferential treatment would reduce the administrative burden and cost associated with due diligence procedures required for imports from non-VPA countries, reinforcing the commercial appeal of such an agreement.

VPAs are not designed to replace financial flows, but, rather, to enable and attract them. By providing a verifiable governance framework, including transparent MRV systems and legal guarantees on methane-related reforms, they help to de-risk investment and facilitate the flow of public and private finance into methane abatement. Donors, development finance institutions, and climate funds are more likely to channel resources into jurisdictions that have demonstrated a credible and enforceable commitment to emission reductions through a VPA.

A key innovation within VPAs is the use of legality assurance systems (LAS), originally developed in the forest sector, but adaptable to methane governance. Under such a system, the partner country, together with the EU, commits to defining legal methane-related activity (e.g. mandatory LDAR practices, flaring limits), setting up institutional mechanisms to monitor compliance, and to ensure reporting transparently on implementation. The EU, in turn, provides technical assistance, capacity-building, and, in some cases, market incentives or enhanced cooperation benefits. This structured legal framework enhances both domestic accountability and international credibility¹⁷.

VPAs offer a platform for inclusive governance. The negotiation and implementation phases are typically accompanied by extensive stakeholder consultation, including with subnational authorities, industry, civil society, and independent experts. This approach is particularly relevant in methane governance, where local implementation (e.g. by oil field operators or regulators) is key to effective emissions control.

3.1.2 Experience with VPAs in the forestry sector

VPAs originated in the context of the EU's Forest Law Enforcement, Governance and Trade

¹⁵ CAN Europe & Milieu Consulting (2022). Report on extension of provisions under the Regulation on Methane Emissions in the Energy Sector Outside EU Borders. <https://caneurope.org/content/uploads/2022/10/Methane-Legal-Study-Report-1.pdf>

¹⁶ European Commission (n.d.). Voluntary partnership agreements on forest law enforcement, governance and trade. <https://eur-lex.europa.eu/EN/legal-content/summary/voluntary-partnership-agreements-on-forest-law-enforcement-governance-and-trade.html>

¹⁷ European Commission (2021). Fitness Check on Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market (the EU Timber Regulation) and on Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community (FLEGT Regulation) Accompanying the document Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52021SC0328>

(FLEGT) Action Plan as a mechanism to support timber-producing countries to strengthen forest governance and ensure that timber exported to the EU has been legally harvested. Established under Council Regulation (EC) 2173/2005¹⁸ (FLEGT Regulation), these agreements aim to combat illegal logging by requiring partner countries to implement an LAS capable of verifying compliance with national legislation governing forest management and timber production¹⁹.

To date, 15 countries have ratified or are negotiating VPAs with the EU, but the implementation record has been mixed. Only Indonesia has successfully established a functioning LAS and started issuing FLEGT licences. Other partner countries have progressed significantly in their implementation phases, but face institutional and technical hurdles before their systems become fully operational. The delay in reaching the licensing phase is attributed to a range of factors, including the technical complexity of setting up verification systems, the limited administrative capacity of partner countries, governance weaknesses, and, frequently, the need to reform or consolidate fragmented legal frameworks²⁰.

The 2021 European Commission Fitness Check evaluating the FLEGT Regulation and Regulation (EU) 995/2010 (Timber Regulation) highlighted persistent structural weaknesses. VPA negotiation and implementation are typically long and resource-intensive, often extending over a decade from initial dialogue to full licensing. The rigidity of the negotiated frameworks, once adopted, poses a challenge for adaptation to emerging circumstances. The limited uptake of licensing, coupled with difficulties faced by EU operators in exercising due diligence for non-licensed shipments from VPA countries, has created transparency bottlenecks and limited the legislation's effectiveness in curbing illegal timber flows²¹.

Even where licensing is operational, the VPA's ability to insulate the system from domestic political developments remains constrained. Legal reforms, institutional changes, and shifts in enforcement priorities within partner countries can undermine the integrity of the LAS or slow its application. In such cases, the EU's capacity to respond decisively remains limited, revealing an enforcement gap that could be relevant when adapting the VPA model to other domains such as methane abatement²².

3.1.3 Applying VPAs to methane abatement

VPAs provide a governance-based framework through which the EU can engage fossil fuel producing countries in structured, legally binding cooperation to reduce methane emissions. Their operationalisation requires the definition and implementation of national legal, institutional and technical measures that enable credible, transparent, and enforceable pathways for sustained methane mitigation. A methane VPA would serve not only as a vehicle for regulatory alignment and institutional reform, but also as an enabling instrument for climate finance, technology transfer and stakeholder participation.

In this context, a methane VPA would be **European Commission-led** and begin with a

¹⁸ Council Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community. <https://eur-lex.europa.eu/eli/reg/2005/2173/oj/eng>

¹⁹ European Commission (n.d.). EU rules against illegal logging. https://environment.ec.europa.eu/topics/forests/deforestation/eu-rules-against-illegal-logging_en

²⁰ European Commission (n.d.). Voluntary partnership agreements on forest law enforcement, governance and trade. <https://eur-lex.europa.eu/EN/legal-content/summary/voluntary-partnership-agreements-on-forest-law-enforcement-governance-and-trade.html>

²¹ European Commission (2021). Fitness Check on Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market (the EU Timber Regulation) and on Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community (FLEGT Regulation) Accompanying the document Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52021SC0328>

²² Ibid.

bilateral negotiation phase between the European Commission and a partner country, focused on developing a shared understanding of what constitutes ‘legal’ and ‘compliant’ methane-related practices. This would likely include the adoption of strengthened national regulations in the fossil fuel exporting country to enforce core abatement measures, such as restrictions or bans on routine venting and flaring, as well as robust MRV protocols. The scope of the agreement could specify timelines for regulatory alignment, capacity-building objectives, and the deployment of specific technologies across the value chain.

To ensure transparency and accountability, the agreement would establish a national implementation body in the partner country responsible for coordinating the various elements of the methane abatement strategy. This body would oversee operator compliance with methane-related obligations, ensure continuous data collection and reporting, and coordinate with third-party verifiers to validate emissions reductions. Crucially, the VPA would include provisions for independent verification of MRV data, while public disclosure of compliance records would require the development of robust institutional capacity at multiple levels. This includes strengthening regulatory authorities, equipping environmental inspectorates, and ensuring that domestic legal frameworks provide for sanctions, enforcement and remediation in cases of non-compliance. Technical assistance, training, and infrastructure support would be integrated into the cooperation framework, supported by EU funding and multilateral instruments.

While the VPA model provides a compelling governance template for methane abatement partnerships, its operationalisation faces a particular legal and institutional landscape. In forest governance, VPAs were foreseen as a central implementation instrument under the EU’s FLEGT framework²³, providing the European Commission with a clearly articulated mandate to pursue bilateral agreements focused on legality assurance and licensing. By contrast, the Methane Regulation does not explicitly envisage the use of VPAs or similar bilateral instruments with third countries. This does not necessarily exclude the possibility of adopting such a model, but may imply that further political guidance or legal grounding would be beneficial to support systematic deployment.

3.1.4 Advantages and limitations of VPAs

Adopting VPAs to curb methane emissions in the fossil fuel sector offers several compelling advantages compared to purely unilateral or company-led approaches.

- **Effective enforcement through cooperation:** VPAs leverage the enforcement capacity of partner countries themselves, rather than trying to enforce EU rules extraterritorially. By agreeing a national system of control and oversight, the burden of compliance is shared. The partner country’s authorities assume responsibility for monitoring and sanctioning their operators, which aligns with their sovereignty and often proves more effective in practice²⁴. This cooperative enforcement structure can achieve what EU import regulations alone might struggle with – continuous oversight of remote oil/gas fields by local inspectors empowered by local law. The result is a more comprehensive enforcement regime spanning production to point of export. However, effective enforcement does not end at the partner country’s border. As with other EU regulatory frameworks, responsibility for implementing and enforcing compliance with import-related standards lies with the Member States. Experiences with the Timber Regulation have shown that enforcement quality and capacity can vary considerably across the EU, with disparities in national capacity leading to inconsistent application of rules or even creating enforcement loopholes, with some countries becoming weak points in the system. To avoid similar pitfalls in methane governance, uniform enforcement standards across the Member States

²³ Council Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community. <https://eur-lex.europa.eu/eli/reg/2005/2173/oj/eng>

²⁴ CAN Europe & Milieu Consulting (2022). Report on extension of provisions under the Regulation on methane emissions in the energy sector outside EU borders. <https://caneurope.org/content/uploads/2022/10/Methane-Legal-Study-Report-1.pdf>

must be prioritised, alongside better coordination, communication, and data-sharing between competent authorities.

- Building regulatory capacity and governance: One of the benefits of the VPA approach is strengthening domestic governance in the partner country. Just as forest-sector VPAs led to improved forest law enforcement and transparency, a methane VPA would drive improvements in how a country regulates its oil and gas industry. It incentivises the partner government to update its regulations (modernising the framework for methane control) and improve institutional capacity (training staff, investing in monitoring technology). This leaves a lasting legacy beyond exports to the EU. For example, Guyana's forestry VPA helped to modernise its wood tracking systems and reinforced multi-actor governance structures²⁵
- Comprehensive coverage and avoiding fragmentation: Unlike purely voluntary industry initiatives, a VPA has the advantage of covering an entire sector within a country, creating a level playing field. All major operators must comply, avoiding a situation where only the 'good' actors reduce emissions while others continue as usual. The agreement can also address all major emission sources, from production through processing and transport, with a unified approach rather than piecemeal measures.

Despite their potential, VPAs are not without their limitations.

- Lengthy negotiation and implementation timeline: VPAs are complex and can take years from inception to full operation. The experience with FLEGT VPAs is instructive: many took 5–10 years to negotiate and implement the licensing systems²⁶. A methane VPA would need mechanisms to expedite progress (perhaps setting interim targets or fast-track measures). Nonetheless, the inherent need for legal reforms, capacity-building and consensus-building means that results will not be immediate.
- Political will and sovereignty concerns: A VPA relies on the partner country's willingness to cooperate and undertake reforms. If the political leadership or powerful domestic interests (e.g. national oil company) are opposed to stringent methane controls, negotiations could stall or the agreement could be undermined in implementation. There may also be sensitivities about sovereignty – some countries could view EU involvement in their oil and gas governance as intrusive.

VPAs represent a collaborative pathway for the EU to extend its climate action beyond its borders effectively and respectfully. By mirroring the structure of past VPAs, tailored to methane emissions, the EU and its partner countries can jointly tackle one of the most potent GHGs leaking from the fossil fuel industry. Risks should be carefully considered and mitigation strategies put in place from the start of any VPA.

3.2 Bilateral agreements (BAs)

Bilateral cooperation plays a key role in international relations, especially when two actors seek to align shared priorities or coordinate policy in areas of mutual interest. One of the most structured tools for this purpose is the BA.

²⁵ European Commission (n.d.). Guyana-EU FLEGT VPA. <https://euflegt.gov.gy/>

²⁶ European Commission (n.d.). Voluntary partnership agreements on forest law enforcement, governance and trade. <https://eur-lex.europa.eu/EN/legal-content/summary/voluntary-partnership-agreements-on-forest-law-enforcement-governance-and-trade.html>

3.2.1 Overview of BAs

BAs establish a formal, contract-based framework for cooperation between two actors, typically involving national governments. These agreements allow the contractual partners to jointly define objectives, create legally binding commitments, and clarify the roles and responsibilities of each party²⁷.

Often, the process begins with a Memorandum of Understanding (MoU), a non-binding document that outlines the parties' mutual understanding and signals political, strategic, or economic intent²⁸. Although not legally enforceable, an MoU serves as a foundation for future negotiations, as its terms often form the basis of the binding commitments included in the final BA²⁹.

In the absence of BAs and MoUs specifically focused on methane abatement partnerships, existing agreements in the energy sector can usefully be examined. These agreements can serve as models for implementing future methane abatement partnerships, particularly by revealing how responsibilities, monitoring mechanisms, and compliance obligations are framed between the parties.

3.2.2 Experience with BAs and MoUs in the energy sector

The EU Energy Deals Tracker³⁰ highlights numerous agreements – both BAs and MoUs – between the EU or its Member States and third-country energy exporters. These agreements primarily establish a structured legal framework for partnerships related to the supply of fossil gas to EU Member States. These contracts are typically complex, individually negotiated instruments that establish long-term cooperation between a gas exporting and a gas importing party. They are designed to allocate risk, secure financing for infrastructure, and guarantee supply stability³¹.

Interviews with stakeholders confirm the relevance of adapting bilateral cooperation frameworks to the methane context. According to stakeholders, bilateral partnerships are most successful when built on a long-term, institution-centred approach where partner governments co-develop domestic methane strategies and implementation roadmaps³². In this model, a BA would not only formalise high-level objectives but also serve as an anchor for incremental, nationally owned reforms, including regulatory updates, investment in domestic monitoring systems, and piloting abatement technologies.

3.2.3 Applying BAs to methane abatement

The legal structure of BAs is built around key elements such as detailed pricing formulas, volume obligations (often through take-or-pay clauses), delivery terms, and robust dispute resolution mechanisms, most commonly arbitration. The contracts also incorporate clauses on contract renegotiation, force majeure, and termination, all of which are crucial for maintaining long-term legal and commercial balance.

These structural components might be relevant for the development of methane abatement partnerships. In practice, a BA for a methane abatement partnership could include:

²⁷ Hayes, A. (2024). Bilateral Contract: Definition, How it Works, and Example. <https://www.investopedia.com/terms/b/bilateral-contract.asp>

²⁸ Suhardin, Y. and Saida Flora, H. (2021). The legal strength of the Memorandum of Understanding as a cooperation framework in an agreement. <https://ijbel.com/wp-content/uploads/2021/04/IJBEL24-562.pdf>

²⁹ Ibid.

³⁰ Dennison, S., Kardas, S., Piaskowska, G. and Zerka, P. (2024). EU Energy Deals Tracker. <https://ecfr.eu/special/energy-deals-tracker/>

³¹ Ason, A. (2022). International gas contracts. https://www.oxfordenergy.org/wpcms/wp-content/uploads/2022/11/International-Gas-Contracts.pdf?utm_source=chatgpt.com

³² Interview with international research institute.

- (a) At the outset, the parties would set clear and mutually agreed **targets for methane reduction**, tailored to the specific circumstances and capabilities of the partner country. This would include establishing quantified methane reduction goals in the energy sector and ensuring alignment with broader international climate commitments.
- (b) The agreement would provide for **tailored methane mitigation measures**. These measures would involve identifying and deploying suitable abatement technologies and practices such as leak detection, supporting regulatory reforms and fiscal incentives, and developing joint implementation roadmaps with measurable milestones and deadlines.
- (c) Effective governance is essential to coordinate and sustain cooperation. The agreement would therefore establish **joint coordination bodies**, such as steering committees or technical working groups, to oversee implementation, monitor progress, and ensure alignment with agreed objectives.
- (d) The agreement should regulate the **roles and responsibilities of the different parties**. In such models, one of the parties would typically act as a leader, providing financial support, policy expertise, and alignment with the BA's objectives. The other would be the primary beneficiary of the BA, responsible for domestic implementation through its national policies and legislative measures. Industry actors, such as fossil fuel companies, would be expected to invest in mitigation technologies, comply with the BA's regulatory requirements, and report emissions data. Civil society organisations and NGOs could support transparency and monitoring, and facilitate community engagement.
- (e) A further key element could be a commitment by one or more Member States to purchase low-methane fossil gas from the producer country. Such a **purchase obligation or preference** could serve as a powerful incentive for methane abatement by creating a guaranteed market for cleaner gas and signalling long-term demand. This arrangement would likely require the exporting partner to meet specific methane intensity thresholds across its gas value chain. To compensate for the potential additional costs of meeting these standards (e.g. leak detection systems or flare capture infrastructure), the importing Member State(s) could offer a price premium or tie the gas purchase to complementary financial or technical support under the partnership.
- (f) Accurate and transparent tracking of progress is critical to the credibility and effectiveness of the BA. Rather than creating a new MRV system from scratch, the agreement should build on existing frameworks such as the OGMP 2.0 and incorporate compliance mechanisms aligned with the Methane Regulation. This system would help to quantify methane emissions and monitor mitigation outcomes.
- (g) A robust **dispute resolution framework** is essential for the credibility and enforceability of methane abatement partnerships. Drawing on models from long-term energy contracts, such frameworks should ensure that disagreements over monitoring results, compliance failures, or interpretation of technical obligations can be resolved efficiently and impartially.

Member State-led BAs

BAs typically involve two countries as contracting parties. Consequently, an effective leadership approach for advancing this initiative would involve one or more Member States taking the lead in managing and coordinating the partnership. Under this model, the leading Member State would be responsible for setting the strategic direction, facilitating cooperation with the counterparty, and ensuring alignment with EU and international frameworks and methane reduction goals.

The EU Energy Deals Tracker³³ shows that many Member States have already concluded multiple energy agreements with third countries. These existing agreements offer a valuable opportunity to embed methane abatement objectives, either by incorporating dedicated methane reduction targets or by establishing mechanisms for technical collaboration and monitoring. By leveraging these agreements, a leading Member State could not only advance the partnership's aims but strengthen political buy-in and demonstrate international commitment to tackling methane emissions.

It is essential Member States establish a solid domestic framework before entering into any BA. In line with the objectives of the Methane Regulation and the GMP, this should include the development of national action plans or strategies that set out specific mitigation measures, define clear timelines, and allocate the necessary resources for implementation. It should also involve committing public funding to the research and development of methane abatement and measurement technologies, as well as supporting verifiable mitigation projects through grants, targeted financing, or other incentives³⁴. These preparatory steps are critical to ensure that the objectives and commitments set out in an MoU or BA can be linked to the national methane mitigation and funding framework.

European Commission-led BAs

Reducing methane emissions is a strategic priority for the EU as part of its ambitious climate goals³⁵. An alternative leadership approach would involve the European Commission acting as the leader of a BA. As demonstrated by the EU Energy Deals Tracker, this model is already implemented in practice, with the EU itself concluding agreements directly with third countries that export energy. For example, the strategic energy partnership between the EU and Azerbaijan illustrates the EU's capacity to engage effectively with fossil fuel exporting nations³⁶.

The MoU in that case is not limited to security of supply, but incorporates elements directly relevant to the EU's climate and environmental priorities. Both parties acknowledge the need to make the fossil gas supply chain more efficient and climate-friendly, explicitly referencing the importance of reducing methane emissions. The agreement supports the creation of schemes to collect gas that would otherwise be vented, flared or leaked into the atmosphere. The MoU also highlights Azerbaijan's potential accession to the GMP and notes that cooperation with the EU will be instrumental in advancing this process. In parallel, the MoU reflects a shared ambition to accelerate the deployment of renewable energy infrastructure, particularly in offshore generation, which is an area of untapped potential in Azerbaijan.

The strategic energy partnership between the EU and Algeria demonstrates the EU's ability to strengthen ties with key fossil fuel suppliers while advancing its broader energy objectives. Established through a high-level political dialogue in 2015, the cooperation spans fossil gas, electricity, renewable energy, and energy efficiency³⁷. In the latest high-level dialogue in October 2023, both sides reaffirmed their commitment to deepening this partnership, with a particular focus on reducing methane emissions across the gas value chain³⁸. This marks a key step towards aligning the partnership with the EU's Methane Strategy³⁹ and the GMP.

³³ European Council of Foreign Relations (n.d.). EU Energy Deals Tracker. <https://ecfr.eu/special/energy-deals-tracker/>

³⁴ IEA (2022). The Global Methane Pledge. <https://www.iea.org/reports/global-methane-tracker-2022/the-global-methane-pledge>

³⁵ European Commission (2020). Commission adopts EU Methane Strategy. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1833

³⁶ European Commission (2022). EU and Azerbaijan enhance bilateral relations, including energy cooperation. https://enlargement.ec.europa.eu/news/eu-and-azerbaijan-enhance-bilateral-relations-including-energy-cooperation-2022-07-18_en

³⁷ European Commission (n.d.). EU-Algeria strategic partnership on energy. https://energy.ec.europa.eu/document/download/b8b9c9d2-d1dd-49a0-8b06-c995fd856039_en?filename=dialogue.pdf

³⁸ European Commission (2023). Joint press statement: EU-Algeria high-level energy dialogue. https://energy.ec.europa.eu/news/joint-press-statement-eu-algeria-high-level-energy-dialogue-2023-10-05_en

³⁹ European Commission (2020). Reducing greenhouse gas emissions: Commission adopts EU Methane Strategy as part of European Green Deal. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1833

Advantages and limitations of BAs

BAs offer several strategic advantages. Their primary strength lies in the high degree of customisation they afford, allowing each agreement to be designed in line with the partner country's emission profile, institutional capacity, and economic development stage. This approach ensures that political ownership is embedded from the outset, with both parties directly accountable for outcomes.

- **Flexibility and alignment:** BAs offer a tailored framework that can be adapted to the specific regulatory context, methane sources, and institutional readiness of each partner country, ensuring relevance and feasibility.
- **Political ownership and accountability:** BAs encourage direct accountability, as both parties co-develop and implement the roadmap, enhancing domestic buy-in and reducing the risk of passive compliance.
- **Targeted resource allocation:** The focused nature of bilateral engagement allows for precise targeting of support (technical, financial, regulatory) to the areas or sectors most in need.
- **Long-term relationship building:** BAs provide a structured channel for dialogue and collaboration, enabling deeper diplomatic ties and cooperation beyond methane, particularly in the energy and environmental domains.

BAs are not without their limitations. The intensive nature of bilateral negotiations, requiring significant diplomatic, legal, and technical engagement, makes it difficult to scale across multiple producer countries.

- **High transaction costs:** Negotiating and maintaining BAs can be resource-intensive, limiting their replicability across a broader range of countries.
- **Risk of weak commitments:** In cases of asymmetrical negotiating leverage, the resulting agreement may lack ambition or effective enforcement tools, particularly if the exporting country resists stringent conditions.
- **Legal and institutional complexity:** BAs must navigate compatibility with both national and international legal frameworks, as well as ensuring that mechanisms for compliance, monitoring and dispute resolution are in place.
- **Capacity gaps:** Partner countries may lack sufficient institutional infrastructure and technical expertise to implement robust MRV systems and enforce methane abatement actions effectively.

The BA model, supported by strong leadership from the European Commission or national governments, offers a pragmatic and effective solution for reducing methane emissions in fossil fuel exporting countries. It enables the negotiation of tailored targets and measures, but its success relies on a thorough understanding of the local political, economic, and institutional context. Existing experiences, such as the EU's energy partnerships with Azerbaijan and Algeria, demonstrate that this approach is feasible and can be extended to other partners, thereby contributing to EU and global climate objectives. BAs can offer a structured, flexible, and politically grounded way of engaging partner countries in methane mitigation, but their effectiveness depends on the careful management of legal, political, social, economic, and technological dimensions.

3.3 Multi-partner agreements (MPAs)

Multi-stakeholder partnerships, often referred to as multi-partner or multi-donor initiatives, bring together governments, industry actors, financial institutions, civil society, and international organisations in joint efforts to address global challenges such as methane emissions. These models are rooted in the recognition that no single entity, whether public or private, possesses

the full range of capabilities, resources, or influence needed to tackle such complex and cross-cutting issues. The mitigation of methane emissions, in particular, requires coordinated action across jurisdictions, sectors and value chains, making partnership-based approaches particularly well suited here⁴⁰.

3.3.1 Overview of MPAs

Multi-stakeholder partnerships are designed to harness the comparative advantages of each participant: public authorities bring regulatory capacity, policy alignment and political legitimacy; private actors contribute technological innovation, operational expertise and capital investment; international organisations offer coordination platforms and normative frameworks; and NGOs play a key role in community engagement, environmental stewardship and accountability. The diversity of perspectives and resources within such coalitions creates a unique space for developing more innovative, context-sensitive, and scalable solutions to pressing environmental issues.

According to one stakeholder interviewed, multi-partner approaches can be particularly effective when built around country-driven implementation roadmaps that define priorities over multiple timeframes (short/medium/long-term)⁴¹. These roadmaps serve as a platform to align the diverse interests of stakeholders, facilitate domestic ownership, and coordinate financing flows. MPAs should not function as stand-alone international initiatives, but, rather, be closely linked to each partner country's national development and climate strategies.

3.3.2 Experience with MPAs in the energy sector

The World Bank⁴² increasingly recognises the importance of methane abatement in its broader climate action strategy. As part of its efforts to combat climate change and meet the targets outlined in the Paris Agreement⁴³, it has launched several multi-partner initiatives to address methane emissions, especially in the oil and gas, agriculture, and waste sectors. These initiatives are designed not only to reduce methane emissions but also to support economic development, improve health outcomes, and promote environmental sustainability (see section 2.1).

The World Bank uses a multi-faceted approach to implement its initiatives. Through the GFMR, it offers catalytic grants, technical assistance, policy and regulatory guidance, institutional support, and facilitates access to finance. ZRF relies on formalised commitments by governments and oil companies to eliminate routine and legacy flaring, monitored through transparent reporting frameworks. Governments are expected to ensure a conducive regulatory and investment environment, while oil companies commit to viable alternatives to flaring. The GGFR, by contrast, is set up as public-private partnership (see Box 2).

The EU's experience in brokering complex multi-actor partnerships, such as the Africa–EU Partnership⁴⁴, demonstrates its ability to coordinate Member States, partner governments, and a wide range of stakeholders, including civil society, development banks, youth organisations, and the private sector. This governance model could be readily adapted to support methane abatement goals.

A particularly promising initiative for a European Commission-led MPA is the development of a Strategic Methane Partnership with the Gulf Cooperation Council (GCC) countries. The 2022

⁴⁰ World Economic Forum (2024). How multi-stakeholder partnerships drive sustainable development.

<https://www.weforum.org/stories/2024/12/how-multi-stakeholder-partnerships-drive-sustainable-development/>

⁴¹ Interview with international organisation.

⁴² World Bank Group (n.d.). <https://www.worldbank.org/ext/en/home>

⁴³ United Nations Climate Change (UNCC) (n.d.). The Paris Agreement. <https://unfccc.int/process-and-meetings/the-paris-agreement>

⁴⁴ European Commission (n.d.). Africa-EU Partnership. https://international-partnerships.ec.europa.eu/policies/africa-eu-partnership_en

Joint Communication on a Strategic Partnership with the Gulf⁴⁵ outlines the EU's ambition to deepen cooperation on energy, climate, and environmental sustainability with Gulf partners, explicitly including methane abatement as part of this agenda. This multi-stakeholder platform could complement global initiatives such as the GMP and reinforce international leadership on upstream emissions mitigation.

3.3.3 Applying MPAs to methane abatement

World Bank-led initiatives

The World Bank already leads multiple multi-stakeholder initiatives for methane abatement. These initiatives are characterised by the use of multi-donor trust funds to coordinate funding and align contributions from public and private sources. In addition, the World Bank plays a central convening role, fostering collaboration between governments, industries, financial institutions, and civil society actors, while developing the knowledge base and capacity-building on methane emissions reduction.

European Commission-led initiatives

The EU is well placed to lead multi-partner methane abatement initiatives, especially in cooperation with fossil fuel exporting regions where emissions mitigation needs to be paired with incentives for investment and market access.

In such a European Commission-led MPA, groups of middle- and low-income fossil fuel producing countries could be brought together under a common cooperation framework, supported by political dialogue and concrete implementation roadmaps. These countries would collaborate to reduce methane emissions through shared commitments, technical assistance, and harmonised standards, while the EU and its Member States would act as institutional actors and financial enablers, offering coordination platforms, funding, and regulatory alignment to support implementation and ensure credible results.

Another possibility is for major energy importing Member States, such as France, Italy, Spain, Germany, and the Netherlands, to align their positions and formulate a unified strategy for methane reduction. Once this alignment is achieved, the European Commission would lead the negotiation of MPAs on behalf of all Member States. In this top-down approach, the Commission would set common targets, mobilise EU resources, and present a single coherent position in external relations⁴⁶.

Advantages and limitations of MPAs

MPAs for methane abatement offer several strategic advantages.

- Resource pooling and economies of scale: MPAs enable the mobilisation of blended finance, grants, concessional loans, and private capital, making it feasible to fund infrastructure upgrades, technological innovation, and regulatory reform on a broader scale than BAs typically allow.
- Cross-border coordination: Given that methane emissions are not confined by national boundaries, MPAs allow for coordinated action across jurisdictions and supply chains, addressing both upstream and downstream emission sources with greater coherence.
- Harmonisation of standards: MPAs promote convergence around best practices, technical standards, and measurement methodologies, helping to reduce fragmentation and facilitate international alignment on methane reduction.

⁴⁵ European Commission (2022). Joint Communication to the European Parliament and the Council. A strategic partnership with the Gulf.
<https://www.eeas.europa.eu/sites/default/files/documents/Joint%20Communication%20to%20the%20European%20Parliament%20and%20the%20Council%20-%20A%20Strategic%20Partnership%20with%20the%20Gulf.pdf>

⁴⁶ Interview with GIZ.

- Broad-based legitimacy: By including a wide range of stakeholders, MPAs increase transparency and public accountability, while giving voice to civil society and non-state actors who may otherwise be excluded from state-centric frameworks⁴⁷.
- Private sector catalysis: MPAs provide a trusted and centralised platform to define eligibility criteria for project finance and de-risk private investment, creating clearer pathways for public–private co-financing. The World Bank’s GFMR is a prominent example of this model in action⁴⁸.

MPAs also have limitations that must be actively managed.

- Coordination complexity: The involvement of multiple actors with differing agendas can create inertia, dilute focus, or slow decision-making processes. Tensions may arise around leadership roles, decision rights, or the distribution of responsibilities and resources.
- Lack of accuracy: MPAs can lose effectiveness if not guided by time-bound implementation plans, specific deliverables, and clear performance metrics. Without these elements, partnerships risk becoming platforms for dialogue rather than engines for measurable change⁴⁹.
- Financial sustainability: Securing sustained funding can be a challenge, especially once initial donor enthusiasm wanes. MPAs must be designed with long-term financing mechanisms and adaptive business models⁵⁰.
- Variable political commitment: The success of MPAs depends heavily on continued political will and high-level backing. Changes in leadership or shifts in policy priorities can undermine their continuity and ambition.

MPAs can be an effective policy implementation model for methane abatement. By aligning governments, companies and financing institutions, they can mobilise technical expertise and funding, establish industry-wide norms, and amplify the impact of national policies. Existing initiatives showcase the synergy between public and private roles in the energy sector, combining regulatory reform, finance and technology transfer.

⁴⁷ World Economic Forum (2024). How multi-stakeholder partnerships drive sustainable development.
<https://www.weforum.org/stories/2024/12/how-multi-stakeholder-partnerships-drive-sustainable-development/>

⁴⁸ Interview with international organisation.

⁴⁹ Interview with international research institute.

⁵⁰ World Economic Forum (2024). How multi-stakeholder partnerships drive sustainable development.
<https://www.weforum.org/stories/2024/12/how-multi-stakeholder-partnerships-drive-sustainable-development/>

4. Financial assessment – investor landscape

This chapter examines the financial dimension of methane abatement, including investment needs and the landscape of available financial and non-financial support. It maps the main donors and financial instruments (e.g. loans, grants, equity) and compares this supply of funding with the estimated costs of methane abatement to identify potential gaps and offer recommendations.

4.1 Understanding investment needs

Methane abatement in the oil and gas sector is a central pillar of global climate strategies, offering rapid and cost-effective GHG reductions. Methane abatement has been identified as one of the most immediate and economically viable measures to reduce upstream emissions. Beyond the 0.6 gigatonnes of CO₂ equivalent (GtCO₂e) annual reductions possible by 2030 under current commitments from the GMP, an additional 1.4 GtCO₂e per year could be eliminated with cost-neutral or very low-cost solutions, representing approximately 35% of all upstream methane emissions⁵¹. Producer countries, which account for the majority of methane emissions in the energy sector, face a complex investment landscape. Importer countries, which depend on fossil fuel supplies, have a strategic interest in supporting methane abatement to improve energy efficiency, meet climate commitments, and reduce pollution-related health impacts⁵². Mitigation measures range from improving monitoring and detection capabilities to deploying technologies that capture or reduce emissions from venting and flaring operations⁵³.

4.1.1 Overall cost context and return on investment

Estimates of the global investment needed for methane abatement in the fossil fuel sector differ depending on assumptions about emission scenarios, technology scope, fossil fuel prices, and infrastructure requirements. Even estimates from the same source can vary over time.

A 2023 IEA report⁵⁴ estimates that around USD 75 billion is required by 2030 to achieve emission reductions from active oil and gas operations under its 2050 Net Zero Emissions scenario. This can result in a 75% decrease of methane emissions by 2030, or a 15% decrease of energy-related GHG emissions. Of that USD 75 billion, some USD 55 billion is required in upstream oil and gas facilities and around USD 20 billion in downstream operations.

A 2024 study⁵⁵ extends the cost estimate by including the substantial investment needed in infrastructure to transport and process recovered methane, estimating a total investment requirement of USD 200 billion, of which USD 120 billion is infrastructure-specific. This highlights that methane abatement is not simply a matter of installing LDAR systems, but also demands capital-intensive pipelines, compressor stations, and processing facilities, especially in regions with dispersed or remote production sites. This scale of capital deployment will often necessitate coordinated action beyond individual oil and gas companies, involving

⁵¹ McKinsey & Company (2024). The true costs of methane abatement: A crucial step in oil and gas decarbonisation. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization#/>

⁵² IEA (2025). Global Methane Tracker 2025. <https://iea.blob.core.windows.net/assets/2c0cf2d5-3910-46bc-a271-1367edfed212/GlobalMethaneTracker2025.pdf>

⁵³ OGCI (2021). OGCI Position on Policies to Reduce Methane Emissions. https://www.ogci.com/wp-content/uploads/2023/04/OGCI_position_paper_Methane.pdf

⁵⁴ IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

⁵⁵ McKinsey & Company (2024). The true costs of methane abatement: A crucial step in oil and gas decarbonisation. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization#/>

governments, development finance institutions, and private investors alike.

According to a 2025 IEA report⁵⁶, roughly USD 260 billion is required by 2030 to reach a 75% reduction in total fossil fuel methane emissions. Around USD 175 billion of this estimate is in the oil and gas sector and USD 85 billion in the coal sector. Of the total USD 260 billion, around USD 215 billion would be new capital expenditure and around USD 45 billion would be operational expenditure. A significant share of this investment is linked to properly closing abandoned facilities, with just over USD 100 billion needed to monitor and plug abandoned wells with significant levels of emissions. This investment corresponds to less than 2% of the fossil fuel industry's net annual income, demonstrating that these investments are comparatively low within industry cash flows.

The European Commission's 2021 impact assessment of the Methane Regulation⁵⁷ provides further context on the significance of abatement costs. It demonstrates that while a smaller share of methane emissions can be abated at zero or negative cost in key exporting countries, a much greater share can be abated at low cost or below. More specifically, in terms of economic impacts, 33% of 2019 methane emissions in selected fossil fuel exporting countries⁵⁸ are abatable at zero or negative cost, rising to 98% at low cost, and 99% cost-effective from a societal and environmental standpoint. Total abatement costs in these countries amount to USD 2.6 billion, with net social and environmental benefits exceeding USD 110 billion⁵⁹. Corresponding estimates within the EU are that 43% of projected methane emissions in the oil, gas and coal sector can be abated at zero cost by 2030, 63% can be abated at less than low cost (EUR 18/CO₂e tonne) and 77% can be abated at a cost smaller than the social benefits (EUR 130/ CO₂e tonne). The estimated costs to EU companies by 2030 is in the range of EUR 93 to EUR 127 million, with socio-environmental benefits ranging between EUR 0.9 and EUR 2.6 billion⁶⁰. This higher cost in non-EU countries might reflect the fact that the EU does not produce much oil and gas domestically. Nevertheless, significant abatement can be achieved at low cost, making a strong case for investment in producer countries.

Investments in methane abatement not only represent a fairly small cost to industry and society more broadly, but can also bring a significant **return on investment**. The IEA reports that methane abatement in the oil and gas sector is one of the cheapest options for GHG emission reduction economy-wide. In addition, it can bring a return on investment of around USD 45 billion from the sale of the captured methane, making the cost of methane reductions lower than USD 5 per tonne of CO₂e by 2030. All abatement measures would be cost-effective at a price of around USD 20 per tonne of CO₂e⁶¹.

The sale of capture methane emissions would generate additional revenue to offset the potential investment costs, which are lower than the market value of the additional gas captured and sold. For example, around 30% of methane emissions from the fossil fuel sector could be avoided at no net costs, or at an 8% rate of return on investment over the lifetime of the abatement measures (based on fossil gas prices for 2017-2021). Coal mine methane emissions can also be reduced at low cost, with more than 10% of emissions abatable at no

⁵⁶ IEA (2025). Global Methane Tracker 2025. Overcoming barriers to abatement. <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>

⁵⁷ European Commission (2021). Impact Assessment Report Accompanying the Proposal for a Regulation of the European Parliament and of the Council on Methane Emissions Reduction in the Energy Sector and Amending Regulation (EU) 2019/942. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0459>

⁵⁸ Selected countries include: Russia, Saudi Arabia, US, Iraq, Norway (for oil exports); Russia, Norway, Algeria, Qatar, Nigeria, US (for fossil gas exports).

⁵⁹ European Commission (2021). Impact Assessment Report Accompanying The Proposal for a Regulation of the European Parliament and of the Council on Methane Emissions Reduction in the Energy Sector and Amending Regulation (EU) 2019/942, pp. 126-129. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0459>

⁶⁰ Ibid., pp.122-125.

⁶¹ IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

net cost (based on 2017-2021 energy prices and 8% return on investment rate)⁶².

4.1.2 Financial requirements of key mitigation measures

Methane abatement in the oil and gas sector comprises a portfolio of mitigation technologies and practices with distinct financial profiles.

- MRV: Investment in MRV systems encompasses satellite and ground-based methane detection technologies, sensor networks, data management platforms, and independent verification mechanisms. These are crucial for transparent emissions accounting and policy enforcement, yet many producer countries lack sufficient MRV infrastructure. Costs vary by technology and scale, but capacity-building and institutional strengthening often dominate upfront costs^{63,64}.
- LDAR: LDAR programmes involve systematic inspections using infrared cameras, drones, or sensor arrays to identify leaks, followed by rapid repair actions. These programmes are among the most cost-effective abatement options, often yielding near-term financial returns by preventing lost gas sales. Inspection frequency, site complexity, and workforce availability influence overall costs^{65,66}.
- Capture and reduction of venting and flaring emissions: Capturing methane from venting and flaring operations involves investment in technologies such as vapour recovery units, compression and reinjection systems, or onsite utilisation (e.g. gas-to-power). The capital intensity is higher than LDAR, particularly where pipeline infrastructure is lacking, requiring investment in midstream and downstream facilities. Many medium-sized flaring sites remain financially underserved, requiring bespoke financing solutions, often ranging from millions to tens of millions of USD per site⁶⁷.
- Infrastructure development: The largest portion of methane abatement investment relates to building or upgrading infrastructure to transport and commercialise recovered methane. This includes pipelines, compressor stations, gas processing plants, and market access facilities. The geographical distribution and fragmentation of production sites significantly influence infrastructure costs.⁶⁸
- Coal mine methane abatement: Approximately half of methane emissions from coal mining can be addressed through pre-mining degasification and ventilation methane oxidation, which are typically low-cost or revenue-neutral interventions, complementing oil and gas sector abatement⁶⁹.

The IEA estimates that over 40% of the possible emissions reductions by 2030 in a net zero emission scenario can be achieved through measures that generate net savings given the value of the captured gas. Measures such as leak detection, replacement of pneumatics and pumps, installation of recovery systems, leak detection and repair programmes require around

⁶² IEA, UNEP, CCAC (2023). The imperative of cutting methane from fossil fuels. <https://www.iea.org/reports/the-imperative-of-cutting-methane-from-fossil-fuels>

⁶³ IEA (2023). Global Methane Tracker 2023. https://iea.blob.core.windows.net/assets/48ea967f-ff56-40c6-a85d-29294357d1f1/GlobalMethaneTracker_Documentation.pdf

⁶⁴ OGCI (2021). OGCI Position on Policies to Reduce Methane Emissions. https://www.ogci.com/wp-content/uploads/2023/04/OGCI_position_paper_Methane.pdf

⁶⁵ McKinsey & Company (2024). The true costs of methane abatement: A crucial step in oil and gas decarbonisation. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization#/>

⁶⁶ Climate Policy Initiative (CPI) (2023). Global Landscape of Climate Finance 2023. <https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf>

⁶⁷ World Bank Group (2022). Financing solutions to reduce natural gas flaring and methane emissions. <https://openknowledge.worldbank.org/handle/10986/37177>

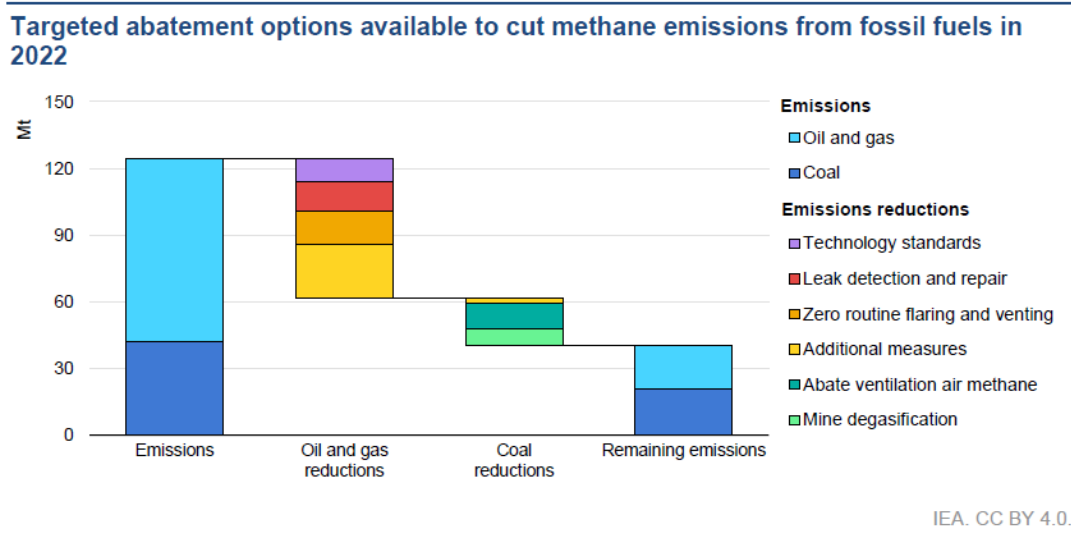
⁶⁸ McKinsey & Company (2024). The true costs of methane abatement: A crucial step in oil and gas decarbonisation. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization#/>

⁶⁹ IEA, UNEP, CCAC (2023). The imperative of cutting methane from fossil fuels. <https://www.iea.org/reports/the-imperative-of-cutting-methane-from-fossil-fuels>

10% of all methane abatement spending⁷⁰.

In terms of mitigation potential, zero routine flaring and venting, leak detection and additional measures have the highest potential to reduce methane emissions in the oil and gas sector, while abating ventilation air methane can have the biggest impact in the coal sector (see Figure 1).

Figure 1: Potential of different abatement options to reduce methane emissions



Source: IEA, UNEP, CCAC (2023). [The imperative of cutting methane from fossil fuels](#), p.12.

4.1.3 Cost of methane reduction in producer countries

Cost-effectiveness varies widely between producer countries due to heterogeneity in infrastructure age, regulatory environments, gas market conditions, and operational practices. In mature markets like the US and Canada, methane abatement technologies are more established and enforcement mechanisms are robust, often resulting in lower incremental costs. Conversely, in many developing and emerging economies, outdated infrastructure, lack of regulatory oversight, and limited access to capital increase the financial requirements and risk profiles of methane abatement investment^{71,72}.

Many producer countries suffer from institutional and technical capacity constraints that hamper the deployment of effective MRV systems, which are foundational to enforce methane reduction policies and attract private investment. Financing gaps also exist for medium-sized flares and dispersed venting sources that are economically viable but suffer from a lack of targeted funding mechanisms^{73,74}.

⁷⁰ IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

⁷¹ OECD (2024). Climate Adaptation Investment Framework. https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/11/climate-adaptation-investment-framework_30362f60/8686fc27-en.pdf

⁷² IEA (2023). Global Methane Tracker 2023. https://iea.blob.core.windows.net/assets/48ea967f-ff56-40c6-a85d-29294357d1f1/GlobalMethaneTracker_Documentation.pdf

⁷³ World Bank Group (2023). Global Gas Flaring Tracker Report. <https://thedocs.worldbank.org/en/doc/5d5c5c8b0f451b472e858ceb97624a18-0400072023/original/2023-Global-Gas-Flaring-Tracker-Report.pdf>

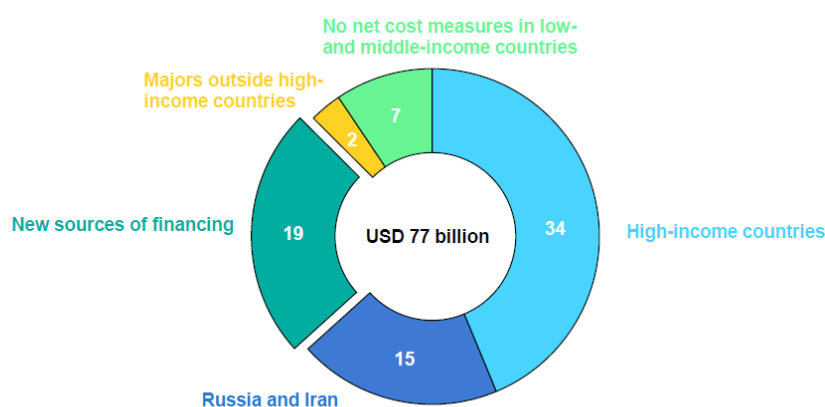
⁷⁴ CPI (2023). Global Landscape of Climate Finance 2023. <https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf>

According to the IEA⁷⁵, the financing gap for fossil fuel methane abatement in low- and middle-income countries is smaller than in higher income countries, estimated at around USD 60 billion (roughly USD 40 billion for active operations and USD 20 billion for abandoned facilities). According to other IEA estimates, the necessary methane abatement spending is around USD 34 billion in high-income countries, USD 27 billion in upper-middle income countries, USD 13 billion in lower-middle income countries, and USD 3 billion in low-income countries. Around USD 36 billion (of which USD 12 billion is in low- and lower-middle income countries) is required to address methane emissions from national oil companies in Eurasia and the Middle East. This is also where some of the biggest opportunities for methane abatement at no net cost can be deployed⁷⁶.

While a large share of the necessary investment in methane abatement might come from high-income countries, major oil and gas companies (majors⁷⁷) or through measures at no or low cost, some additional financing will be needed (see Figure 2). The financing gap is an estimated USD 15-20 billion for low- and middle-income countries⁷⁸.

Figure 2: Distribution of potential sources for methane abatement investments

Spending on oil and gas methane abatement to 2030 in the NZE Scenario



Note: Value for Russia and Iran includes net positive cost measures only.

IEA. CC BY 4.0.

Source: IEA (2023). *Financing reductions in oil and gas methane emissions*, p.12.

4.2 Mapping investment sources

Methane abatement measures can be supported through a variety of sources, including public financial institutions and development banks/MDBs, private sector investment, and government support from importing countries. These instruments can be either financial or non-financial, depending on the provider's action. Financial resources can comprise grants, debts, and equity.

Financial investment instruments are tools that allow the flow of financial resources towards

⁷⁵ IEA (2025). Global Methane Tracker 2025. Overcoming barriers to abatement. <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>

⁷⁶ IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

⁷⁷ The IEA refers to the following majors: bp, Chevron, ExxonMobil, Shell, TotalEnergies, ConocoPhillips and Eni.

⁷⁸ IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

methane abatement measures and projects. The literature does not consistently categorise financial sources that can be used for methane abatement initiatives, with the characteristics changing depending on the context and source. For example, the EDF report on sustainable finance instruments for methane abatement categorises debt instruments as green, social, and sustainable⁷⁹.

Looking at the broader picture and at studies such as the IEA's Global Methane Tracker⁸⁰, the OECD report on climate finance by developed countries⁸¹, and the Climate Policy Initiative (CPI)⁸², the main financial instruments that can be deployed for methane abatement initiative can be categorised into three groups: grants and subsidies, equity instruments, and debt.

According to the latest CPI report, most financial sources for methane abatement projects across all sectors is provided through debt, followed by equity and grants.

The sources can be divided into public and private sources. According to the CPI report, public sources come from publicly owned entities and public administrations. These include international organisations such as bilateral or multilateral agencies (e.g. UNEP), national or sub-national government entities, like ministries, and municipalities. For the purposes of this section, based on the data available, the public sources included here are:

- Government: Bilateral climate-related development finance reported to the OECD Development Assistance Committee's Creditor Reporting System, used to track official development assistance (ODA)⁸³ and other official flows (OOF)⁸⁴, and domestic financing through public budgets carried out by central, state, or local governments and their agencies.
- Multilateral development financial institutions (DFIs)/MDBs: DFIs chartered by multiple countries.
- State-owned entity (SOE): SOEs are entities partly or wholly owned by a government or government agency that deliver services in a particular sector⁸⁵.
- DFIs: Defined by the OECD as specialised development organisations that invest in private sector projects in low- and middle- income countries, they are usually controlled by national governments⁸⁶. These can be divided into bilateral DFIs (chartered by two countries) and national DFIs (a single country owns the institution and finance is directed domestically).
- State-owned finance institutions: Finance institutions are classified as state-owned if they are at least majority owned by a government or government agency. They differ from DFIs because they do not have a specific development mandate.
- Export credit agency (ECA): Entity through which governments provide officially supported export credits. ECAs can be government institutions or private companies that operate on behalf of governments⁸⁷.
- Multilateral climate funds: Includes commitments from DFIs' own resources only and excludes external resources that DFIs manage on behalf of third parties, governments'

⁷⁹ EDF (2024). Financing Methane Abatement: Report on Sustainable Finance Instruments. An introduction to sustainable finance for methane abatement.

⁸⁰ IEA (2025). Global Methane Tracker 2025, <https://www.iea.org/reports/global-methane-tracker-2025>

⁸¹ OECD (2024). Climate Finance Provided and Mobilised by Developed Countries in 2013-2022. Climate Finance and the USD 100 Billion Goal. <https://doi.org/10.1787/19150727-en>

⁸² CPI (2023). Landscape of Methane Abatement Finance 2023. <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>.

⁸³ The OECD defines ODA as 'government aid that promotes and specifically targets the economic development and welfare of developing countries'. <https://www.oecd.org/en/topics/official-development-assistance-oda.html?oecdcontrol-7b40ff0a52-chartId=e014987fc7>

⁸⁴ The OECD defines OOF as 'official sector transactions that do not meet official development assistance (ODA) criteria'. <https://www.oecd.org/en/data/indicators/other-official-flows-oof.html>

⁸⁵ A more extensive definition of SOE can be found at <https://www.climatepolicyinitiative.org/gca-africa-adaptation-finance/actors/state-owned-financial-institutions-soe-2/>

⁸⁶ Boiardi, P. and Stout, E. (2021). Towards harmonised management and measurement of impact: The experience of development finance institutions.

⁸⁷ OECD (n.d.). Export credits. <https://www.oecd.org/en/topics/export-credits.html>

contributions to DFIs or climate funds, bilateral climate fund commitments, and DFIs' contributions to projects⁸⁸.

- Public fund: Other types of funding provided by the government or SOEs.

Private sources refer to financial flows from privately owned companies, such as finance institutions, privately owned special purpose vehicles, NGOs, and individuals. On the basis of the data available, the private sources are:

- Institutional investors: described by the OECD as major collectors of savings and suppliers of funds to financial markets⁸⁹. This category includes investment funds, insurance companies and pension funds.
- Commercial finance institutions: privately owned finance institutions.
- Corporations.
- Funds.

Looking at overall investment in methane abatement initiatives across all sectors in 2021/2022, 70% came from private sources, accounting for roughly USD 9.64 billion out of the total USD 13.7 billion, while around USD 4 billion came from public investors⁹⁰. Annex 3 contains further information on the breakdown of investment by type and source across all methane abatement sectors.

Investment in the fossil fuels sector represented less than 1% of the tracked methane finance in 2021/2022, or around USD 10.6 million, mostly from public sources. This investment was considerably lower than the USD 0.1 billion in 2019/2020. This was mainly due to limitations in tracking methane finance in the sector (e.g. insufficient up-to-date and transparent data, lack of standard reporting, difficulty in distinguishing between methane abatement investment and business-as-usual expenditure). A lack of data meant that finance for coal mine methane abatement was not identified during that period⁹¹.

Finally, the financial instruments can be combined with non-financial support for capacity-building, technical assistance or project development through various existing initiatives on methane abatement (see chapter 2).

4.3 Closing the investment gap

Overall, the investment needs for methane abatement in the oil and gas sector are substantial but financially manageable within the industry's economic footprint. Cost-effective and even revenue-positive abatement measures constitute a significant share of the potential reductions, while infrastructure development demands coordinated and innovative financing approaches. The diversity of producer country contexts requires tailored financial instruments, capacity-building, and policy frameworks to unlock investment at scale. Continued international cooperation and leveraging public and private finance will be essential to bridge financing gaps and accelerate methane mitigation, thereby contributing meaningfully to global climate and air quality objectives.

The investments needed globally to reduce methane emissions and implement methane abatement measures are in the range of USD 75 to USD 260 billion⁹². CPI reports that only a

⁸⁸ Bloomberg New Energy Finance (BNEF).

⁸⁹ OECD (n.d.). Institutional investors statistics. https://www.oecd.org/en/publications/oecd-institutional-investors-statistics_2225207x.html

⁹⁰ CPI (2023). Landscape of methane abatement finance 2023. <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>. Note on the data: the remaining USD 0.05 billion is from unknown resources.

⁹¹ Ibid.

⁹² Based on: IEA (2025). Global Methane Tracker 2025. Overcoming barriers to abatement. <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>; McKinsey & Company (2024). The true costs of methane abatement: A crucial step in oil and gas decarbonisation. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization#>; IEA (2023). Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28. <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

small share of the total methane abatement investments go specifically to the energy sector and current levels are still below what is needed. For example, the methane abatement investments in the energy sector in 2021/2022 were USD 10.6 million⁹³. If the same amount is registered each year, methane abatement investments could rise to USD 106 million within 10 years by 2031/2032. Nevertheless, this would still fall below the estimated investment needed.

CPI reports that annual investment needs for methane abatement in the oil and gas sector are around USD 7.9 billion globally by 2030⁹⁴ (corresponding to around USD 79 billion over 10 years). The IEA reports varying estimates of the methane abatement financing gap in low- and middle-income countries, ranging from around USD 15-20 billion⁹⁵ to USD 60 billion⁹⁶.

Bridging the gap with current levels of investment requires addressing key challenges such as: lack of investors' awareness of investment opportunities; lack of viable projects; investors requiring larger ticket sizes; lack of policy support; and hesitance in financing projects in heavy emissions industries, such as oil and gas. The following priority areas are proposed to minimise these barriers and increase investment in methane abatement⁹⁷:

- Stringent policies or regulations to limit methane emissions should be implemented by DFIs and governments (together with fiscal policy tools).
- Methane abatement should be embedded in climate and investments strategies of governments, DFIs, private corporations and financial institutions.
- Understanding of financing opportunities for methane abatement projects across all types of actors (e.g. governments, private sector, DFIs) should be improved by determining specific investment opportunities by sector, region, or country, and using innovative financial instruments.
- Research and development funding and incentives for innovative and commercially scalable technologies (e.g. remote satellite sensing) should be created by governments and the private sector.
- The capacity for MRV of methane emissions should be strengthened to improve the transparency and accuracy of methane emission inventory by both public and private sector actors.

Funding from public sources (governments, DFIs) is crucial for leveraging additional private financing for methane abatement projects. In addition to direct investments and public-private partnerships, governments and public authorities can use fiscal policy tools such as emission fees (e.g. including methane in emission trading schemes) or tax credits to encourage companies to invest in methane abatement. International financial institutions (IFIs) could increase their grant facilities dedicated to methane abatement, while also using innovative instruments such as blended finance, first loss guarantees, green bonds, policy-based lending, or results-based financing to attract private investment⁹⁸. Governments can provide support for regulatory capacity-building to ensure adequate oversight and compliance, while DFIs can adopt policies that limit their investment in oil and gas projects while continuing to provide advice for methane abatement projects⁹⁹.

⁹³ Climate Policy Initiative (2023), *Landscape of Methane Abatement Finance 2023*, <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>.

⁹⁴ Ibid.

⁹⁵ International Energy Agency (IEA), Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28, June 2023, <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

⁹⁶ International Energy Agency (IEA), *Global Methane Tracker 2025, Overcoming barriers to abatement*, 2025, <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>.

⁹⁷ Climate Policy Initiative (2023), *How to Start Scaling Methane Abatement Finance*, Policy Brief, <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>.

⁹⁸ Climate Policy Initiative (2023), *How to Start Scaling Methane Abatement Finance*, Policy Brief, <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>.

⁹⁹ International Energy Agency (IEA), Financing reductions in oil and gas methane emissions. A World Energy Outlook Special Report on the Oil and Gas Industry and COP28, June 2023, <https://www.iea.org/reports/financing-reductions-in-oil-and-gas-methane-emissions>

World Bank initiatives could be important sources for such funding. For example, the GGFR provides concessional lending, technical assistance, and risk mitigation. The GGFR fund, launched at COP28 with an initial USD 250 million commitment, aims to catalyse billions of dollars in additional public and private investment for methane mitigation in developing countries by 2030. The ZRF exemplifies how multi-stakeholder partnerships can provide policy frameworks and finance to accelerate abatement in producer countries^{100,101}. The World Bank's Pilot Auction Facility for Methane and Climate Change Mitigation (PAF) was developed as a results-based payment mechanism to attract investment in projects reducing GHG emissions. The PAF set a floor price for future carbon credits in the form of a traceable put option to be complemented by auctions and paid once emission reductions were verified. It then held two auctions for methane emissions from landfill, animal waste and wastewater. Overall, USD 77.8 million has been contributed, committed to USD 40 million worth of projects^{102,103}.

Finally, private investors can include methane abatement in their investment strategies and lending practices. The oil and gas industry receives considerable funds from some of the largest investment and commercial banks each year. This means that there are opportunities for such investors to link financing with methane abatement goals, prioritise lending to methane abatement projects, or set minimum standards for lending based on MRV commitments¹⁰⁴. Some of the world's largest financial companies are already including methane management guidelines for their oil and gas sector clients¹⁰⁵. In addition, oil and gas companies can direct some of their revenues towards methane abatement, as most measures represent low costs and even bring a return on investment. Commercial banks and private capital funds (60 of the largest investment and commercial banks provided USD 780 billion to the oil and gas industry in 2016-2022) can also invest in methane abatement and/or tie securities to sustainability performance.

Financing for methane abatement must be linked to proper technical implementation, best practices and/or industry standards, and consistent and transparent reporting of emissions. At the same time, investments should be accompanied by policies that limit emissions and foster measures for emission abatement.

4.4 Financing under a potential partnership

Given the possible implementation of the Methane Abatement Partnership Roadmap and the various partnership models described here, different sources of financing can be considered. An important source of investment under any partnership model is private financing from the energy sector, which could be complemented by financing from commercial banks or institutional investors (e.g. pension funds) when transparent tracking of sustainability results can be ensured.

These investments could be complemented by support from MDBs/international financial institutions, and/or ongoing methane abatement initiatives that can provide both funding and technical assistance for capacity-building. For example, the IMEO or the FFRP could provide training to governments, while OGMP 2.0 can provide information about best practices in the private sector. The GFMR can provide funding to governments and state-owned companies

¹⁰⁰ World Bank Group (2023). Global Gas Flaring Tracker Report. <https://thedocs.worldbank.org/en/doc/5d5c5c8b0f451b472e858ceb97624a18-0400072023/original/2023-Global-Gas-Flaring-Tracker-Report.pdf>

¹⁰¹ OECD (2024). Climate Adaptation Investment Framework. https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/11/climate-adaptation-investment-framework_30362f60/8686fc27-en.pdf

¹⁰² World Bank (n.d.). Pilot Auction Facility. <https://fiftrustee.worldbank.org/en/about/unit/dfi/fiftrustee/fund-detail/paf>

¹⁰³ CPI (2023). How to Start Scaling Methane Abatement Finance. Policy Brief. <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>

¹⁰⁴ Ibid.

¹⁰⁵ IEA (2025). Global Methane Tracker 2025. Overcoming barriers to abatement. <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>

specifically on flaring and methane reduction solutions.

The EU and its Member States can provide technical support (through the EIB, bilateral agencies such as GIZ, or EU funds) to fossil fuel exporting countries. Peer-to-peer exchanges between government institutions can be used to develop the technical knowledge necessary to oversee compliance and track emissions under a potential partnership agreement, while building trust.

Two initiatives are particularly relevant in the context of a potential methane abatement partnership. Firstly, the GFMR is particularly pertinent, due to its targeted support to state-owned oil companies and its track record of engagement with key producer countries. Producing countries such as Algeria are already among its participants, ensuring an existing institutional pathway for aligning national abatement efforts with international standards and accessing funding for implementation. This can lower the administrative burden and increase political feasibility, particularly in contexts where upstream reform must be led by national actors.

Secondly, the EIB offers potential value, given its mandate to support EU climate objectives externally and its ability to fund both public and private sector initiatives. Its involvement in methane abatement spans key sectors beyond oil and gas, making it well-suited to support comprehensive, cross-sectoral implementation of methane reduction plans, especially where there are demonstrable co-benefits for development or for public health.

5. Case studies

This chapter presents three case studies covering selected Member States and gas-exporting countries. The case studies examine existing relations and initiatives between the countries, as well as the potential for applying some of the approaches examined here in bilateral contexts.

5.1 Spain - Algeria

Spain and Algeria have long enjoyed an extensive energy partnership, primarily centred on trade in fossil fuels, notably fossil gas. Spain's domestic gas production is negligible, consistently representing less than 0.5% of its annual gas consumption, making it heavily dependent on imports. Historically, Algeria has been Spain's leading gas supplier, delivering substantial volumes through pipelines and liquified natural gas (LNG) shipments¹⁰⁶. Until late 2021, Algerian gas reached Spain via two main pipelines: the Maghreb–Europe pipeline, running through Morocco, and the direct Medgaz subsea pipeline. Diplomatic tensions led to the closure of the Maghreb pipeline, which previously transported an average annual volume of approximately 10 billion cubic metres (bcm). In response, the Medgaz pipeline expanded in January 2022, increasing its capacity from 8 bcm to 10 bcm per year, a rise of 25%. Nevertheless, total pipeline capacity decreased by approximately 44%, significantly reducing Spain's pipeline imported gas from Algeria. The Medgaz pipeline is jointly owned by Sonatrach (50%) and Medina Partnership, a consortium comprising Naturgy and BlackRock (50%)¹⁰⁷.

Despite these disruptions, Algeria remained Spain's largest gas supplier in 2023, exporting 116,252 GWh, of which 94,842 GWh was via pipeline and 21,410 GWh as LNG. Additionally, Algeria exported 2.45 million tonnes of crude oil to Spain in the same year. This bilateral energy trade underscores mutual economic interdependence, with Algeria's Sonatrach heavily reliant on stable revenues from Spain, while Spain benefits from Algerian gas to support its energy security¹⁰⁸.

Recent years have seen fluctuations in diplomatic relations between the two countries, notably in 2022, when Algeria temporarily suspended a longstanding friendship treaty and curtailed trade activities in response to Spain's diplomatic stance on Western Sahara¹⁰⁹. By 2023–2024, signs of reconciliation emerged: Algeria reinstated its ambassador in Madrid and resumed economic dialogue, demonstrating an interest in restoring normal bilateral ties. This reconciliation occurred against a backdrop of Europe's intensified efforts to diversify away from Russian gas in the wake of Russia's war of aggression against Ukraine, positioning Algeria as a crucial supplier in the European gas market.

Spain has committed itself to reducing fossil fuel dependency through ambitious renewable energy expansion and decarbonisation policies. However, fossil gas (predominantly imported) remains a significant element of Spain's energy strategy during this transition period. Spain's extensive LNG infrastructure is Europe's largest fleet of LNG terminals, comprising six operational terminals, positioning it as a critical entry point for fossil gas imports into the EU¹¹⁰. Despite the considerable regasification capacity, utilisation has historically been low, averaging around 21% between 2012 and 2018, indicating potential for improved efficiency and

¹⁰⁶ Paule, R., Núñez, M., Morales, I., Martín, J. F., Manzano, M., Montiel, L., Ferraz, D., Llave, A. and González, A. (2024). Detección de fugas de metano en España y países importadores: Análisis y propuestas de mejora. Fundación Renovables. https://fundacionrenovables.org/wp-content/uploads/2024/07/Fugas-de-metano_VF.pdf

¹⁰⁷ Ibid.

¹⁰⁸ MITECO (2024). Spain's Integrated Energy and Climate Plan. https://www.miteco.gob.es/content/dam/miteco/es/energia/files-1/pniec-2023-2030/PNIEC_2024_240924.pdf

¹⁰⁹ Euronews (2022). Algeria suspends friendly treaty with Spain over Western Sahara stance. <https://www.euronews.com/2022/06/08/algeria-suspends-friendly-treaty-with-spain-over-western-sahara-stance>

¹¹⁰ IEA (2021). Spain 2021 Energy Policy Review. <https://iea.blob.core.windows.net/assets/2f405ae0-4617-4e16-884c-7956d1945f64/Spain2021.pdf>

expanded use.

Algeria's methane emissions are substantial, driven primarily by its large-scale oil and gas operations. Gas flaring in Algeria has increased considerably, from 7.6 bcm in 2012 to 8.6 bcm in 2022, even as oil production declined by nearly 25%. Algeria had the third-highest flaring intensity among major oil-producing countries in 2021, with 209 active flare sites recorded in 2022. In 2023, Algeria ranked as the world's fifth-largest gas flaring nation, burning approximately 9.3 bcm of gas, equivalent to about 1% of its Gross Domestic Product (GDP) in lost value¹¹¹.

Satellite data indicate that over 354 methane leaks have been detected from Algeria's oil and gas sector in recent years, with around 250 'super-emitter' leaks concentrated at Hassi R'Mel, Algeria's largest gas field, producing roughly 100 million m³ per day. Some leaks at this site were estimated to emit more than 40 tonnes of methane per hour¹¹².

In its nationally determined contribution (NDC) under the Paris Agreement, Algeria committed to reducing its GHG emissions by 7% unconditionally and by 22% conditionally by 2030 from a business-as-usual scenario¹¹³. A central component of Algeria's climate commitments is reducing flared gas volumes to less than 1% of the associated gas produced by 2030. While Algeria's NDC mentions methane explicitly only in the waste sector, Sonatrach, the national oil company, joined the World Bank's ZRF initiative in 2018 and, in mid-2024, formalised a corporate climate strategy explicitly targeting methane emission reductions, improved monitoring, and operational resilience¹¹⁴.

Despite Algeria's significant methane emissions, historically it has refrained from joining major international methane reduction initiatives, such as the GMP and the OGMP. However, growing international scrutiny and satellite detection of substantial methane leaks have elevated the issue's prominence within the country. Recognising the economic opportunities associated with capturing and commercialising otherwise flared or leaked gas, Algeria has begun to take significant steps towards methane abatement. Efforts include significant flare reduction projects by Sonatrach at major fields such as Hassi Messaoud and Tin Fouye Tabankort¹¹⁵.

Methane emissions represent about 5% of Spain's overall GHG output, primarily stemming from agriculture and waste rather than fossil fuel extraction. Nevertheless, Spain indirectly contributes to global methane emissions through its substantial imports of fossil fuels. In 2023, Spain imported a total of 396,712 GWh of fossil gas, of which 183,858 GWh (46%) originated from Africa, predominantly from Algeria (63% of African imports) and Nigeria (29%)¹¹⁶. Environmental groups in Spain have emphasised the urgent need for Spain to implement a national methane reduction plan that addresses emissions across its energy import supply chains, advocating for a targeted reduction of methane emissions by 45% by 2030, in line with Intergovernmental Panel on Climate Change (IPCC) recommendations¹¹⁷.

¹¹¹ Bernstein, A., Davis, M., Mitro, T. and Toledano, P. (2025). Igniting action to reduce gas flaring: Real opportunities. Real projects. Real results. Country Case Study: People's Democratic Republic of Algeria. Columbia Centre on Sustainable Development. <https://ccsi.columbia.edu/sites/ccsi.columbia.edu/files/content/docs/publications/CCSI-Capterio-Flaring-Case-Study-Algeria-June-2025.pdf>

¹¹² Ibid.

¹¹³ World Bank (2023). Global Methane and Flaring Regulations. Algeria. <https://flaringventingregulations.worldbank.org/algeria>

¹¹⁴ Ibid.

¹¹⁵ Bernstein, A., Davis, M., Mitro, T. and Toledano, P. (2025). Igniting action to reduce gas flaring: Real opportunities. Real projects. Real results. Country Case Study: People's Democratic Republic of Algeria. Columbia Centre on Sustainable Development. <https://ccsi.columbia.edu/sites/ccsi.columbia.edu/files/content/docs/publications/CCSI-Capterio-Flaring-Case-Study-Algeria-June-2025.pdf>

¹¹⁶ Fernández, S., Bonati, S. and Morales, I. (2025). Anuario del gas fósil en el Estado Español 2023-2024. <https://fundacionrenovables.org/wp-content/uploads/2025/06/El-gas-fosil-en-el-Estado-espanol-2023-2024.pdf>

¹¹⁷ Ecodes, Ecologistas en Acción, Fundación Renovables, Greenpeace, Mighty Earth (n.d.). For a national methane reduction plan. https://ecodes.org/images/que-hacemos/01.Cambio_Climatico/Incidencia_politicas/documentos/Plan_nacional_de_reduccion_de_emisiones_de_metano.pdf

In line with EU policy frameworks, Spain has formally endorsed the GMP, committing to helping to achieve a global 30% methane emission reduction by 2030. The latest revision of Spain's National Energy and Climate Plan (NECP 2023–2030) aligns with ambitious European climate objectives, highlighting Spain's role in mitigating methane emissions, particularly within its energy sector¹¹⁸. Spain's increasing attention to methane emissions extends internationally, reflecting broader recognition of the need for cooperative solutions across its energy import networks.

Internationally, emerging regulatory frameworks such as the upcoming Methane Regulation reinforce the urgency of Spain and Algeria collaborating to tackle methane emissions proactively. In October 2023, at a high-level EU–Algeria energy dialogue, Algeria explicitly agreed with the European Commission to promote methane recovery and commercialisation, aligning environmental benefits with economic incentives.

The current geopolitical, economic, and environmental context offers a strategic opportunity for Spain and Algeria to jointly lead ambitious methane reduction initiatives. Such a partnership promises substantial environmental benefits, strengthened economic cooperation, and enhanced geopolitical alignment, while also supporting Algeria to progressively meet future requirements under the Methane Regulation. The partnership would help to solidify Algeria's position as a crucial supplier for Europe and reinforce Spain's pivotal role in EU climate policy implementation. The following sections of this case study explore the regulatory, cooperative, and practical frameworks necessary to operationalise this Spain–Algeria methane emission reduction partnership effectively.

5.1.1 Legal and regulatory considerations

Regulatory environment in Spain

Spain's regulatory framework on methane emissions, particularly those related to fossil fuel production and imports, is significantly shaped by EU legislation. As an EU Member State, Spain must adhere strictly to EU regulations, notably the recently enacted Methane Regulation.

Led by MITECO, Spanish regulatory bodies are preparing the necessary procedures and administrative frameworks to ensure compliance with the Methane Regulation, ensuring that Spain can verify the methane footprint of gas arriving at its borders¹¹⁹. In parallel, Spain's domestic law, notably the Climate Change and Energy Transition Law of 2021, emphasises emission reductions across all GHGs¹²⁰.

Regulatory environment in Algeria

Algeria's domestic regulatory framework on methane emissions from oil and gas operations is evolving, with recent developments providing greater clarity and rigour, despite historical implementation challenges. Algeria first legally prohibited gas flaring in 1966, with more formal measures established by Law No. 05-07 in 2005, which set up regulatory bodies to enforce flaring and venting restrictions. Significant updates followed, with Law No. 19-13 of 2019 explicitly prohibiting routine flaring and venting except under specified conditions, imposing taxes on flared volumes, and defining responsibilities clearly between two national regulatory agencies: the Hydrocarbon Regulation Authority (ARH) and the National Agency for Valuation of Hydrocarbon Resources (ALNAFT)¹²¹.

Law No. 19-13 mandates that routine flaring during production and midstream activities must not exceed 1% of produced or transported volumes, with flaring allowed temporarily in cases

¹¹⁸ MITECO (2024). Spain's Integrated Energy and Climate Plan. https://www.miteco.gob.es/content/dam/miteco/es/energia/files-1/pniec-2023-2030/PNIEC_2024_240924.pdf

¹¹⁹ Interview with Ecodes.

¹²⁰ Law 7/2021, of 20 May, on climate change and energy transition. https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-8447

¹²¹ World Bank (2023). Global Methane and Flaring Regulations. Algeria. <https://flaringventingregulations.worldbank.org/algeria>

of infrastructure constraints, subject to regulatory approval¹²².

Sonatrach, Algeria's state-owned oil company, which is responsible for about 80% of oil and gas output, has established targets aligned with Algeria's NDC commitments to reduce flaring of associated gas to less than 1% by 2030. While, historically, enforcement has faced challenges due to infrastructure gaps and inadequate oversight, recent regulatory frameworks have strengthened responsibilities, particularly through ALNAFT and ARH's expanded mandates on environmental compliance and technical regulation¹²³.

Executive Decree 21-330 (2021) details the conditions under which flaring is permissible, specifying clear durations and volumes, and requiring explicit authorisation from ALNAFT (upstream) or ARH (midstream/downstream). It also imposes financial penalties for unauthorised flaring¹²⁴.

In addition, Algeria has begun to develop technical guidelines in cooperation with international partners. It works with the World Bank's GGFR on best practices and has cooperated with UNEP on methane emissions studies.

5.1.2 Proposed partnership design

Cooperation between Spain and Algeria on methane abatement would significantly benefit from being structured as an MPA rather than a conventional bilateral accord. While traditional bilateral frameworks such as VPAs offer clarity and structure, the specific geopolitical, regulatory, and operational context of Spain–Algeria energy relations suggests that a broader, multi-stakeholder coalition would provide greater flexibility, legitimacy, and resilience. MPAs enable coordinated methane action while allowing for differentiated roles across public authorities, private companies, international organisations, and civil society. In this case, the advantages of an MPA model are not only technical and financial, but political and strategic.

This collaborative model is especially compelling given the need to move beyond minimum regulatory compliance. While the EU Methane Regulation will introduce enforceable standards for imported fossil fuels, a bilateral partnership offers the opportunity to accelerate methane mitigation efforts through enhanced cooperation, capacity-building, and shared accountability. Rather than merely facilitating compliance, such a partnership could support deeper, systemic changes in monitoring, infrastructure, and operational practices, driving ambition beyond what is mandated under EU law. Producer countries such as Algeria will be directly affected, as they must ensure compliance with these requirements to maintain market access. This creates both an opportunity for proactive alignment and a diplomatic challenge in how that alignment is supported.

Diplomatic constraints and regulatory imperatives

The diplomatic environment is central to the choice of model. In the aftermath of a recent two-year diplomatic rift between Spain and Algeria, a model perceived as externally imposed or regulatory-heavy could prove politically difficult. According to one stakeholder, Spain is unlikely to adopt a confrontational stance in pressing Algeria to comply with the Methane Regulation, given the recent strain in bilateral relations¹²⁵. An MPA would enable Spain to function as a convenor and facilitator, rather than an enforcer, respecting Algerian sovereignty while ensuring regulatory alignment through incentives and joint frameworks.

A robust MPA would be co-led by Spain, the European Commission, and Algeria, with institutional participation from relevant ministries, Sonatrach, Spanish energy companies, and independent bodies such as the IMEO. Crucially, the agreement would include financing partners such as the World Bank and the EIB, with observer roles for civil society and

¹²² Ibid.

¹²³ World Bank (2023). Global Methane and Flaring Regulations. Algeria. <https://flaringventingregulations.worldbank.org/algeria>

¹²⁴ Ibid.

¹²⁵ Interview with Ecodes.

academia.

One of the most promising aspects of an MPA is its capacity to offer Algeria the regulatory and policy support essential to unlock the potential of existing legislation. Algerian law has long prohibited routine flaring and imposed financial penalties, yet enforcement remains limited¹²⁶. According to the literature, stronger implementation of Algeria's legal framework would have three key advantages:

1. Strengthen cost recovery and investor confidence in flare capture technologies.
2. Create domestic funding streams by recycling penalty revenues into mitigation projects.
3. Demonstrate credible domestic action, potentially reducing the extraterritorial charges that the EU might otherwise impose under its methane regulation regime.

According to one stakeholder, regulatory support must be sensitive to the local context and institutional realities¹²⁷. In its view, emission reduction efforts are most effective when they are shaped domestically, allowing national actors to define priorities and implementation pathways that reflect on-the-ground conditions. This perspective reinforces the importance of a partnership model that respects Algeria's sovereignty and fosters ownership, rather than imposing externally designed compliance frameworks.

A practical proposal would be for Algeria to develop a national integrated flaring roadmap, defining a stepwise plan for deploying capture technologies at priority sites. Spain and EU partners could assist with project implementation.

Sonatrach's leadership is essential. As a signatory to the ZRF, it has already pledged to reduce flaring to less than 1% of all gas extracted. These commitments, referenced in Algeria's NDC and reiterated in its third national communication to the United Nations Framework Convention on Climate Change (UNFCCC) in 2023, provide a strong political foundation for a methane-focused MPA¹²⁸.

Financing mechanisms and investment models

Mobilising the financial resources necessary for methane abatement in Algeria will be central to the success of the proposed MPA. While the costs of many abatement measures, particularly leak detection and flare capture, are relatively low or even revenue-generating, the challenge lies in overcoming Algeria's limited fiscal space and ensuring the availability of upfront capital for infrastructure upgrades and project development. An MPA would unlock access to blended finance, combining grants, concessional loans, and commercial capital. Several avenues are especially promising:

- World Bank GFMR: This offers catalytic funding, policy advice, and technical assistance tailored to the upstream oil and gas sector. Sonatrach's endorsement of the ZRF signals its alignment with GFMR objectives, making it a natural partner for pilot projects.
- EU NDICI: This has already channelled climate-related funding into North Africa and could be directed towards methane-specific objectives. Spain, in its role as a lead partner, could advocate for earmarked allocations within the EU's existing Algeria portfolio to support emission reduction infrastructure and capacity-building efforts.
- Private sector initiatives: While concessional finance and grants are important, the MPA must also engage the private sector by creating commercially viable investment

¹²⁶ Bernstein, A., Davis, M., Mitro, T. and Toledano, P. (2025). Igniting action to reduce gas flaring: Real opportunities. Real projects. Real results. Country Case Study: People's Democratic Republic of Algeria. Columbia Centre on Sustainable Development. <https://ccsi.columbia.edu/sites/ccsi.columbia.edu/files/content/docs/publications/CCSI-Capterio-Flaring-Case-Study-Algeria-June-2025.pdf>

¹²⁷ Interview with international research institute.

¹²⁸ UNFCCC (2023). Algeria. Third National Communication to the UNFCCC. https://unfccc.int/sites/default/files/resource/TCN_Alg%C3%A9rie%20VF%2022102023%20rev%207.pdf

models. One such approach is to establish a pricing mechanism whereby Spanish and European energy firms commit to paying a premium for methane-certified gas. This would reward low-emissions production and provide Sonatrach and its partners with a predictable revenue stream to offset capital costs associated with abatement technologies. This could be operationalised through contractual clauses in long-term purchase agreements or joint declarations of interest coordinated under the partnership framework. Moreover, market prioritisation mechanisms could also be explored, where gas produced and certified with verifiably low methane intensity could be prioritised for import contracts, transportation capacity, or market access in the EU. Although Europe's gas imports are currently shaped by company-level decisions, there is growing support for a more strategic EU-level import policy. This could include regulatory tools to grant preferential access to infrastructure or procurement opportunities for lower-methane gas. Similarly, methane performance could become a criterion in bilateral energy dialogues, influencing supply diversification strategies and reinforcing EU energy security while rewarding early movers on methane abatement. By explicitly favouring cleaner gas in procurement frameworks and long-term agreements, European buyers would create a powerful incentive for Algerian producers to accelerate investments in methane abatement.

Knowledge-sharing, monitoring and external validation

A hallmark of MPAs is their emphasis on transparency and learning. Spain could facilitate knowledge exchange by inviting Algerian experts to Spanish facilities and offering secondments or staff training on methane management. Likewise, pilot projects in Algeria, such as Repsol's existing site in Reggane Nord, could serve as demonstration platforms for technologies and practices¹²⁹.

The MPA offers a strategically sound, diplomatically viable, and operationally rich model for advancing methane reductions in Algeria's oil and gas sector. It reflects a pragmatic understanding of the regulatory environment, ensuring compliance without confrontation, and provides a platform for aligning finance, policy, and technology at scale. By anchoring its engagement in a broad-based coalition, Spain can de-risk its gas imports and contribute to global climate mitigation in a manner that is credible, inclusive, and results-oriented.

5.1.3 Opportunities and challenges

Implementing a Spain–Algeria methane abatement partnership presents a mix of opportunities and challenges, spanning political, technical, and financial domains. Success will depend on maximising the drivers and carefully mitigating the obstacles.

Opportunities

Despite bilateral tensions between Spain and Algeria, the EU remains a trusted interlocutor for Algiers, and energy has long been a cornerstone of Euro–Algerian cooperation. The 2013 MoU on a Strategic Energy Partnership provides a strong legal and political foundation for collaboration¹³⁰. More recently, the 2023 Joint Press Statement on the High-Level EU–Algeria Energy Dialogue reaffirmed the strategic importance of Algeria as a reliable supplier of fossil gas and recognised the shared interest in reducing methane emissions in the oil and gas sector¹³¹.

Significantly, both parties have agreed to work together to promote the recovery and commercialisation of methane that would otherwise be emitted into the atmosphere. This

¹²⁹ Repsol (2017). Repsol begins production at the Reggane project in Algeria. <https://www.repsol.com/es/sala-prensa/notas-prensa/2017/12/18/repsol-inicia-produccion-proyecto-reggane-argelia/index.cshtml>

¹³⁰ European Commission (2013). ENP Package – Algeria. https://ec.europa.eu/commission/presscorner/detail/en/memo_13_241

¹³¹ European Commission (2023). Joint press statement: EU – Algeria high-level energy dialogue. https://energy.ec.europa.eu/news/joint-press-statement-eu-algeria-high-level-energy-dialogue-2023-10-05_en

recognition provides an ideal entry point for an MPA, which can operationalise these joint objectives through coordinated investments, policy support, and monitoring mechanisms. The EU's role as facilitator could help to shield the Spain–Algeria relationship from bilateral sensitivities and broaden the scope of cooperation.

In 2023, Algeria exported USD 27.2 billion worth of petroleum gas, making it the seventh-largest exporter globally. With over USD 4.8 billion going to Spain and USD 14 billion going to Italy, EU countries collectively represent the overwhelming majority of Algeria's gas export destinations¹³².

This interdependence presents a powerful opportunity. Through a coordinated MPA, EU Member States, led by Spain and Italy, can align incentives and procurement policies to favour methane-abated gas. This could include long-term purchase agreements with environmental performance clauses, premium pricing for low-methane gas, or fast-tracked infrastructure investment. Such measures would create strong market signals to incentivise best-in-class production practices in Algeria, sending a clear message that EU markets will increasingly reward low-methane fossil fuels. These approaches would also help to de-risk investment in Algeria's methane reduction projects, encouraging faster deployment of mitigation technologies while maintaining Algeria's competitiveness as a key supplier to Europe.

Algeria would enter any prospective methane emissions reduction partnership with a solid foundation of existing policy commitments. Its adherence to international initiatives, such as those promoted by the World Bank, and the GHG reduction targets outlined in its NDC, demonstrate alignment with global climate goals. Domestically, recent reforms, including the 2019 hydrocarbons law, equip Algeria with the contractual and regulatory tools to attract investment in emissions-reducing infrastructure.

Overall, while political tensions and institutional barriers present real challenges to cooperation, there is a strong strategic and economic logic for a Spain–Algeria–EU methane partnership. An MPA provides the diplomatic flexibility, financial instruments, and policy alignment needed to turn shared goals into concrete outcomes.

Challenges

Perhaps the most immediate and complex challenge to the establishment of a methane partnership between Spain and Algeria is the recent deterioration in bilateral relations. Spain's ability to negotiate a direct BA with Algeria that touches on sensitive issues such as emissions monitoring or energy infrastructure reform may be constrained.

An MPA with shared leadership and multilateral legitimacy offers a constructive pathway to circumvent these sensitivities. It would enable Spain to engage indirectly, through EU institutions and international platforms, reducing the perception of undue pressure or interference in Algeria's domestic affairs.

Another challenge is aligning regulatory frameworks between the EU and Algeria. While Algeria's legal regime prohibits routine flaring and establishes financial penalties, these measures are seldom enforced. Institutional capacity limitations and weak regulatory enforcement have hindered progress, despite formal commitments. Although Algeria is a signatory to the ZRF and has committed to reducing flaring below 1%, bridging the gap between commitments and actual reductions will require significant investment, capacity-building, and technical support. An MPA should therefore be designed to integrate regulatory support, build institutional capacity, and avoid duplicating existing mandates¹³³.

¹³² Bernstein, A., Davis, M., Mitro, T. and Toledano, P. (2025). Igniting action to reduce gas flaring: Real opportunities. Real projects. Real results. Country Case Study: People's Democratic Republic of Algeria. Columbia Centre on Sustainable Development. <https://ccsi.columbia.edu/sites/ccsi.columbia.edu/files/content/docs/publications/CCSI-Capterio-Flaring-Case-Study-Algeria-June-2025.pdf>

¹³³ World Bank (2023). Global Methane and Flaring Regulations. Algeria. <https://flaringventingregulations.worldbank.org/algeria>

5.2 Germany - Angola

Germany joined the GMP in 2021, signalling its commitment to enhanced international cooperation on methane reduction. As a GMP Champion, Germany plays an active role in encouraging other countries to join and intensify their efforts to reduce methane emissions globally¹³⁴. In 2023, Germany's methane emissions were estimated at 44.8 MtCO₂e. Methane accounted for 6.6% of the country's total GHG emissions, making it the second most significant GHG after CO₂ (88.7%). The main sources of methane emissions in Germany are the agriculture sector (67%), followed by land use, forestry (13%), energy (9%), and waste (7%)¹³⁵.

In addition to complying with EU targets and legislative instruments, Germany's Federal Climate Change Act defines its own national trajectory for GHG reduction¹³⁶. This legislation mandates a reduction in total GHG emissions (including methane) of at least 65% by 2030 and 88% by 2040 (compared to 1990), with the goal of achieving climate neutrality by 2045¹³⁷.

Angola accounts for about 5% of total methane emissions in sub-Saharan Africa. The oil and gas sector is the primary domestic source, accounting for almost 90% of methane emissions from the energy sector. Over 93% of methane released from fossil fuel activities comes from offshore oil production, with venting by far the most significant source, contributing to 83% of emissions, followed by flaring (9.5%), and fugitive emissions (7.6%)¹³⁸.

Efforts to address methane emissions are embedded in Angola's legal framework. This includes legislative instruments such as the Petroleum Activities Law (Law No. 10/04), the 2009 Regulation on Petroleum Operations, and Presidential Legislative Decree No. 7/18¹³⁹, which regulate flaring practices, promote gas utilisation, and mandate companies to adopt international standards for emissions monitoring¹⁴⁰.

Internationally, Angola has ratified the Paris Agreement and submitted its NDCs, which outline general GHG reduction commitments, albeit without methane-specific targets¹⁴¹. In 2024, Angola strengthened its alignment with global climate objectives by joining the GMP, committing to contribute to the collective goal of reducing global methane emissions by 30% by 2030¹⁴².

Finally, Angola increasingly prioritises the valorisation of fossil gas as a strategic component of its energy and environmental policy. This shift is exemplified by the Angola Liquefied Natural Gas (ALNG) project and the country's active participation in the World Bank's GGFR¹⁴³. These

¹³⁴ GMP (2024). Germany – GMP Methane Action Update (September 2024).

<https://www.globalmethanepledge.org/news/germany-gmp-methane-action-update-september-2024>

¹³⁵ Ibid.

¹³⁶ Federal Climate Action Act of 12 December 2019. Federal Law Gazette I, p. 2513. https://www.gesetze-im-internet.de/englisch_ksg/englisch_ksg.html

¹³⁷ Ibid.

¹³⁸ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

¹³⁹ Petroleum Activities Law (Law No. 10/04).

<https://resourcegovernance.org/sites/default/files/Petroleum%20Activities%20Law.pdf>; Decree 1/2009, Regulation on Petroleum Operations; Presidential Legislative Decree No. 7/18 establishing the legal and fiscal regime applicable to the activities of prospection, research, evaluation, development, production and sale of natural gas in Angola. <https://faolex.fao.org/docs/pdf/ang178698.pdf>

¹⁴⁰ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

¹⁴¹ Governo de Angola – Ministerio da cultura, turismo e ambiente (2021). Nationally Determined Contribution of Angola. <https://unfccc.int/sites/default/files/NDC/2022-06/NDC%20Angola.pdf>

¹⁴² IEA (2024). Global Methane Tracker 2024 – What did COP28 mean for methane? <https://www.iea.org/reports/global-methane-tracker-2024/what-did-cop28-mean-for-methane>

¹⁴³ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

initiatives have achieved tangible results: flaring volumes decreased by 60% between 2015 and 2022, and Angola has set a national target to eliminate routine flaring entirely by 2025¹⁴⁴. Nevertheless, the country's emissions monitoring framework continues to depend heavily on voluntary corporate reporting, raising concerns about the accuracy, consistency, and overall reliability of methane emissions data¹⁴⁵.

Germany and Angola have deepened their cooperation in the fossil fuel sector, with a notable expansion in liquefied fossil gas trade. In 2024, German-owned Securing Energy for Europe GmbH (SEFE) signed a mid-term delivery agreement with Angola LNG (a joint venture between Chevron, Azule Energy, Sonangol, and TotalEnergies) for the delivery of 0.5 million tonnes of LNG until 2026¹⁴⁶. This contract reflects SEFE's strategy to secure a diversified and flexible energy portfolio¹⁴⁷. Germany's engagement with Angola in the energy sector has also focused on renewable energy cooperation: German companies Gauff and Conjuncta have partnered with Angola's state-owned energy company, Sonangol, to develop a green hydrogen production project. Powered in part by the Lauca hydropower plant, this EUR 1 billion initiative aims to begin supplying green hydrogen to Germany in 2025. The project is intended to contribute to Germany's energy transition by providing a stable source of low-carbon energy during periods of low solar or wind generation¹⁴⁸.

5.2.1 Legal and regulatory considerations

Regulatory environment in Germany

Methane reduction in Germany is governed by the Federal Climate Change Act. The Act establishes binding emission reduction targets across key sectors, including agriculture, waste management and energy¹⁴⁹, and outlines the overall emissions limits for each year, the monitoring of emissions, and penalties for non-compliance. More specifically, it mandates a reduction in total GHG emissions, including methane, of at least 65% by 2030 and 88% by 2040, compared to 1990¹⁵⁰.

Methane emissions from the fossil fuel sector, especially upstream oil and gas operations, are limited due to the absence of domestic fossil fuel production on a significant scale. As a result, the forthcoming Methane Regulation will apply primarily to imported fossil fuels in the German context. This underscores the importance of robust supply chain due diligence on methane emissions, particularly in the framework of bilateral energy partnerships with producing countries.

Regulatory environment in Angola

Angola has established a relatively robust legal framework for its oil and gas sector, including

¹⁴⁴ World Bank (2023). Global Gas Flaring Tracker Report. <https://thedocs.worldbank.org/en/doc/5d5c5c8b0f451b472e858ceb97624a18-0400072023/original/2023-Global-Gas-Flaring-Tracker-Report.pdf>

¹⁴⁵ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

¹⁴⁶ SEFE (2024). SEFE and Angola LNG sign delivery contract for the supply of half a million tonnes of liquefied natural gas in 2026. <https://www.sefe.eu/en/newsroom/press-releases/sefe-and-angola-lng-sign-delivery-contract-for-the-supply-of-half-a-million-tonnes-of-liquefied-natural-gas-in-2026>; Institute for Energy Economics and Financial Analysis (2024). Europe's LNG imports in 2024. <https://ieefa.org/european-lng-tracker#figure7>

¹⁴⁷ Skopljak, N. (2024). Angolan LNG enriching SEFE's energy mix. <https://www.offshore-energy.biz/angolan-lng-enriching-sefes-energy-mix/>

¹⁴⁸ Gerding, J. (2023). Using Angola's power glut for Germany's energy transition (DW). <https://www.dw.com/en/how-angolas-power-glut-helps-germanys-energy-transition/a-65810030>; Gauff Engineering (2022). Sustainable hydrogen from Angola for Europe's energy transition. <https://www.gauff.net/en/news-aktuelles/alle-neuigkeiten/detail/sustainable-hydrogen-from-angola-for-europes-energy-transition.html>

¹⁴⁹ Federal Climate Action Act of 12 December 2019. Federal Law Gazette I, p. 2513. https://www.gesetze-im-internet.de/englisch_ksg/englisch_ksg.html.

¹⁵⁰ Ibid.

initial measures addressing methane management¹⁵¹.

The Petroleum Activities Act provides the overarching framework for petroleum activities in Angola. It prohibits gas flaring except in strictly limited circumstances, such as testing or operational exigencies, subject to prior approval by the Ministry for Mineral Resources, Petroleum and Gas. The law also allows the supervising authority to impose fees based on the quantity and quality of gas flared, although practical enforcement of this fee mechanism remains unclear¹⁵². The Regulation on Petroleum Operations complements this framework by defining and establishing the conditions and procedures to be observed in upstream oil and gas operations¹⁵³.

Presidential Legislative Decree No. 7/18 creates a fiscal and legal framework to promote fossil gas exploitation and trade. While this initiative supports Angola's broader energy transition goals, it lacks explicit provisions for methane leak detection, venting abatement, or rigorous methane-specific MRV protocols¹⁵⁴.

Angola's legal framework provides the structural basis for methane abatement, but does not yet meet the precision, verification, and enforcement standards expected under the Methane Regulation. Notably, it relies heavily on voluntary corporate disclosures for emissions reporting. Although operators are obliged to submit reports, there is no systematic third-party verification or public data disclosure¹⁵⁵. Angola is taking steps to improve its monitoring capacity, with plans to establish a national MRV system as part of its NDC in 2025. The proposed MRV framework does not explicitly mention reliance on voluntary reporting, instead emphasising knowledge management, capacity development, quality control, and the integration of legal frameworks¹⁵⁶.

To ensure future compliance with the Methane Regulation and maintain access to the EU fossil fuel market, Angola may need to undertake several measures:

- Introduce methane-specific obligations into its existing legislation. These obligations should focus on LDAR, venting prohibitions, and mandatory third-party verification of emissions data.
- Strengthen the proposed MRV system by deploying continuous monitoring technologies, certifying instruments, and implementing quality control protocols.
- Equip regulatory authorities such as the National Oil, Gas and Biofuel Agency or the Ministry for Mineral Resources, Petroleum and Gas with technical expertise to oversee methane management effectively.

5.2.2 Proposed partnership design

The proposed methane abatement partnership between Germany and Angola could be structured as a VPA, anchored to the existing mid-term LNG supply contract between Angola LNG and Germany's SEFE. This agreement would not only reflect growing trade ties but establish a clear framework for aligning Angola's gas exports with the requirements of the Methane Regulation. Given that producer countries will be directly affected by the Regulation, and that compliance is a precondition for retaining access to the EU market, a formalised partnership would provide a structured mechanism to support Angola to meet these obligations while advancing joint climate objectives. A VPA between Germany and Angola could eliminate

¹⁵¹ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

¹⁵² World Bank (2023). Angola. <https://flaringventingregulations.worldbank.org/angola>

¹⁵³ Ibid.

¹⁵⁴ African Centre for Energy Policy (2023). Examining methane management in the climate action plans of oil producing African nations, pp. 29-36. <https://acep.africa/examining-methane-management-in-the-climate-action-plans-of-oil-producing-african-nations/>

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

the most significant sources of methane emissions in Angola's oil and gas sector – venting and flaring. Under the partnership, Angola LNG would commit to ending routine flaring by 2030 in line with existing national policy and adopt a prohibition on venting except under narrowly defined, technically justified circumstances. This approach directly targets the most impactful sources of emissions, ensuring that mitigation efforts yield immediate and measurable benefits.

A key focus of the agreement would be building the operational capacity and governance structures necessary to sustain long-term methane abatement. This would involve the establishment of joint technical working groups comprising representatives from Angola's authorities and German technical partners. These groups would be tasked with overseeing implementation, resolving bottlenecks, and facilitating peer learning. Capacity-building efforts would include specialised training for Angolan regulators and technicians on emissions reduction technologies, operational best practices, and environmental compliance monitoring.

A VPA structure has the potential to offer economic incentives for compliance. Methane-certified gas could benefit from accelerated due diligence procedures and prioritised access to the EU market, providing a commercial reward for exporters that meet high environmental standards. In the context of tightening regulation, this would serve as both a compliance mechanism and a strategic advantage in maintaining market share within the EU.

The implementation and oversight of the partnership would involve a range of public and private actors. It would be overseen jointly by Germany's Federal Ministry for Economic Affairs and Climate Action (BMWK) and Angola's Ministry of Mineral Resources, Petroleum and Gas, ensuring political support and regulatory alignment. Angola LNG would bear primary responsibility for delivering on its mitigation commitments, with SEFE playing a key enforcement role by incorporating methane performance standards into its procurement contracts. Independent oversight would be bolstered through engagement with civil society organisations in both countries, fostering transparency and inclusive governance, features that have proven crucial to the success of VPAs in other sectors, such as forestry.

The agreement could be supported through a combination of national and international funding sources, including grants and technical assistance provided by German development agency, GIZ, and funding through EU external instruments such as the NDICI-Global Europe. Additional support could be mobilised through international financing institutions, such as the GFMR and the private sector. Both financial and technical support from Germany and GIZ face notable constraints. For example, Angola LNG is a joint venture involving major international fossil fuel companies alongside Angola's state-owned Sonangol. Interviews with GIZ and other German stakeholders¹⁵⁷ emphasised that Germany adheres to a fundamental principle: public funds cannot be used to subsidise companies – domestic or foreign – for reducing emissions they are already legally obligated to mitigate.

GIZ has opted for a highly cautious approach to engaging in fossil-fuel related methane mitigation. Its involvement is strictly confined to non-financial forms of support, including regulatory advice, development of MRV frameworks, capacity-building, and awareness-raising. In addition, that support explicitly excludes any direct assistance to private fossil fuel companies. Given that Angola LNG includes multinational corporations with substantial revenues, GIZ would not consider them eligible for financial support. As a result, financial and technical support may need to rely exclusively on international financial institutions.

5.2.3 Opportunities and challenges

Key challenges are securing funding and technical support. Interviews revealed that the German government is unwilling to provide assistance to high-revenue fossil fuel corporations, such as those involved in Angola LNG. Instead, GIZ limits its engagement to low-revenue, state-owned fossil fuel companies, such as those in Libya and Uzbekistan, where public

¹⁵⁷ Interview with GIZ; Interview with DUH.

support is considered justifiable due to the lack of surplus funds for methane mitigation measures. This constraint on financial and technical assistance may ultimately discourage Angola LNG from agreeing to a VPA.

Nevertheless, the case for a structured partnership remains compelling. Angola has expressed its ambition to establish a national MRV system by 2025 and is already participating in international initiatives such as the GFMR, both of which lay important groundwork for formal cooperation. At the same time, the evolving regulatory environments, both domestically and within the EU, are reshaping the expectations placed on energy exporters. Angola LNG will inevitably need to comply with more rigorous methane mitigation standards if it is to maintain market access. Entering into a VPA would allow Angola to shape the terms of that compliance proactively, access best practices and technical guidance, and secure a more favourable position within the EU energy market. For Germany, such a partnership would reinforce its international climate leadership while promoting a more sustainable and resilient fossil fuel supply chain.

5.3 Italy - Azerbaijan

According to the Italian GHG inventory, methane emissions represented 11.7% of total GHG emissions in 2023, corresponding to 45.2 MtCO_{2e}¹⁵⁸. Compared to the 2020 baseline in the GMP, this reflects a modest reduction of approximately 5%, indicating that recent mitigation efforts have struggled to maintain strong downward momentum. The majority of the methane emissions originate in the agricultural sector (46.1%), where methane is the main byproduct of enteric fermentation and manure management, closely followed by the waste sector, which accounts for 40.9%. The energy sector is third, at 12.9%, reflecting a reduction in the emissions from energy industries, but growth in the civil sector due to the increased use of fossil gas and biomass in heating systems.

According to the IEA, there were 1.6 million tonnes of methane emissions in 2024, of which 276,000 tonnes related to energy, placing Italy 49th globally¹⁵⁹. Of those emissions, 56,000 tonnes were vented and 31,000 tonnes were fugitive emissions from gas pipeline and LNG facilities, and onshore oil. The remainder came from bioenergy and other activities related to oil and gas¹⁶⁰.

The majority of methane imports come from countries with high methane intensity, such as Algeria and the US¹⁶¹, pushing the Italian average methane intensity for gas imports to around 7.1 Gg/bcm, more than twice the European average¹⁶². In 2023, Italy was the only major importing country to increase its LNG imports compared to 2022¹⁶³.

Italy has a long-term, multisectoral strategy to reduce GHG emissions. It aims to achieve climate neutrality by 2050 through a comprehensive multisectoral approach aligned with the Paris Agreement. It targets a 40% reduction in energy demand, accompanied by infrastructure upgrades and the large-scale deployment of hydrogen to enable a circular, low-emission energy system. The strategy also addresses the challenge of managing residual emissions from agriculture and industry, which are considered hardest to mitigate.

One stakeholder clarified the various roles played by different stakeholders in energy contracts. There is a formal difference between the role of the government and other actors:

- The Italian government plays a largely diplomatic and strategic role in oil and gas import agreements.
- Energy companies, such as Eni, are the main signatories of the agreements, often joined by other companies, such as SNAM.
- The regulatory authority (ARERA) is responsible for supervision.

Starting with the Monti administration, the Italian government has been promoting activities related to gas import contracts for several years. The Meloni administration has continued and reinforced this strategy both with Asian and African countries. For example, in January 2024 the government launched the Mattei Plan, aimed at strengthening the relations between Italy and Africa through cooperation, development and investment. One of the plan's six pillars is energy and, in fact, in 2024, almost half of the import value from the countries involved in the plan regarded gas.¹⁶⁴

¹⁵⁸ ISPRA (2025). Italian Greenhouse Gas Inventory 1990-2023. National Inventory Document 2025. Rapporti 411/25.

¹⁵⁹ IEA (2024). Global Methane Tracker. <https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

¹⁶⁰ Ibid.

¹⁶¹ Methane intensity for the US is 6 Gg/bcm, while the methane intensity for Algeria is 9.9 Gg/bcm. <https://eccoclimate.org/methane-emissions-europe-and-italy-face-the-energy-omnibus/>

¹⁶² ECCO (n.d.). Methane emissions: Europe and Italy face the Energy Omnibus.

¹⁶³ Green Report (2024). Arera, nell'ultimo anno solo l'Italia ha incrementato l'import di gas naturale liquefatto (Gnl).

<https://www.greenreport.it/news/nuove-energie/1428-arera-nellultimo-anno-solo-litalia-ha-incrementato-limport-di-gas-naturale-liquefatto-gnl#:~:text=Nel%202023%20circa%2014%2C5,contavano%20insieme%20per%20il%2094%25>

¹⁶⁴ Osservatorio CPI (2025). At what point is the Mattei Plan? <https://osservatoriocpi.unicatt.it/ocpi-pubblicazioni-a-che-punto-e-il-piano-mattei>

In 2024, Azerbaijan ranked 51st on the IEA Global Methane Tracker of oil and gas-based emitters, with a total of 269,000 tonnes of estimated emissions from energy. Most of the methane emissions came from venting rather than fugitive leaks or flaring. Looking at offshore oil, offshore gas, gas pipeline, LNG facilities and onshore oil, a total 57,000 tonnes were fugitive emissions, 174,000 were vented and 20,000 were flared¹⁶⁵. The remaining 18,000 tonnes came from abandoned facilities and other sources linked to oil and gas. Energy-related activities represented 49% of the methane emissions, followed by agriculture (34%) and waste-related activities (17%)¹⁶⁶.

Azerbaijan's production of oil and gas has followed different trajectories over the last 10 years. In 2023, the latest year for which data are available, it produced 620,000 barrels of oil daily, showing a progressive decrease since 2013. However, it produced 35.6 bcm of gas in 2023, representing the sixth consecutive year of gas production increase¹⁶⁷.

Azerbaijan is actively engaged in implementing the Paris Agreement. As part of its contribution to global climate change mitigation efforts, it aims to reduce GHG emissions by 35% by 2030 and by 40% by 2050, compared to 1990. Azerbaijan intends to contribute to reducing environmental impact primarily through its domestic capacity and has taken significant steps to engage in international cooperation¹⁶⁸.

Azerbaijan has endorsed the ZRF and thus its intention to eliminate routine flaring to boost climate change mitigation efforts and save valuable natural resources¹⁶⁹.

However, a recent analysis by the Climate Action Tracker (CAT) highlighted that Azerbaijan's target and current policies are not consistent with Paris Agreement objectives¹⁷⁰. According to the rating, Azerbaijani policies are not on track to meet its climate targets and overall emissions (not just methane) are expected to increase until 2030.

More generally, Italy's commitments are closely linked to the Methane Regulation, as confirmed in an interview with a representative of the Italian climate think tank, ECCO. Italy's approach to methane abatement, as outlined in the most recent update to the NECP, reflects these commitments by explicitly endorsing reductions in methane emissions and encouraging exporting countries to adopt higher environmental and safety standards¹⁷¹.

Italy is the world's largest importer of Azerbaijani exports. Of USD 10.9 billion of exports from Azerbaijan to Italy, USD 10.8 billion comes from mineral fuels, oils, and distillation products¹⁷². Despite the magnitude of the oil trade relationship between Azerbaijan and Italy, it contracted somewhat between 2022 and 2024, from USD 17.7 billion to USD 10.8 billion. For Azerbaijan's part, it exports around 46% of its mineral fuels, oils and distillation products to Italy.

Gas imports from Azerbaijan to Italy have experienced a considerable increase in recent years, spiking from 11.5 million m³ in 2020 to 10.3 bcm in 2022, according to the Italian Ministry of Environment and Energy Security¹⁷³. Italy is also a key partner for Azerbaijan in the export of machinery and equipment (electrical and non-electrical), clothing, chemicals, and food

¹⁶⁵ IEA (2024). Global Methane Tracker. <https://www.iea.org/data-and-statistics/data-tools/methane-tracker>

¹⁶⁶ Ibid.

¹⁶⁷ Energy Institute (2024). Statistical Review of World Energy.

¹⁶⁸ Republic of Azerbaijan (2023). Updated document on Nationally Determined Contributions. https://unfccc.int/sites/default/files/NDC/2023-10/Second%20NDC_Azerbaijan_ENG_Final%20%281%29.pdf

¹⁶⁹ World Bank (n.d.). ZRF endorsers. <https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030/endorsers>

¹⁷⁰ Climate Action Tracker (2024). Azerbaijan. <https://climateactiontracker.org/publications/azerbaijan-country-assessment-september-2024/>

¹⁷¹ European Commission (2024). Italy final updated NECP 2021-2030. https://commission.europa.eu/publications/italy-final-updated-necp-2021-2030-submitted-2024_en

¹⁷² Trading Economics (n.d.). Azerbaijan exports to Italy. <https://tradingeconomics.com/azerbaijan/exports/italy>

¹⁷³ Ministry of Environment and Energy Security (2022). Imports of natural gas. <https://sisen.mase.gov.it/dgsaie/importazioni-gas-naturale>

products.

Italy's energy involvement in Azerbaijan began in 1999, but paused after Eni's 2004 exit from the upstream sector¹⁷⁴. In 2024, Eni re-entered the market by signing a MoU with the state oil company, SOCAR, to explore cooperation in hydrocarbons, emissions reduction, and gas infrastructure¹⁷⁵. This partnership was reinforced during the Azerbaijani President's visit to Italy, when three additional MoUs were signed, focusing on energy security, emissions reduction, and biofuels, and highlighting plans to boost hydrocarbon production and strengthen European and Italian energy security¹⁷⁶.

Italian companies have an established presence in Azerbaijan's energy sector. Saipem has operated in the country since 2001, collaborating with SOCAR on offshore oil and gas projects, including the Shah Deniz field¹⁷⁷. SNAM, meanwhile, holds a 20% stake in the Trans-Adriatic Pipeline (TAP), which transports Azeri gas to Italy¹⁷⁸. In 2020, SNAM and SOCAR signed a cooperation agreement focused on renewable gas and sustainable mobility.

In 2016, Italy's National Promotional Bank, CDP, and export credit agency, SACE, showed interest in financing Azerbaijan's GPC Project to build a petrochemical plant to serve European, Turkish and Chinese markets, subsequently signing an agreement with SOCAR and Russia's Exiar¹⁷⁹. During President Aliyev's 2020 visit to Italy, CDP, SACE and SIMEST signed an MoU with the Azerbaijan Investment Company to boost bilateral business cooperation, support economic diversification, and provide technical assistance on export credit and investment financing. The Legambiente representative noted that these agreements are not publicly available and there is limited transparency in respect of their implementation.

Italy and Azerbaijan have strengthened their relationship in recent years. In February 2020, they signed 28 partnership agreements (including MoUs between CDP, SACE, SIMEST and the Azerbaijan Investment Company, a cooperation agreement between SNAM and SOCAR, and a partnership agreement between SIMEST SpA and Azerbaijan Export and Investment Promotion Foundation (Azpromo)). They also signed the Joint Declaration between the Republic of Italy and the Republic of Azerbaijan on Strengthening the Multidimensional Strategic Partnership at that time, the most important political document between the two countries¹⁸⁰.

In 2022, Azerbaijan signed an MoU with the EU on a Strategic Partnership in the Field of Energy, underscoring a mutual commitment to strengthen energy cooperation, particularly through the Southern Gas Corridor¹⁸¹. It aims to double gas supply capacity to the EU by 2027, supporting Europe's REPowerEU Plan to reduce dependency on Russian fossil fuels. The partnership also encompasses long-term goals such as enhancing energy efficiency, accelerating the deployment of renewable energy, and addressing methane emissions. Beyond energy, ongoing negotiations for a broader EU-Azerbaijan agreement seek to deepen cooperation in areas such as trade, investment, and civil society, while upholding human rights

¹⁷⁴ ECCO (2024). Energy relations between Italy and Azerbaijan. Risks of gas dependency in the energy transition.

¹⁷⁵ Eni (2024). L'amministratore delegato di Eni Claudio Descalzi incontra il Ministro dell'Economia della Repubblica dell'Azerbaijan Mikayil Jabbarov e firma un MoU con SOCAR per cooperare in progetti energetici e iniziative di transizione energetica. <https://www.eni.com/it-IT/media/comunicati-stampa/2024/07/amministratore-delegato-di-eni-claudio-descalzi-incontra-il-ministro-economia-della-repubblica-azerbaigian-mikayil-jabbarov.html>

¹⁷⁶ Eni (2024). Eni e SOCAR firmano accordi negli ambiti della sicurezza energetica, della riduzione delle emissioni di gas serra e nella filiera di produzione dei biocarburanti. <https://www.eni.com/it-IT/media/comunicati-stampa/2024/09/eni-e-socar-firmano-accordi-negli-ambiti-della-sicurezza-energetica-della-riduzione-delle-emissioni-di-gas-serra-e-nella-filiera-di-produzione-dei-biocarburanti.html>

¹⁷⁷ Skopljak, N. (2024). Subsea contract with BP takes Saipem to Azerbaijan. Offshore Energy. <https://www.offshore-energy.biz/subsea-contract-with-bp-takes-saipem-to-azerbaijan/>

¹⁷⁸ ECCO (2024). Energy relations between Italy and Azerbaijan. Risks of gas dependency in the energy transition.

¹⁷⁹ Ibid.

¹⁸⁰ Republic of Azerbaijan, Ministry of Foreign Affairs (n.d.). Bilateral Relations: Italy. <https://mfa.gov.az/en/category/avropa/italiya#:~:text=The%20E2%80%9CJoint%20Declaration%20on%20Strengthening,Rome%20is%20the%20highest%2Dlevel>

¹⁸¹ European Commission (2022). EU and Azerbaijan enhance bilateral relations, including energy cooperation.

and the rule of law.

5.3.1 Legal and regulatory considerations

Regulatory environment in Italy

The primary legal instrument governing methane abatement in Italy is the Methane Regulation. It establishes binding requirements for domestic oil and gas operators regarding the monitoring, reporting, and mitigation of methane emissions across the value chain. In parallel, the Regulation introduces separate provisions for fossil fuel imports, which apply primarily to EU-based importers and require them to ensure that upstream emissions data from non-EU suppliers is disclosed and verified. These provisions require that fossil fuels imported into the EU meet specific methane transparency and performance standards, implicating Italy's external energy suppliers. The Legambiente representative highlighted that Italy currently does not have a clear and transparent strategy setting methane reduction targets.

Italy is a signatory of the GMP¹⁸². During the last G7, held in Apulia, Italy committed to reaching a global reduction in overall methane emissions of at least 35% by 2035, as well as to collectively pursuing a 75% reduction in global methane emissions from fossil fuels, and a reduction of methane intensity of oil and gas operations by 2030¹⁸³.

The Italian commitment to abating methane emissions has been reinstated, with a commitment to support the Methane Abatement Partnership Roadmap¹⁸⁴.

Regulatory environment in Azerbaijan

Azerbaijan does not have a national methane abatement law but instead addresses it through a variety of commitments and MoUs.

In its NDCs, Azerbaijan committed to a 35% reduction in the level of GHG emissions by 2030 compared to 1990 levels, and to a 40% cut by 2050. During COP29, Azerbaijan signed the GMP, with the ambition to collectively reduce the overall methane emissions by 30% by 2030 compared to 2020 levels. It has also endorsed the ZRF.

Nevertheless, the lack of a strong legal mandate and insufficient emissions reporting reveals enforcement and transparency gaps. Satellite analysis shows that gas flaring in Azerbaijan has increased by nearly 11% (over 1,000 flaring events) since 2018, the last year the country reported its GHG emissions, despite public pledges by Azerbaijan, BP, and state oil company, SOCAR, to eliminate routine flaring by 2030¹⁸⁵. In 2024, flaring at Sangachal hit record highs, coinciding with the launch of BP's advanced ACE platform. The surge undermines commitments made under the ZRF and the GMP¹⁸⁶. Critics, including Global Witness, argue that Azerbaijan's six-year failure to report emissions, despite hosting COP29, damages its credibility in leading global climate diplomacy¹⁸⁷. The investigation by Global Witness raises serious concerns about accountability, transparency, and public health impacts from continued flaring near residential areas.

5.3.2 Proposed partnership design

The proposed model for implementation of a methane abatement partnership (BA) would be

¹⁸² G7 Italia (2024). Communiqué. <https://www.consilium.europa.eu/media/fttjncq/apulia-g7-leaders-communique.pdf>

¹⁸³ G7 Italia (2024). Climate, Energy and Environment Ministers' Meeting Communiqué.

¹⁸⁴ European Commission (n.d.). Statement of Methane Abatement Partnership Roadmap. https://energy.ec.europa.eu/document/download/1978e73b-0158-4593-87a5-c051bc0ec714_en?filename=Methane%20Abatement%20Partnership%20Roadmap.pdf

¹⁸⁵ Global Witness (2024). COP29 host Azerbaijan failing to report ever-growing methane emissions. <https://globalwitness.org/en/campaigns/fossil-fuels/cop29-host-azerbaijan-failing-to-report-ever-growing-methane-emissions/>

¹⁸⁶ Ibid.

¹⁸⁷ Ibid.

underpinned by a contractual arrangement between the Italian and Azerbaijani governments. The BA would be structured to deliver legally binding commitments on methane emissions reduction, while incorporating key features from the EU's experience with VPAs and MPAs. These include stakeholder engagement, institutional cooperation, and structured MRV mechanisms.

The BA would focus on the following areas:

- Setting quantified methane reduction targets for Azerbaijan's energy sector, including time-bound commitments to reduce and eliminate routine flaring and venting.
- Establishing national obligations on LDAR, operator reporting, and sectoral MRV standards.
- Creating an independent MRV system, with third-party oversight by institutions such as the IMEO.
- Enhancing public access to emissions data, with regular publication of verified performance reports.

In parallel, the agreement would recognise the need for tailored support to Azerbaijan to implement these reforms. Italy could provide technical assistance for legal and regulatory alignment, training for inspectors, and deployment of LDAR technologies. Italian companies with an operational presence in Azerbaijan (e.g. Saipem, Eni) could support pilot projects and transfer of best practices.

Institutional roles and responsibilities

The partnership could involve a broad range of stakeholders:

- Italy's Ministry of Environment and Energy Security and Azerbaijan's Ministry of Energy would lead policy coordination, legal alignment and funding mobilisation.
- Azerbaijan's Ministry of Energy would be responsible for implementation and compliance.
- IMEO would act as a third-party MRV verifier and methodological adviser.
- Italian oil and gas companies, such as Eni and Saipem, together with SOCAR, would be involved in the operational rollout of methane abatement measures.
- Civil society organisations and NGOs would play an advisory and transparency role.

Financing and support

The BA could be supported by a mix of national and international funding sources, such as grants and technical assistance under the Italian Climate Fund¹⁸⁸, export credit guarantees via CDP and SACE, and funding through EU external instruments such as NDICI-Global Europe. Further support could be sought from international financial institutions (e.g. the World Bank's GFMR) and the private sector.

In addition, the agreement could incorporate incentives for methane performance, such as market-based instruments or purchase preferences for low-methane gas exports. This would contribute to de-risking investment in emissions mitigation for Azerbaijani operators.

The Legambiente representative raised some concerns about public funding, suggesting that operators should be entirely responsible for covering the costs of reducing emissions and that these costs should not be passed on to consumers. They added that public resources should be reserved exclusively for supporting the energy transition, particularly renewable energy, storage, interconnections and efficiency.

The partnership would help to reduce the methane intensity of Italy's gas import portfolio, strengthen Italy's compliance with EU climate legislation, and support the implementation of Italy's NECP. For Azerbaijan, the partnership would offer access to financial and technical support, while enhancing the credibility of its climate commitments. It would also send a strong international signal of Azerbaijan's willingness to act on methane.

¹⁸⁸ Ministry of Environment and Energy Security (n.d.). Italian Climate Fund. <https://www.mase.gov.it/portale/the-fund>

By aligning commercial energy relations with climate policy objectives, the proposed bilateral agreement would constitute a model for how the EU and its Member States can work with key energy exporters to address upstream methane emissions.

Stakeholders highlighted that while Italy has the potential to take a leadership role, there may be a lack of political interest.

5.3.3 Opportunities and challenges

The proposed BA between Italy and Azerbaijan could represent a timely opportunity to advance methane abatement objectives while deepening energy cooperation. However, its implementation would likely face several political, technical, regulatory and financial challenges.

Politically, the success of the partnership would depend on sustained commitment at the highest levels of government. While COP29 offered an important window for Azerbaijan to demonstrate climate leadership, Italy can now play a leading role in forging practical solutions for addressing upstream methane emissions. However, the political visibility of the partnership might attract scrutiny, particularly given existing concerns around flaring transparency and governance in Azerbaijan.

Technically, the deployment of robust MRV systems and LDAR infrastructure would require substantial investment and capacity-building. Azerbaijan's institutional readiness remains uneven and regulatory frameworks for methane management are still in development. Through its technical agencies and corporate actors, Italy could play a crucial role in supporting the transfer of expertise and best practices. Collaborative pilot projects involving Saipem, Eni and SOCAR could help to catalyse implementation on the ground.

Regulatory alignment is another key challenge. Under the Methane Regulation, fossil fuel exporters such as Azerbaijan will be required to meet specific transparency and performance standards to retain access to the European market. While Azerbaijan has made international commitments on methane, including joining the GMP, it lacks binding domestic legislation to enforce reductions. A BA could serve as a transitional tool to support Azerbaijan's alignment with EU requirements, notably featuring robust accountability measures and technical assistance for legal and institutional reform.

Securing adequate and predictable funding would be essential. While resources may be mobilised from Italy's Climate Fund and the EU's external instruments (e.g. NDICI–Global Europe), longer-term sustainability would depend on engaging private sector actors and international financial institutions. Instruments such as performance-based incentives or differentiated tariffs for low-methane gas could encourage compliance and reduce investment risk for Azerbaijani operators.

The Legambiente representative noted that where compliance costs related to the Methane Regulation requirements would lead to higher costs for importing gas in the EU, this should be an incentive for governments to reduce their gas consumption and to point at renewables instead. However, increased costs for gas exporters are expected to be small relative to the total cost of supply.¹⁸⁹

Despite these challenges, the partnership would benefit from a solid foundation of bilateral energy cooperation, including longstanding commercial ties and recent MoUs on hydrocarbons and emissions reductions. These existing relationships provide a platform for accelerating implementation, supported by a shared interest in aligning fossil energy trade with global climate objectives. The proposed BA would offer a practical and politically salient vehicle for delivering tangible progress on methane abatement.

¹⁸⁹ Rystad Energy (2023). Impact of EU methane import performance standard. [Rystad Energy - Impact of EU methane import performance standard](#)

6. Conclusions

This study examined practical and strategic approaches for operationalising methane abatement partnerships between EU Member States and fossil fuel-producing countries. In the context of escalating global ambitions, such as those articulated in the Methane Abatement Partnership Roadmap, and new obligations under the Methane Regulation, methane reduction has emerged as an urgent priority in European climate diplomacy and energy policy.

While methane abatement partnerships have significant potential, their design, financing, and implementation pose complex diplomatic, economic, regulatory and technical challenges. This analysis demonstrates that there is no one-size-fits-all solution. Rather, each partnership must be sensitive to geopolitical contexts, tailored to local regulatory and institutional capabilities, and underpinned by robust financial mechanisms that mobilise both public and private resources.

The financial landscape for methane abatement reveals both opportunities and gaps. Available international funding from institutions such as the World Bank's GFMR, EU instruments including the NDICI, and innovative private-sector mechanisms like premium payments and preferential market access for methane-abated gas are promising pathways. Nevertheless, these must be strategically aligned to overcome structural challenges such as limited institutional capacity, enforcement deficits, and perceived investment risks in producer countries.

Stakeholder consultations reinforced the importance of context-sensitive regulatory support, highlighting that methane abatement strategies are most effective when driven domestically, respecting national priorities and institutions. For partnerships to be successful, they must combine external incentives with robust internal governance frameworks, building institutional capacity and local ownership rather than relying solely on external pressure or market forces. This finding was repeatedly emphasised, underscoring the need for inclusive partnership designs that integrate rather than replace national climate and development plans.

The three case studies demonstrated that EU countries such as Spain, Italy, and Germany, through their existing bilateral energy relations, are uniquely positioned to catalyse effective methane abatement partnerships. The Spain–Algeria example illustrated that despite recent diplomatic challenges, the strategic economic interdependence between producer and consumer countries offers a valuable entry point for mutually beneficial cooperation. Such partnerships not only contribute to EU climate goals but help producer countries to align progressively with Methane Regulation requirements, enhancing their long-term competitiveness in a rapidly decarbonising European market.

Effective methane abatement partnerships require integrated, strategic, and politically astute approaches. They are not merely regulatory instruments or diplomatic gestures, but, rather, comprehensive frameworks for aligning economic incentives, environmental imperatives, and geopolitical realities.

Finally, the upcoming COP30 presents an important opportunity to translate strategic insights into tangible action. By advancing concrete methane abatement partnerships that are ambitious yet realistic, the EU and its Member States have an opportunity to demonstrate global climate leadership, set international standards, and accelerate methane mitigation at scale. Through collaborative, country-driven, and financially supported partnerships, the EU can meaningfully contribute to achieving near-term climate objectives, enhancing global environmental integrity, and forging resilient, mutually beneficial alliances for a sustainable energy future.

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Stakeholder list

Relevant Stakeholder	Date of the interview
International Organisation	28-05-25
Public Authority (Germany)	18-06-25
Bilateral agency (Germany)	07-05-25
International Research Institute	30-05-25
Legambiente (Italy)	16-06-25
ECCO (Italy)	12-06-25
Ecodes (Spain)	29-05-25
NGO (Germany)	02-07-25

Annex 2: Mapping of stakeholders involved in methane abatement

Name of stakeholder	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
United Nations Environment Programme (UNEP)	International Organisation	Sets international norms, fosters cooperation	Developing methane assessments, promoting environmental law	Achieving global climate targets, environmental protection	International Methane Emissions Observatory (IMEO) ; Climate and Clean Air Coalition (CCAC)	Focus on policy and scientific assessments
International Methane Emissions Observatory (IMEO)	International Organisation	Supports UNEP, implements Global Methane Pledge	Collecting and reporting methane data based on national inventories, scientific and satellite data as well as information from industry reporting and supporting projects in developing countries that address climate change and air pollution issues	Reducing methane emissions	Oil and Gas Methane Partnership 2.0 (OGMP 2.0)	-
Climate and Clean Air Coalition (CCAC)	International Organisation	Supports UNEP, implements Global Methane Pledge	Bringing together governments, intergovernmental organisations, and NGOs	Reducing methane emissions	Fossil Fuel Regulatory Programme (FFRP) and its Trust Fund	-
International Energy Agency (IEA)	International Organisation	Provides data and analysis	Tracking methane emissions, analysing abatement potentials	Achieving Net Zero emissions, energy security	Global Methane Tracker, reports on methane abatement	Strong focus on the energy sector
Global Methane Initiative	International Organisation	Facilitates cooperation	Providing technical assistance, project database	Reducing global methane emissions	Project database, case study library, training, MRV, and technical resources	Focus on practical implementation
Global Methane Hub (GMH)	International Organisation	Global networks of experts, activities and policy-makers	Supporting governments, civil society, researchers, investors, and the private sector to	Reducing global methane emissions	Energy programme and Data and research	-

Name of stakeholder	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
			develop and implement strategies for methane emissions reductions in the energy, agriculture, and waste sectors			
World Bank Group	Multilateral Development Bank	Provides financing and expertise	Funding projects, technical assistance	Sustainable development, climate change mitigation	Climate finance initiatives (e.g. Global Flaring and Methane Reduction Partnership (GFMR); the Zero Routine Flaring by 2030 (ZRF) Initiative and the Global Gas Flaring Reduction Partnership (GGFRP))	Significant financial leverage
EBRD	Multilateral Development Bank	Provides financing	Funding sustainable projects	Transition to market economies, environmental sustainability	Energy efficiency and climate projects Methane Emissions Reduction Programme in Kazakhstan ; Investments in Methane-Intensive Sectors ; Support for Global Methane Pledge	Focus on transition countries; Combines investments with policy engagement and technical assistance.
African Development Bank	Multilateral Development Bank	Provides financing	Funding development projects in Africa	Economic development, poverty reduction, climate resilience	Methane in Africa Report ; Africa Climate Change Fund (ACCF) ; Received funding to support methane abatement initiatives, including integrating methane into NDCs.	Regional focus; Supports enabling environment conditions for methane abatement in various sectors.
EIB	Multilateral Development Bank	Provides financing	Funding projects supporting EU policy goals	Promoting EU objectives, sustainable development	Nortegas Biomethane Production Plants ; Support for Global Methane Pledge ;	EU's investment bank; Enhances focus on projects in forestry, biomaterials, and

Name of stakeholder	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
					Integration of Methane Criteria for climate mitigation projects.	circular economy to reduce methane emissions.
European Commission (DG Energy, DG Climate Action, DG INTPA)	EU Institution	Develops and implements policy	Drafting regulations, leading diplomacy, managing funding	Achieving EU Green Deal , energy security , international leadership	EU Methane Regulation , Global Methane Pledge , NDICI-Global Europe , Methane Abatement Partnership Roadmap	Central to EU's methane strategy
European Parliament	EU Institution	Provides legislative oversight	Reviewing and approving legislation	Representing citizens' interests, environmental protection	Approves EU regulations and directives	Holds significant political power
Council of the European Union	EU Institution	Represents Member States' interests	Adopting legislation	Balancing national interests with EU goals	Approves EU regulations and directives	Key decision-making body
European External Action Service (EEAS)	EU Institution	Manages EU's foreign policy	Engaging in climate diplomacy	Promoting EU values and interests globally	Bilateral and multilateral engagements with fossil fuel exporting countries	Focus on external relations
Spanish Ministry for the Ecological Transition and the Demographic Challenge (MITECO)	National Ministry	Implements EU policy	National strategies, climate bilateral cooperation	Meeting national and EU targets, energy security	Bilateral agreements, national energy plans	Country-specific priorities and expertise
German Federal Ministry for Economic Affairs and Climate Action (BMWK)	National Ministry	Implements EU policy	National strategies, climate bilateral cooperation	Meeting national and EU targets, energy security	Bilateral agreements, national energy plans	Country-specific priorities and expertise
Italian Ministry of the Environment and Energy Security (MASE)	National Ministry	Implements EU policy	National strategies, climate bilateral cooperation	Meeting national and EU targets, energy security	Bilateral agreements, national energy plans	Country-specific priorities and expertise
GIZ	Bilateral Agency (Germany)	Implements development projects	Providing technical assistance, capacity building	Supporting partner countries' development, German foreign policy	Energy sector projects, technical cooperation programs	On-the-ground implementation capacity

Name stakeholder	of	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
AICS	Bilateral	Agency (Italy)	Implements development projects	Providing technical assistance, capacity building	Supporting partner countries' development, Italian foreign policy	Energy sector projects, technical cooperation programs	On-the-ground implementation capacity
AECID	Bilateral	Agency (Spain)	Implements development projects	Providing technical assistance, capacity building	Supporting partner countries' development, Spanish foreign policy	Energy sector projects, technical cooperation programs	On-the-ground implementation capacity
Sonangol	Fossil Exporter	Fuel (Angola)	Operates infrastructure	Managing production, implementing environmental standards	Maximising revenue, long-term viability, market access	Potential LDAR programs, engagement with OGMP 2.0	Key actor in Angolan emissions reduction
SOCAR	Fossil Exporter	Fuel (Azerbaijan)	Operates infrastructure	Managing production, implementing environmental standards	Maximising revenue, long-term viability, market access	Potential LDAR programs, engagement with OGMP 2.0	Key actor in Azerbaijani emissions reduction
sonatrach	Fossil Exporter	Fuel (Algeria)	Operates infrastructure	Managing production, implementing environmental standards	Maximising revenue, long-term viability, market access	Potential LDAR programs, engagement with OGMP 2.0	Key actor in Algerian emissions reduction
bp	International Company	Oil	Operates infrastructure globally	Managing production, implementing environmental standards	Profitability, license to operate, reputation	Potential abatement projects, reporting initiatives Methane Abatement in Maritime Innovation Initiative (MAMII) ; Support for Stronger Federal Methane Regulations ; Deployment of Methane Detection Technologies	Significant global influence; Recognized with 'Gold Standard' by the UN for methane reduction efforts.
Eni	International Company	Oil	Operates infrastructure globally	Managing production, implementing environmental standards	Profitability, license to operate, reputation	Methane Report 2024 ; Founding Member of UNEP OGMP ; Upstream Methane Intensity Reduction	Significant global influence; Collaborates with international partners to support energy transition.

Name stakeholder	of Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
TotalEnergies	International Oil Company	Operates infrastructure globally	Managing production, implementing environmental standards	Profitability, license to operate, reputation	Global Flaring and Methane Reduction (GFMR) Trust Fund ; Deployment of Real-Time Methane Detection ; Participation in OGMP 2.0 .	Significant global influence; Aims to achieve near-zero methane emissions by 2030.
Chevron	International Oil Company	Operates infrastructure globally	Managing production, implementing environmental standards	Profitability, license to operate, reputation	Pneumatic Controller Replacement Initiative and Collaboration with Kathairos Solutions ; Founding Member of The Environmental Partnership	Significant global influence; Committed to lowering methane emissions intensity across operations.
BlackRock	Private finance institution	Provides capital	Investing in energy and infrastructure	Financial returns, risk management	Decarbonization Investment Partnership with Temasek; Earmarked \$150 Billion for Decarbonization	Major global investment firm; Provides tools to reach investment goals aligned with low-carbon transition.
Goldman Sachs	Private finance institution	Provides capital	Investing in energy and infrastructure	Financial returns, risk management	Verdalia Bioenergy Platform ; Climate Innovation and Development Fund	Major global investment bank; Focuses on sustainable finance and climate investing in the real economy.
Ecologistas en Acción	NGO (Spain)	Environmental advocacy	Campaigning for national methane reduction plans; monitoring emissions from fossil fuel	Reducing methane emissions; promoting sustainable energy policies	Advocacy for a 45% methane emission reduction in Spain by 2030 ; participation in EU methane regulation discussions	Member of a coalition urging the Spanish government to implement a national methane reduction plan
Deutsche Umwelthilfe (DUH)	NGO (Germany)	Environmental advocacy	Monitoring environmental compliance; challenging harmful	Preventing unchecked expansion of LNG infrastructure; ensuring environmental regulations are upheld	Opposition to Germany's 'LNG Acceleration Law' ; advocacy against unchecked LNG development	Active in legal and public campaigns to enforce environmental standards

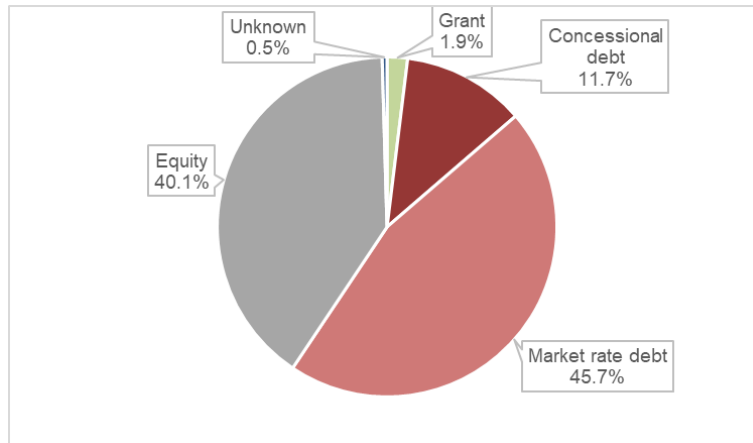
Name of stakeholder	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
			infrastructure projects			
Legambiente	NGO (Italy)	Environmental monitoring	Conducting field campaigns to detect methane leaks; advocating for emission reductions	Reducing methane emissions from fossil fuel infrastructure; promoting environmental awareness	" C'è Puzza di Gas " campaign monitoring methane leaks in Italy; seminars and training sessions	Collaborates with international organizations to enhance methane monitoring efforts
Environmental Defense Fund (EDF)	NGO	Advocates for policy change	Research, public awareness, policy advocacy	Reducing methane emissions, improving air quality	Launched MethaneSAT ; Conducted MethaneAIR ; Partnered with BP ; Co-launched Methane Abatement Partnership Roadmap	Strong focus on environmental advocacy
Clean Air Task Force (CATF)	NGO	Advocates for policy change	Research, public awareness, policy advocacy	Reducing methane emissions, promoting clean energy	Created Country Methane Abatement Tool (COMAT) ; Launched Fossil Fuel Regulatory Programme ; Co-launched Methane Abatement Partnership Roadmap	Focus on pragmatic solutions
ACADIR-ANGOLA	Local (Angola) NGO	Community conservation	Implementing conservation projects, improving livelihoods	Protecting environment, supporting local communities	Participated in SASSCAL 2.0 ; Implemented community-led land and resource management	Focus on Cuando Cubango Province
Caucasus Environmental NGO Network (CENN)	Local (Azerbaijan) NGO	Environmental advocacy	Promoting environmental research and policy	Environmental protection in the Caucasus region	Implemented climate mitigation projects ; Delivered environmental education campaigns	Focus on South Caucasus
Association Environnement et Développement Durable (AEDD)	Local (Algeria) NGO	Humanitarian aid and advocacy	Promoting sustainable development; raising environmental awareness; implementing eco-friendly projects	Environmental protection; sustainable development; community engagement	Neo Zriba Eco-Dome Project: An ecological construction initiative aimed at educating local communities, about environmental protection and sustainable living practices.	AEDD operates primarily in the Illizi region.

Name of stakeholder	Type	Role	Responsibilities	Interests	Relevant initiatives	Other relevant information
World Resources Institute (WRI)	Research institutions	Data, analysis, and policy recommendations	Developing methane mitigation strategies in fossil fuel operations, promoting solutions such as LDAR programmes and improved monitoring practices	Reduce methane emissions	Publications	-
Stockholm Environment Institute (SEI)	Research institutions	Research, consultancy services, and capacity-building	SEI supports developing methane strategies by publishing, which describes practical measures that countries may take to minimise their emissions.	Reduce methane emissions	Publications like the Global Methane Pledge Roadmap	-

Annex 3: Financial instruments used to fund methane abatement across all sectors

According to the latest CPI report, the large majority of financial sources for methane abatement projects across all sectors has been provided through debt, followed by equity and grants. The chart below shows the relative share for each type of financial instruments.

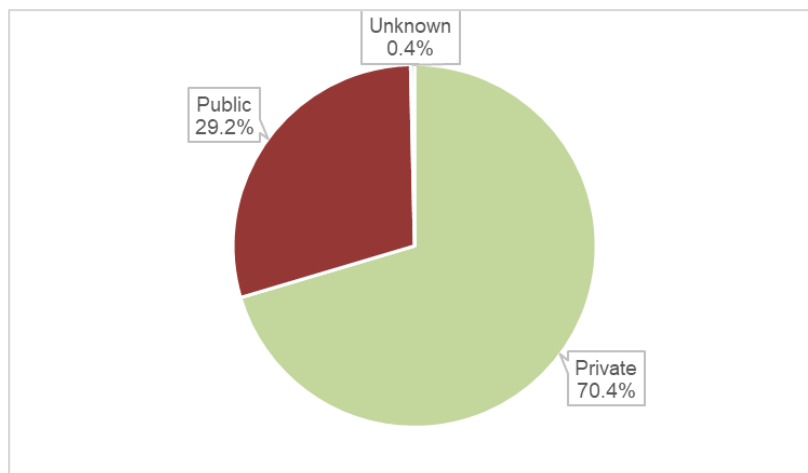
Figure 3: Share of financial instruments used in methane abatement finance, 2021/2022



Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

Looking at the overall investments deployed for methane abatement initiatives across all sectors in 2021/2022, 70% came from private sources, accounting for roughly USD 9.64 billion out of the total USD 13.7 billion. While around USD 4 billion came from public investors, as shown in the chart below.¹⁹⁰

Figure 4: Shares of public and private sources for methane abatement finance, 2021/2022



Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

In terms of the financial instruments used, most investments in methane abatement across all sectors in 2023 came in the form of debt, 63% of which came from private sources (mainly commercial financial institutions). The second biggest sources of financing was equity also

¹⁹⁰ Climate Policy Initiative (2023), *Landscape of Methane Abatement Finance 2023*. Note on the data: the remaining USD 0.05 billion are from unknown resources.

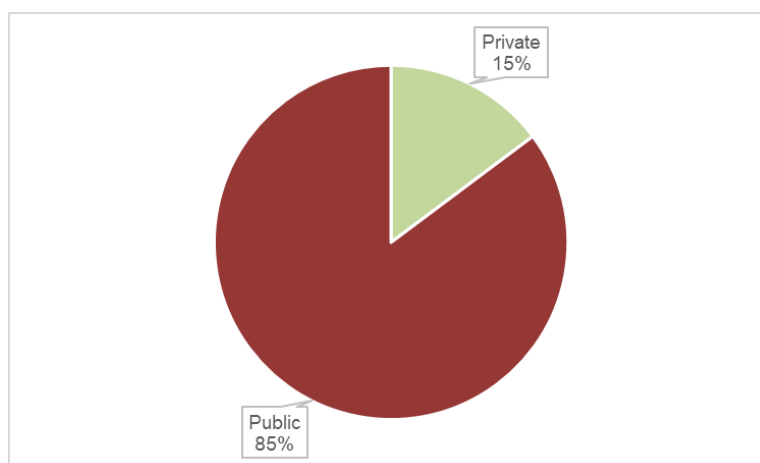
mainly from private sources (83%) such as corporations. Finally, grants and subsidies represented a smaller share of the investments in methane abatement. Nevertheless, these instruments were predominantly provided by public sources (85%) such as governments, multilateral DFIs / MDBs and multilateral climate funds. The main private sources of grants and subsidies for such projects were institutional investors¹⁹¹.

Grants and subsidies

In the context of climate finance, grants and subsidies are defined as transfers made in the form of cash, goods, or services. This financial instrument does not require repayments and are one of the most widespread sources of public climate finance, second only to debt instruments.¹⁹² Focusing on methane abatement, grants and subsidies represents 2% of the total financial flows made available, corresponding to around USD 266.3 billion worldwide.

Looking into the type of public entities involved in providing grants for methane reduction measures, the data on which the CPI report is based shows that, of the overall USD 266.3 billion, 39.4 are from private sources (15% of the total grants), while USD 226 billion are from public sources (85%).

Figure 5: Grants, shares of private and public sources for methane abatement finance, 2023

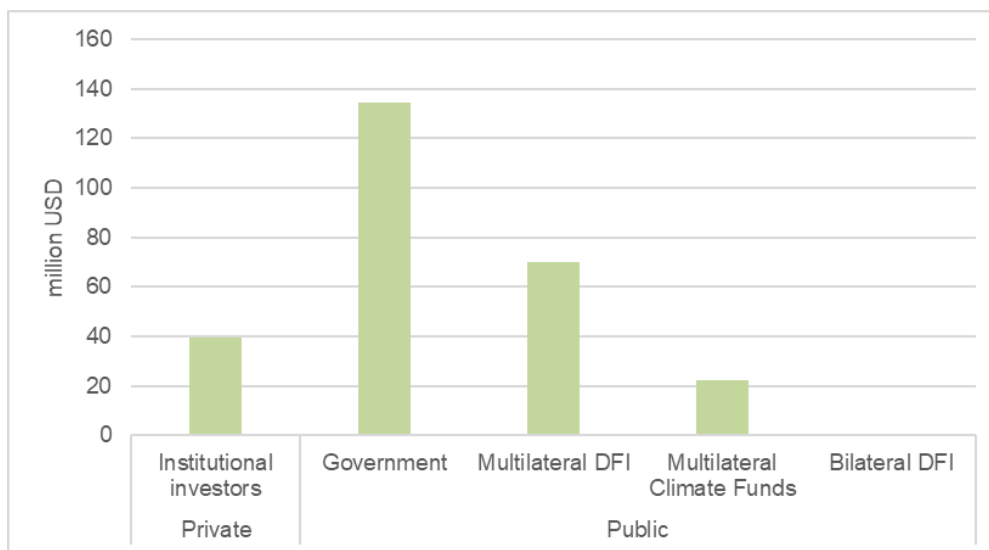


Source: Milieu's calculations based on CPI's Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

Private and Public sources channelled through grants come from different types of actors. Private investors are represented only by institutional investors. On the other hand, Public sources come from four different types of actors: Government sources amount to USD 134.4 million (50% of the total grants), Multilateral DFI amount to USD 70.2 million (26%), Multilateral climate funds amount to USD 22.3 million (9%) while bilateral DFI amount to USD 0.01 million. The following chart provides an overview of the total amounts provided by each type of actor.

¹⁹¹ Climate Policy Initiative (2023), *Landscape of Methane Abatement Finance 2023*, <https://www.climatepolicyinitiative.org/publication/landscape-of-methane-abatement-finance-2023/>.

¹⁹² OECD (2024), *Climate Finance Provided and Mobilised by Developed Countries in 2013-2022*, Climate Finance and the USD 100 Billion Goal, OECD Publishing, Paris, <https://doi.org/10.1787/19150727-en>.

Figure 6: Grants, amounts per actor type, methane abatement finance, 2023

Source: Milieu's calculations based on CPI's Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

Debt instruments

Debt instruments include loans and bonds, and their categorisation in the context of climate finance depends on the terms used to define the financing source and the purpose of the instrument being deployed. In this section we focus on the concessional and market rate debt. Purpose linked is described in the following box given the lack of relevant data on methane abatement projects.

Box 7: Sustainable debt

From a broader perspective, when we consider debt instruments that aim to produce or to achieve sustainability goals, we refer to sustainable debt. Sustainable debt can be divided into two major categories of instruments:

- Use of proceeds instruments – the funds raised are directed to a specific purpose. This category is divided into green bonds, green loans, social bonds and sustainability bonds. And
- Sustainability-linked instruments – the terms of financing are linked to achieving specified environmental (or sustainability) outcomes. This category is divided into sustainability-linked bond and sustainability-linked loan.¹⁹³

According to the Environmental Defense Fund, between 2014 and 2023 a total of USD 7 trillion have been issued.¹⁹⁴ Of these, three quarters (75%) are use of proceeds instruments, while the remaining share are sustainability linked instruments. The figure below shows the shares of each type of sustainable finance instrument.

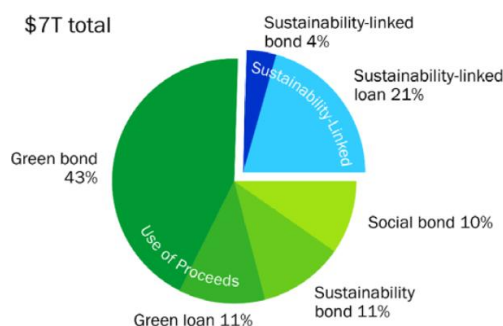
Green bonds are the most established and widely used category of sustainable debt instruments, representing nearly half of the overall market. From an investor's perspective, they are financially identical to conventional bonds, offering fixed returns without additional risk linked to their sustainability objectives. Their distinguishing feature lies in the requirement that proceeds are allocated to projects with clearly defined and measurable

¹⁹³ Howell, A., Mathur, S., Suki, L., Environmental Defense Fund, 2024. Financing Methane Abatement: Report On Sustainable Finance Instruments. An introduction to sustainable finance for methane abatement

¹⁹⁴ Ibid.

environmental benefits.

Figure 7: Sustainable debt by instrument type, issued 2014-2023



Source: Environmental Defense Fund, 2024. Financing Methane Abatement: Report On Sustainable Finance Instruments. An introduction to sustainable finance for methane abatement

Sustainability-linked instruments offer an alternative to use-of-proceeds bonds, allowing issuers to raise capital for general purposes while committing to defined sustainability performance targets (SPTs). Unlike green bonds, which restrict the use of funds to specific eligible activities, these instruments provide greater flexibility in how proceeds are spent—making them suitable for

investments that may reduce emissions but fall outside the narrow criteria of green bonds. Progress is measured through key performance indicators (KPIs), and failure to meet SPTs typically results in a financial penalty, such as a coupon step-up.

These instruments currently account for around 25% of sustainable debt issuance, though their uptake declined recently amid concerns over weak design, insufficient transparency, and low ambition—especially in the case of sustainability-linked loans (SLLs), which are often private and not subject to public reporting. Enhancing the credibility of sustainability-linked transactions requires clear, ambitious SPTs and KPIs, enforceable consequences for non-compliance, and strong reporting and verification mechanisms. KPIs should be tailored to the issuer's sector and sustainability goals.

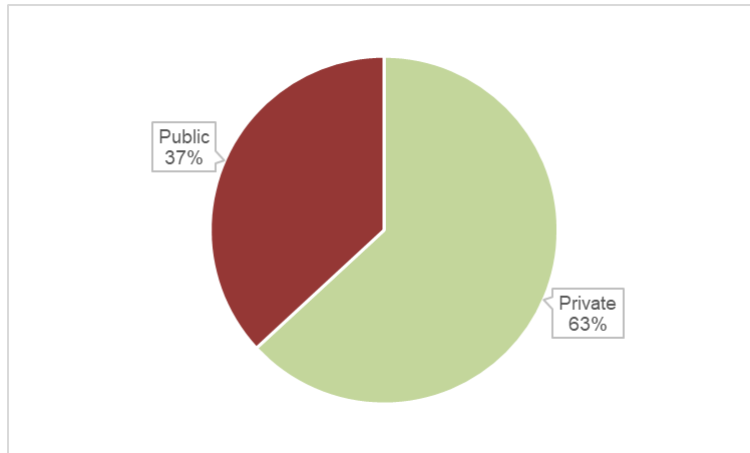
Data on methane abatement debt instruments is available on the basis of the terms of financial instruments, i.e., the interest rate. In light of this, debt instruments are divided into two subcategories: Concessional debt and Market rate debt. Concessional debts are loans or bond that have more preferential terms than those available on the market. This includes below-market interest rate and/or extended grace periods. The most recurring form of concessional debt are senior loans and subordinated loans.¹⁹⁵ Market-rate debt are loans granted at regular market conditions. This type of debt includes, among others, term loan, credit facility, bridge loan, and mezzanine debt. With specific regard to companies and financial institutions, market rate debt includes also balance sheet financing, meaning direct debt investment.¹⁹⁶

Of the total amount deployed through debt instruments, around USD 5 billion is provided through private sources, representing around 63% of the total debt instruments in the context of methane abatement projects. The remaining 37% is sourced from public sources and amounts to USD 2.9 billion. However, the mix of type of debts varies considerably when looking at the dichotomy concessional/market rate debt.

¹⁹⁵ CPI. 2024. Understanding Global Concessional Climate Finance 2024. Available online: www.climatepolicyinitiative.org/publication/understanding-global-concessionalclimate-finance-2024

¹⁹⁶ CPI, 2023. Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions

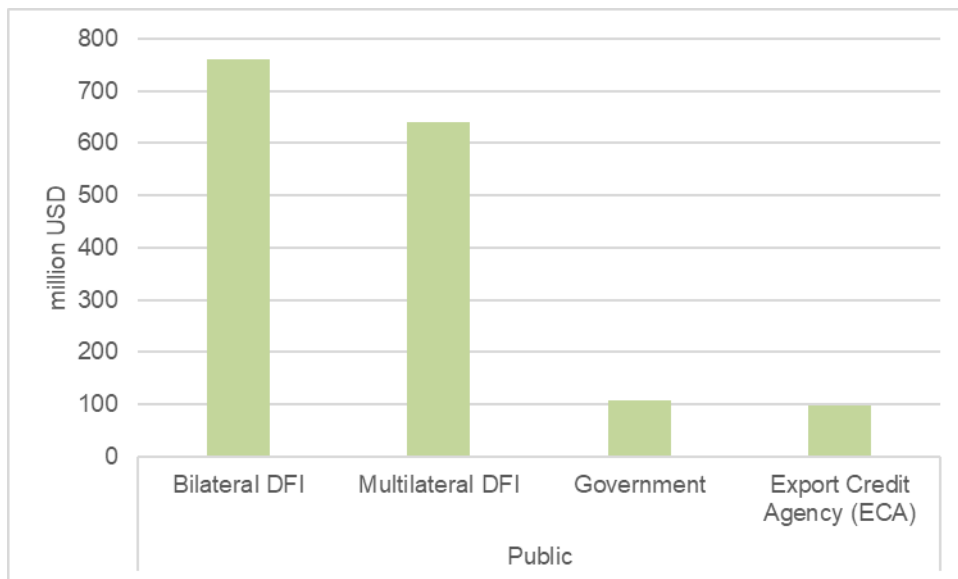
Figure 8: Debt, shares of private and public sources for methane abatement finance, 2023



Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

The entirety of the concessional debt instruments is sourced from public actors. Around USD 760 million is sourced through bilateral DFI, followed by Multilateral DFI (USD 640 billion), Government (USD 107 million) and ECAs (USD 97 million). It is worth noting that the trend we see in the context of methane abatement projects mirrors the wider trends of concessional climate finance instruments.¹⁹⁷

Figure 9: Concessional debt, amounts per actor type, methane abatement finance, 2023



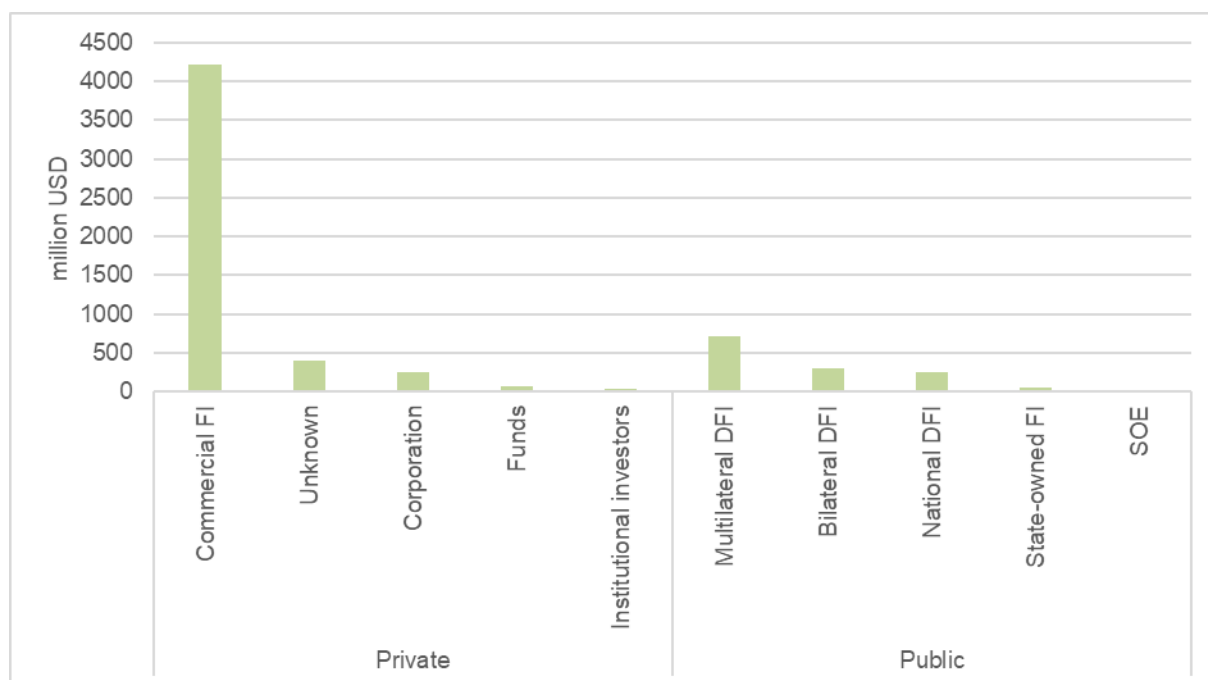
Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

On the other hand, the landscape of the main actors providing market rate debt presents a variety of private and public entities. The majority of market rate debt is provided by commercial FI. This category of actors provides more than USD 4.2 billion, which represents more than 30% of the entire financial instruments deployed for methane abatement initiatives (and more than 53% of the totality of debt instruments). Commercial FI are followed by unknown private entities (USD 400 million), corporations (USD 243 million), funds (USD 59 million) and institutional investors (USD 39 million).

¹⁹⁷ The CPI’s report on concessional climate finance highlighted that most international concessional climate finance was provided by bilateral DFIs (33%), followed by multilateral DFIs (30%) and governments (26%).

Among public entities, multilateral DFIs provides around USD 706 million, followed by bilateral DFI (USD 296 million), national DFI (USD 243 million), state-owned FI (USD 44 million) and SOE (USD 4 million). The chart below presents an overview of these amounts.

Figure 10: Market rate debt, amounts per actor type, methane abatement finance, 2023



Source: Milieu's calculations based on CPI's Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

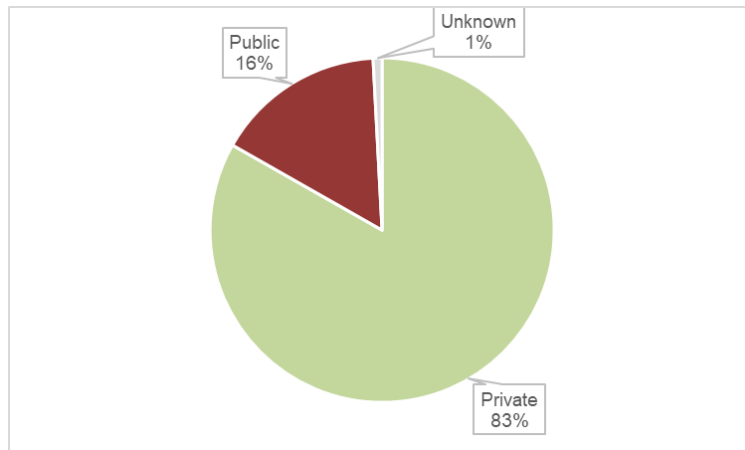
Equity instruments

Equity instruments refer to those investments in project level equity and that relies on the project's cash flow for repayment, and balance sheet financing, consisting in direct equity investment by a company or financial institution. According to CPI, equity instruments represented 32% of the total investments in mitigation finance during the period 2018-2022.¹⁹⁸

Equity investments in the methane abatement projects amount to USD 5.5 billion, amounting to 40% of the total investments, as seen above. Of the total amount of investments deployed through equity instruments, around USD 4.6 billion are provided through private sources (83% of the total equity investments), while public investments amount to USD 876 million (16%). The remaining, USD 46 million are provided through unknown sources.

¹⁹⁸ CPI. 2024. Global Landscape of Climate Finance 2024: Insights for COP 29. Available online: climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2024

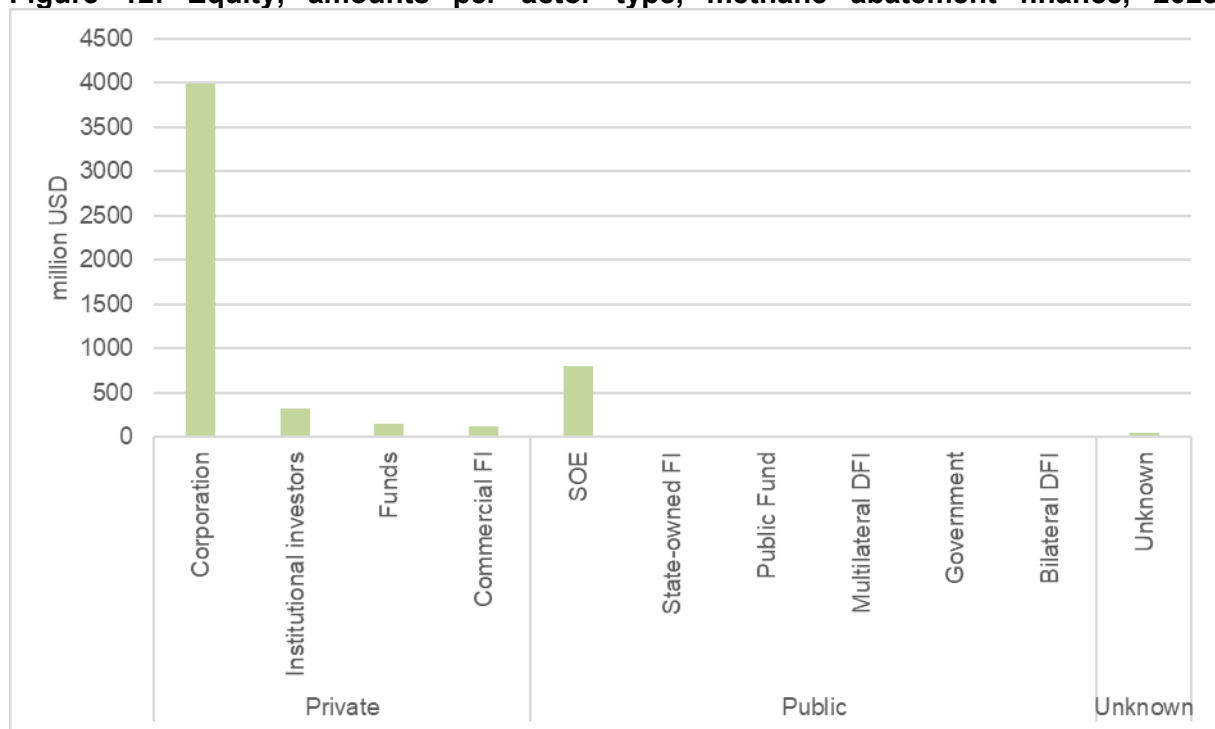
Figure 11: Equity, shares of private and public sources for methane abatement finance, 2023



Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.

Looking at the landscape of the various types of investors, the large majority of equity investments are provided by corporations. This category provides almost USD 4 billion, which is almost three quarters of the total investments through equity-related instruments. Corporations are followed by SOEs which provides around USD 800 million through equity instruments (14%), institutional investors providing USD 326 million (6%). The chart below shows the profound differences between private and public investors financing methane abatement activities through equity instruments.

Figure 12: Equity, amounts per actor type, methane abatement finance, 2023



Source: Milieu’s calculations based on CPI’s Landscape of Methane Abatement Finance 2023 Data Methodological Note and Instructions.