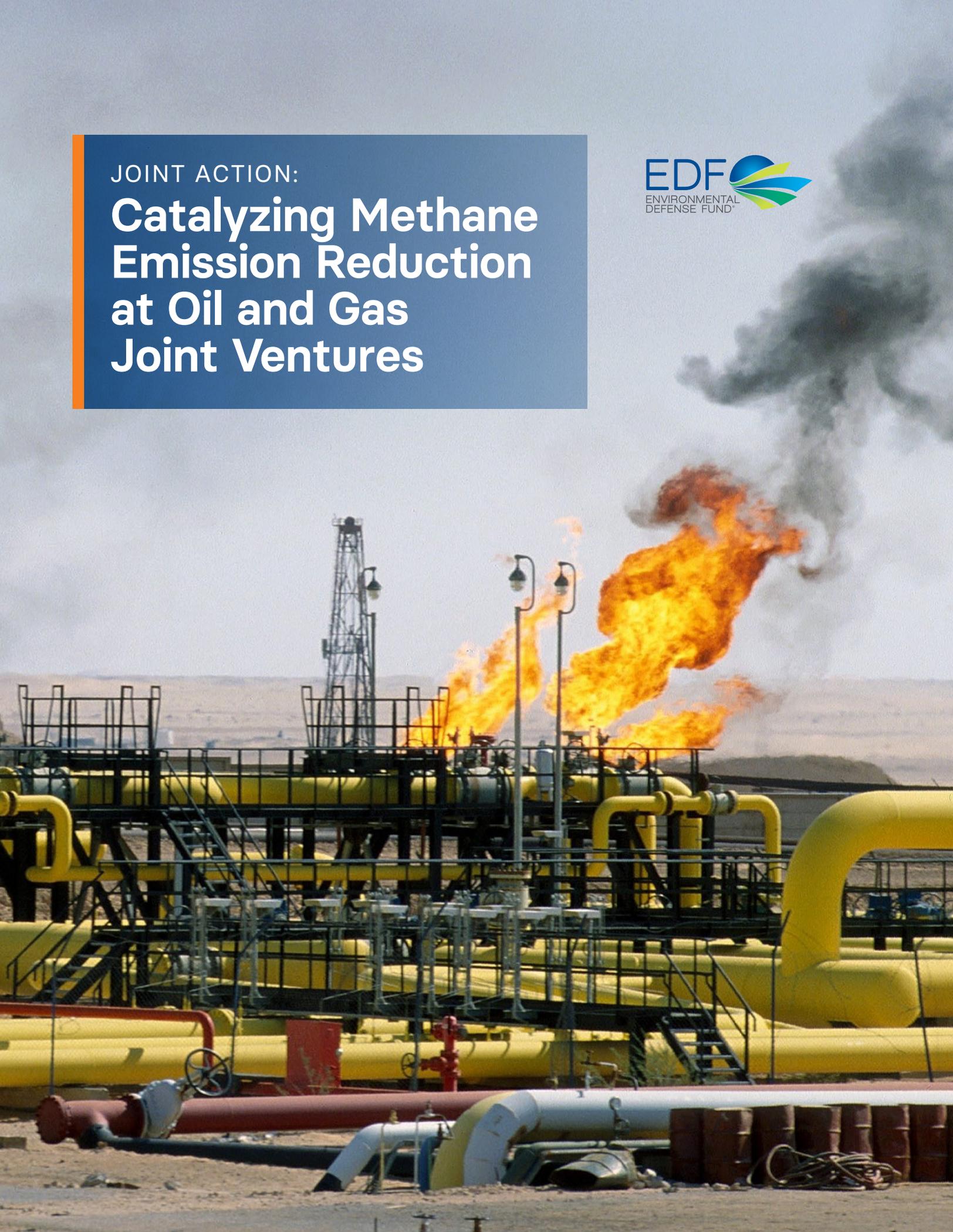


JOINT ACTION:

Catalyzing Methane Emission Reduction at Oil and Gas Joint Ventures



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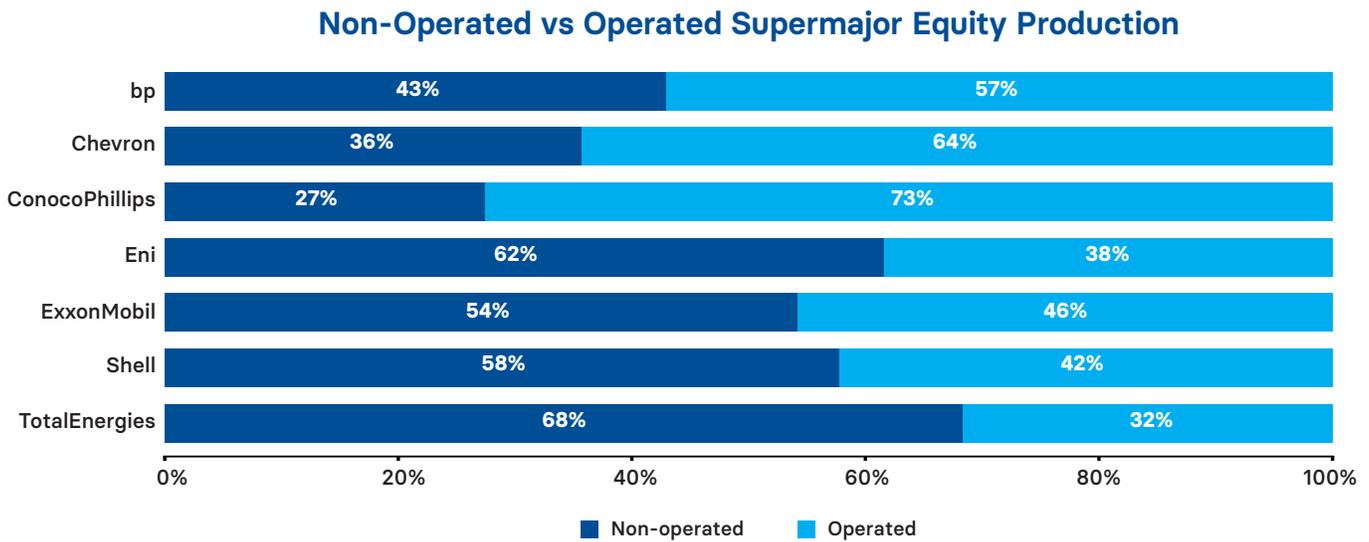
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Glossary

Asset	Operational upstream equipment and facilities that represent the development and production phase of the oil and gas value chain, i.e. wells and associated surface facilities for separation and treatment.
Equity Reporting	The reporting of information (financial, environmental, etc.) across assets where a company is a shareholder by equity stake - i.e., participating share of emissions both from facilities that a company operates and from their non-operated joint ventures.
Incorporated Joint Venture (IJV)	A joint venture that is organized as a separate legal entity, also referred to as an Operating Company, and must conform to laws that govern the relationship among shareholders or owners and management.
International Oil Company (IOC)	A publicly traded oil and gas company with international operations.
Joint Venture (JV)	A business entity created by two or more parties, generally characterized by shared ownership, shared returns and risks, and shared governance. All joint ventures have an operator and non-operating partners.
National Oil Company (NOC)	An oil and gas company that is wholly or majority owned by a national government.
Non-Operated Joint Venture (NOJV)	A joint venture where a company owns an equity interest in the asset, but it is operated by another company. NOJV assets are referred to as non-operated assets and the production is termed non-operated production.
Operating Company	An oil and gas company that may be independent or formed by a JV contract which oversees the operation of an asset.
Supermajors	The world's largest publicly traded international oil companies including bp, Chevron, ConocoPhillips, Eni, ExxonMobil, Shell, and TotalEnergies.
Unincorporated Joint Venture (UJV)	A joint venture that is not organized as a separate legal entity. UJVs are instead operated by one of the partner companies.

Executive Summary

Joint ventures are common operating models that are as central to the oil and gas industry as the fossil fuels extracted from the ground. On average, 50% of the equity production from international oil companies (IOCs) comes from joint ventures where the IOC owns a share of the project but does not operate it – known as non-operated joint ventures (NOJVs). So does a large share of their emissions, including methane, the supercharged greenhouse gas that has emerged as the industry’s most pressing challenge.



Joint ventures are not beholden to the same rules as solely owned IOC operations, and with regional environmental standards varying significantly around the globe, NOJVs continue to represent a unique challenge in managing and disclosing methane emissions and flaring.¹ Controlling these emissions is crucial: the International Energy Agency found that significant cuts to oil and gas methane emissions by 2030 are needed to “[keep open the door](#)” to limiting global temperature rise to 1.5°C.

The largest publicly traded IOCs, or supermajors,¹ are increasingly responding to this challenge by setting emissions reduction targets. Most of these apply only to emissions from assets they operate – NOJVs are rarely included. Due to the complicated nature of joint venture structures, the various companies and countries that may be part of the venture, and the arm’s-length approach with which many IOCs manage their NOJVs, a company’s full emissions – and the associated climate risk and responsibility - can be difficult or impossible to ascertain.

¹ “[Why we need clearer ESG metrics around gas flaring](#)” Capterio, 14 June 2021

This paper focuses on IOCs' non-operated joint ventures with national oil companies (NOCs). The third in a series, it builds on [The Next Frontier](#) (2018), which examined the scale and scope of climate risk at NOJVs, and [Emission Omission](#) (2020), which focused on investment risk.

Here, we analyze complexities in quantifying methane emissions from joint ventures, the key partnerships IOCs can use to drive joint venture methane reduction, and the strategies non-operating partners can deploy to improve methane management at existing and future joint ventures.

The companies analyzed in this report are a well-resourced class of oil and gas leaders that are sought after as partners thanks to their technical and financial resources. They have announced methane reduction targets, and it is time for those targets to extend to their whole portfolios, including their NOJVs.

The NOJV challenge is a barrier to the systemic industry-wide change that we need to reduce emissions. Embedding climate governance into NOJVs is not only critical to reducing the industry's methane footprint beyond the operations of publicly traded entities. It can also address the problem of transferred emissions by ensuring that climate stewardship is engrained across all assets and can withstand changes in ownership.

Methodology

Environmental Defense Fund (EDF) analyzed the portfolios of the world's largest publicly traded international oil companies, known as the supermajors. These seven companies are bp, Chevron, ConocoPhillips, Eni, ExxonMobil, Shell and TotalEnergies.

EDF conducted internal analysis to estimate the portfolios of these companies using data from the Rystad Energy UCube Database. Rystad builds its dataset of global oil and gas production based on bottom-up estimates from individual fields. Field-specific data is sourced from reports by companies or countries, as well as estimated based on internal models. Our analysis uses 2021 production data, including crude oil, condensate, natural gas liquids and gas reported in barrels of oil equivalent. Production estimates throughout this paper are stated on an equity basis, where company production is estimated from all operated and non-operated assets based on the company's equity share. For example, if a company owns 10.2% of an asset, they are credited with 10.2% of the production from that asset.

Highlights



International oil companies (IOCs) Responsibility

IOCs have the societal obligation to incentivize their operating partners to accelerate the energy transition, and the means to deliver, in ways consistent with their own corporate commitments. This includes addressing methane emissions and flaring, but also opportunities to diversify away from hydrocarbons.



Non-operated joint ventures (NOJVs) Opportunity

NOJVs present one of the most significant opportunities to manage climate risk, secure new emissions reduction commitments, source financing, and distribute technical expertise to national oil companies that will drive real-world emission reductions fast.



Climate Governance

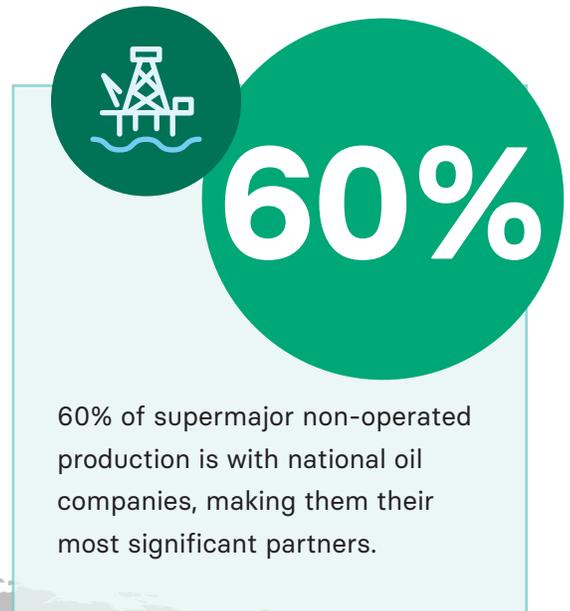
Embedding climate governance into future and existing joint ventures is not only critical to reducing the industry's methane footprint, but also to address the problem of [transferred emissions](#) by ensuring that climate stewardship is engrained across all assets and can withstand changes in ownership.



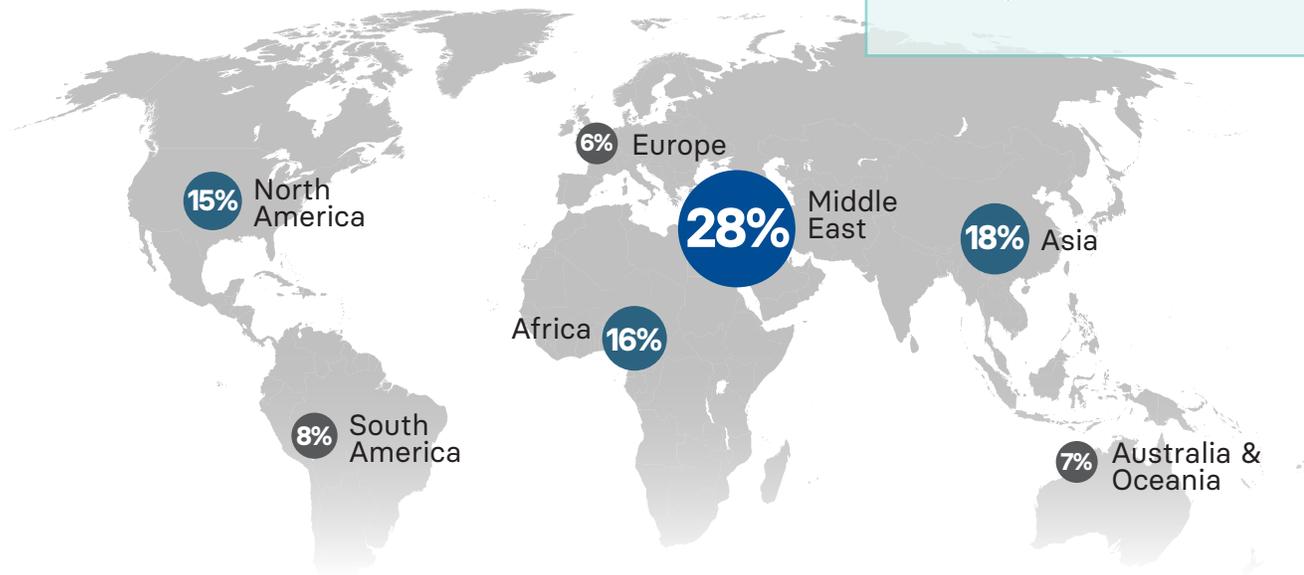
Complete Coverage

The financial returns that supermajors enjoy from NOJVs are important components of their balance sheets. Their emissions reduction targets should extend to these assets and equity emissions should be declared clearly in their emissions accounting, along with disclosure that allows stakeholders to evaluate progress against reduction targets at NOJVs.

Key Facts & Statistics



Supermajor non-operated production:



75% of supermajor non-operated production is in regions with weak regulatory capacity and where NOCs dominate production.

50% of gas flared globally comes from oil and gas production in the Middle East and Africa where 45% of supermajor non-operated production takes place.

30% The total share of global oil and gas production that would be bound by emissions targets if supermajors extended their methane commitments to their NOJVs, up from 11%.

45% The total share of global oil and gas production that would be bound by emissions targets if all of the supermajors' operating partners adopted similar company-wide methane targets and disclosure practices.

PART 1:

The Role and Impact of Joint Ventures

Despite the commercial advantages of joint ventures, they are also a significant source of hidden climate risk in the oil and gas value chain. This report focuses on non-operated joint ventures (NOJVs) – assets in which IOCs hold an equity stake but are operated and managed by another company. Among the oil and gas supermajors, 50% of their equity production comes from NOJVs.

Oil and Gas Ownership

The portfolios of the world's largest publicly traded international oil companies (IOCs), or supermajors, are comprised of two types of assets: wholly-owned assets and joint ventures. Wholly-owned assets are straight-forward: they are fully controlled and operated by the company and use the company's standards for processes, tools and systems. However, only 10-25% of the supermajors' assets are wholly owned.

The remaining 75-90% of assets are part of joint ventures. Joint ventures spread the costs, revenues and risks of a shared business opportunity.²

Common drivers include:



Sharing risk and reward – To mitigate technical, commercial, and economic risk, many operators choose to share risk with partners. Equally, joint ventures have the potential to increase profits by securing higher return on capital, increasing production, and accessing new capital through shared investment.



Accessing new energy sources – Joint ventures are important options for companies to gain access to resources and unlock new revenue streams – it is often a regulatory requirement in NOC-dominated markets. Market entry can be gained through strategies that grow the business based on partnerships in new regions with local companies.



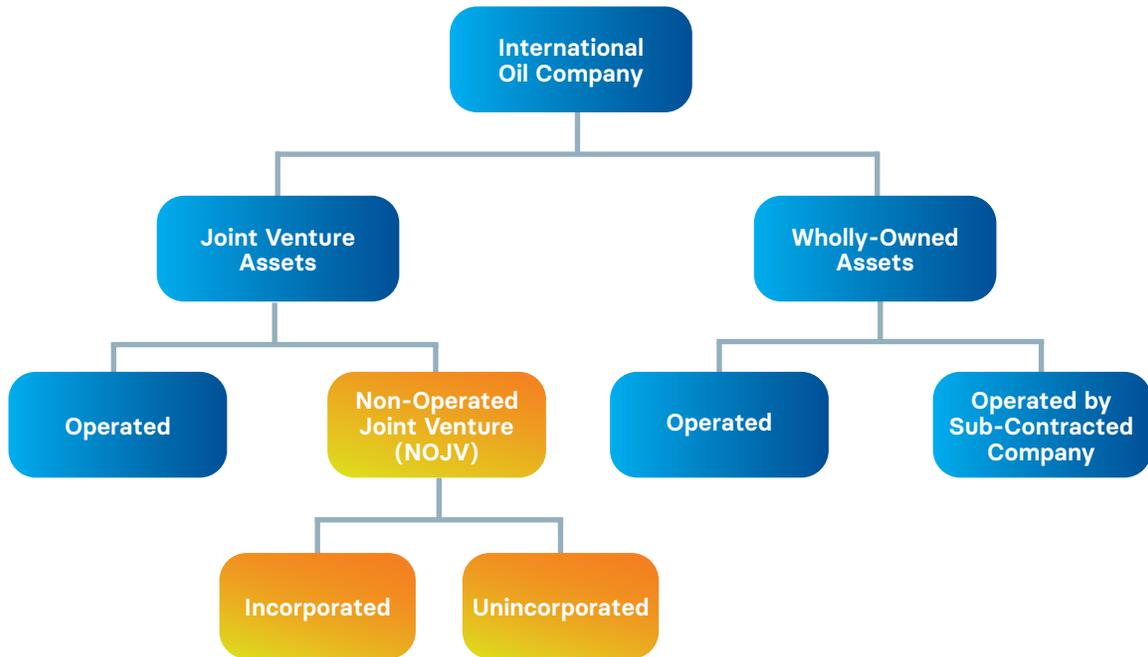
Sharing technology and expertise – Joint ventures bring access to cutting edge technologies, digital capabilities, and capacity and experience to modernize, optimize and improve operational efficiency of oil and gas fields. This is particularly relevant for NOCs who have historically lacked key technology and/or capabilities.

In cases where a NOJV is operated by one of the partner companies, it is referred to as unincorporated. The operator will usually use its own standards for processes, tools and systems at the asset. The asset will also be held under any emission reduction targets the operator may have. The other parties are then known as non-operating partners and typically do not get involved in the day-to-day operations.

Alternatively, NOJVs can be incorporated when a new joint venture operating company is formed by one or more of the partners to operate the asset. In the case of an incorporated NOJV, all the oil and gas companies that own the asset are non-operating partners. However, as shareholders, they can wield leverage and influence.³

² "What is a Joint Venture?" Corporate Finance Institute, 10 February 2022.

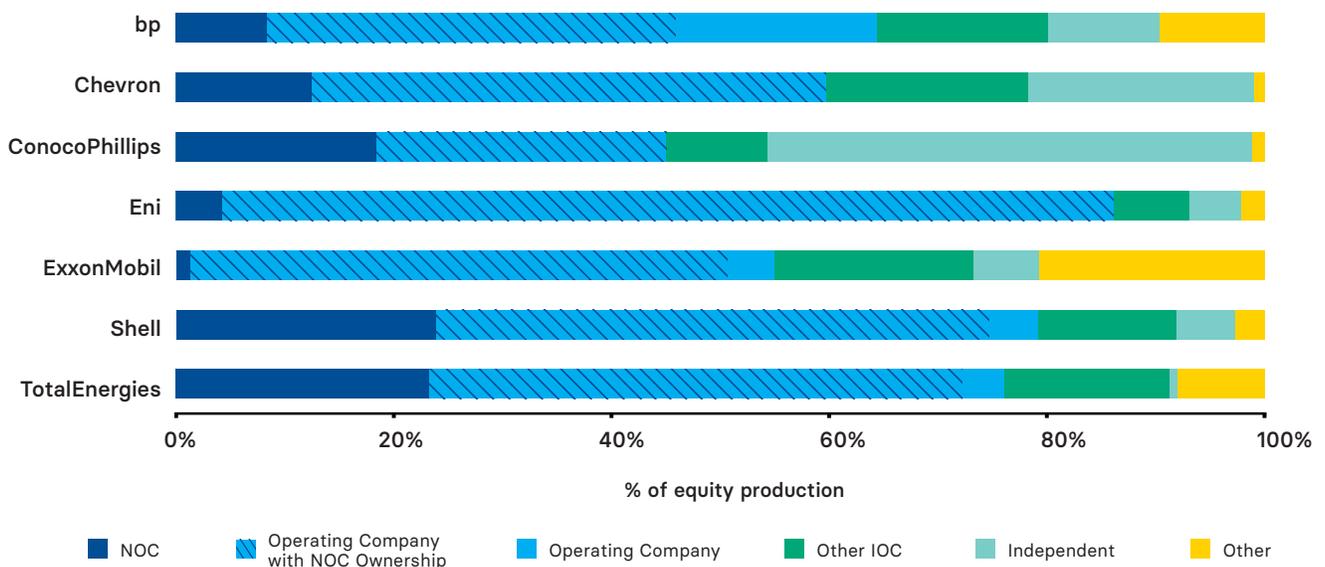
³ "Ensure that Your Joint Ventures Meet Your ESG Goals" Ankura, 03 June 2022



4

Every joint venture has an operator and non-operating partners with varying equity stakes and with different standards and practices for emissions management. Typical partners of the supermajors include other IOCs, national oil companies (NOCs), independents and joint venture operating companies.⁵ NOCs are supermajors' most significant partners, responsible for an average of 60% of their non-operated production, including through NOC-owned operating companies.

Non-Operated Joint Venture Production by Operator Type



⁴ Note: incorporated and unincorporated structures also apply to operated joint ventures. For simplicity of this diagram and purposes of this report, we will focus on the different risks and influencing pathways associated with incorporated and unincorporated non-operated joint ventures.

⁵ "Other" includes operators that Rystad denotes as industrial, integrated, investor, and E&P companies.

Mapping Relationships and Risks

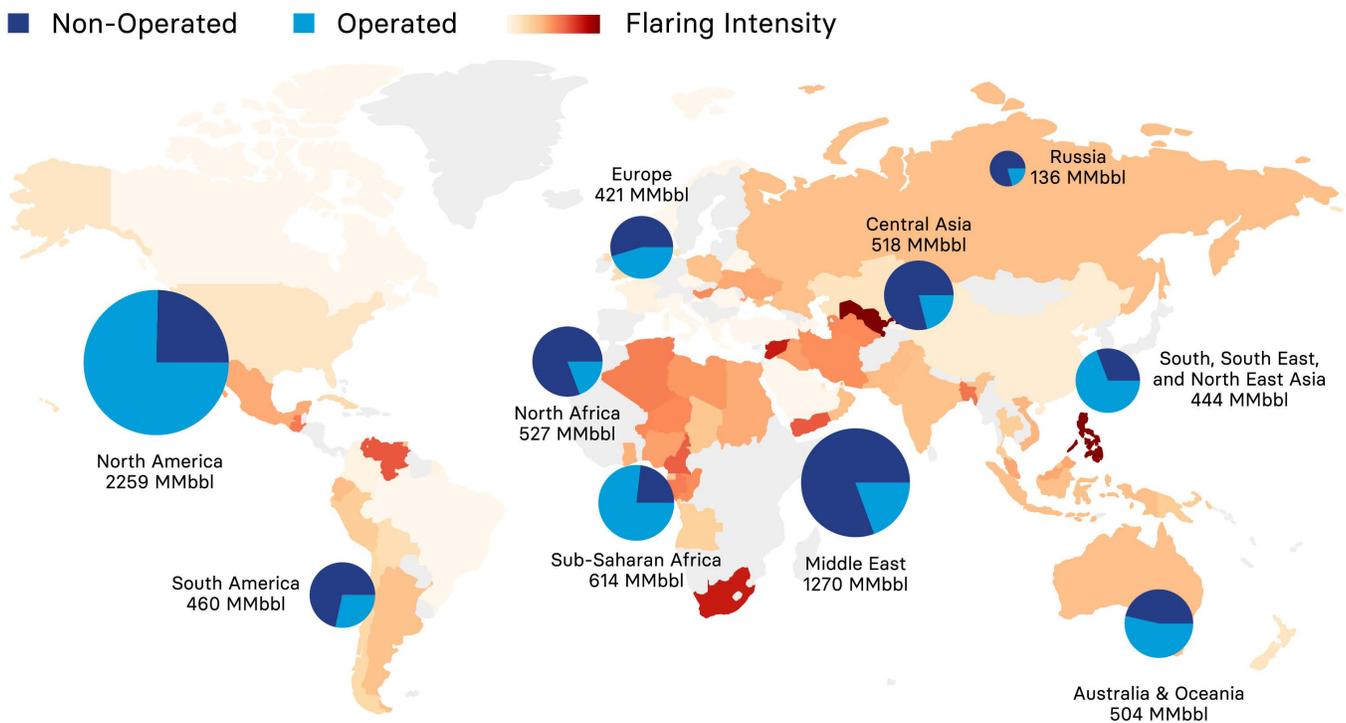
All seven oil and gas supermajors – bp, Chevron, ConocoPhillips, Eni, ExxonMobil, Shell, and TotalEnergies – are publicly-traded companies headquartered in the United States or Europe, where nearly all existing and pending methane regulatory action has occurred. This places these companies under regular scrutiny from the public, industry regulators, and investors to manage methane emissions in a transparent and socially and environmentally responsible manner.

This pressure and accountability can be almost entirely absent in many other regions where these companies have NOJVs.

The supermajors have equity stakes in NOJVs in every corner of the world. Collectively, this non-operated production is concentrated in the Middle East, followed by Africa, North America and Asia. Secondary regions include South America, Australia and Oceania, and Europe.

Nearly 75% of their non-operated production takes place in regions that currently have weaker regulatory capacity and where NOCs dominate oil and gas production.

Global Distribution of Non-operated vs Operated Supermajor Equity Production and Annual Average Country Gas Flaring Intensities (2021)



Country gas flaring intensity (flaring per barrel, a measure of operational performance), were provided by Capterio. Flaring intensity is calculated from publicly available data on upstream flaring from Capterio's FlareIntel Free tool and publicly available liquids production (crude and condensate) from the EIA. The global average flaring intensity for 2021 was 5.1 M³ per barrel.

Flaring: A Key Indicator of Climate Risk

Gas flaring is only one source of methane emissions throughout the oil and gas supply chain, but [flaring volumes and patterns](#) provide highly visible evidence of where environmental standards are lacking and companies are most exposed.

Flaring is the intentional burning of natural gas. Though limited flaring may be necessary for safety reasons (i.e., during emergency pressure relief), it is often used to dispose of natural gas an operator is not prepared to or interested in capturing. This is not only a wasteful practice – destroying a natural resource for no societal benefit – but it generates carbon dioxide, methane emissions, and other harmful air pollutants, including carcinogens and black carbon.

In 2021, the upstream oil and gas industry flared approximately 144 billion cubic meters (bcm) of gas, or about 4% of global gas production, representing USD\$21 billion in value if the gas had been captured and sold.⁶

Regions where non-operated production from NOJVs is highest correlates with high levels of gas flaring. Together, the Middle East and Africa account for 47% of non-operated production and 50% of total global flaring volumes.



⁶ Flaring estimates from the World Bank; gas production values calculated using an average Henry Hub gas price for 2021 (USD\$144 million/bcm) and total gas production data from Rystad UCube.

PART 2:

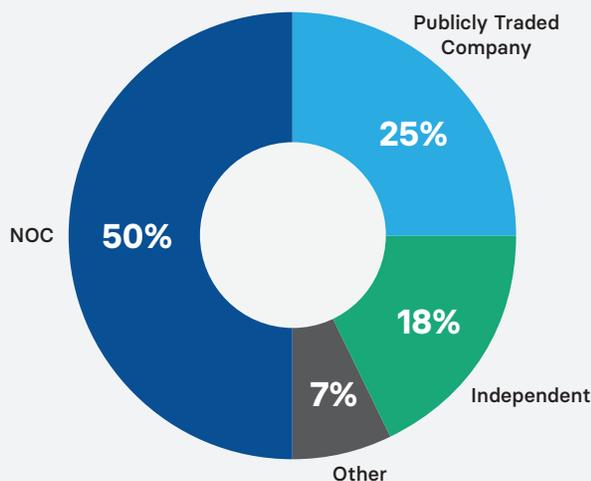
Leveraging Joint Ventures to Activate National Oil Companies

Joint ventures present one of the most significant opportunities to manage the oil and gas industry's climate risk, secure new emission reduction commitments, source financing and distribute technical expertise that will drive real-world emission reductions.

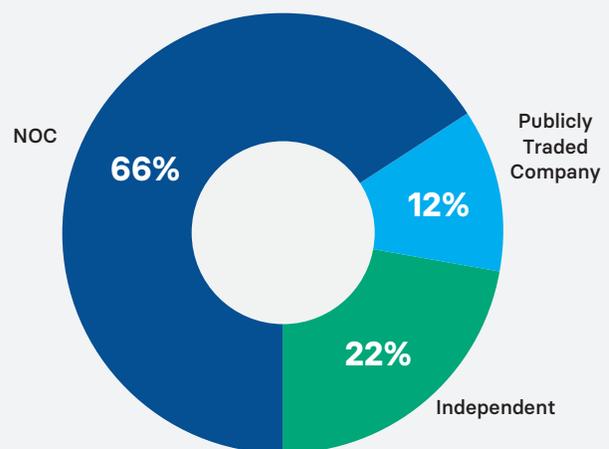
National Oil Companies

National Oil Companies (NOCs) are fully- or majority-owned by a national government. They are a heterogeneous group, covering a broad range of corporate structures, governance models, and commercial and social directives. NOCs produce half the world's oil and gas and hold 66% of global oil reserves – solidifying their influence not only in the industry today but in the future of oil and gas and an energy transition away from reliance on hydrocarbons.

Global Equity Production by Company Type



Share of Global Oil Reserves, 2018⁷



NOCs are critical stakeholders to achieving deep cuts in global methane emissions; countries where NOCs dominate [account for 75%](#) of all oil and gas sector methane emissions. However, while a few NOCs have significant technical capacity, many NOCs are either under-resourced or lack regulatory frameworks to make systemic changes to address GHG emissions. Existing structural processes, such as existing joint venture contracts and regulations, can indeed inhibit effective methane management and discourage transparency and mitigation.

Shareholder engagement has been instrumental in driving progress with publicly traded companies in the oil and gas industry, but few NOCs are subject to the same pressures. Barring a few exceptions, they have largely [lagged behind](#) their IOC counterparts when it comes to tackling GHG emissions. As a result, the management and disclosure of emissions from NOC operations is largely unknown.

⁷ Source: IEA, Share of oil reserves, oil production and oil upstream investment by company type, 2018, IEA, Paris www.iea.org/data-and-statistics/charts/share-of-oil-reserves-oil-production-and-oil-upstream-investment-by-company-type-2018, IEA.

NOC-IOC Exposures

IOCs have deep relationships with NOCs, and because of NOJV partnerships they have a responsibility to manage the emissions at these assets. IOCs have the means and a societal obligation to incentivize their operating partners to engage in the energy transition in ways consistent with their own corporate commitments.

Given that IOCs take a share of the profits, they should be accountable to reduce climate pollution and environmental harm stemming from these assets. They should supply integrated technical and financial support to enable their NOC operating partners to reduce emissions, similar to how they have provided technical and financial resources to develop oil and gas fields.

The creation of a methane emissions (or more general GHG emissions) sub-committee can be an efficient tool to ensure that the topic is addressed in advance of the Operating Committees (joint venture decision-making committee). IOCs should consider creating space within the joint venture governance structure to propose activities and concrete action as a first step on this journey.

Ensuring that NOC partners can credibly demonstrate methane emission reductions will not only benefit the climate, but it will also mitigate potential regulatory and reputational risks, and improve access to markets that demand lower carbon energy for all partners involved in the operations.

The following table shows the top NOC-IOC exposures. There are many ways to chart the depth of exposure to NOCs; the table below looks specifically at operations in the NOC host country where an IOC is an equity partner, an operator of an asset with NOC ownership, and where the NOC is responsible for operating the asset under their own set of targets and operating standards.

The table below illustrates that the IOCs analyzed in this report often share a high magnitude of exposure to NOCs and thus have the ability to jointly encourage and enable their NOC partners to address methane emissions, flaring, and the energy transition. The larger the exposure, the more surface area to collaborate on methane and other GHG emissions.

Another observation is that the host governments of many NOCs have recently signed the Global Methane Pledge, launched at COP26 in 2021, a non-binding agreement to reduce global methane emissions by 30% below 2020 levels by 2030. This creates a new paradigm where approaches by the IOC to enable methane emission reductions at joint ventures with these NOCs may be more receptive than in the past.

Top NOC-IOC Exposures

Country	GMP ⁱ	National Oil Company	Country Average Flaring Intensity ⁱⁱ	Initiatives		IOC's total NOC-exposed equity production as a percent of the country's total production. ⁱⁱⁱ		
				OGMP ^{iv}	WB ZRF30 ^v	1	2	3
Tunisia	✓	ETAP	21.1	✗	✓	Eni (6.5%)	Shell (5.0%)	--
Algeria	✗	Sonatrach	19.7	✗	✓	TotalEnergies (3.5%)	Eni (2.7%)	bp (1.4%)
Libya	✓	NOC	13.2	✗	✗	Eni (13.2%)	TotalEnergies (7.5%)	ConocoPhillips (4.2%)
Nigeria	✓	NNPC	11.7	✗	✓	TotalEnergies (7.1%)	Chevron (4.7%)	Shell (4.6%)
Malaysia	✓	Petronas	10.7	✓	✓	Shell (10.7%)	ExxonMobil (4.7%)	ConocoPhillips (4.0%)
Egypt	✓	EGPC	10.2	✗	✓	Eni (28.4%)	bp (10.0%)	Shell (0.2%)
Oman	✓	Petroleum Development Oman (PDO)	7.0	✓	✓	Shell (22.5%)	TotalEnergies (2.7%)	--
Argentina	✓	YPF	6.7	✗	✗	Chevron (2.3%)	Shell (2.0%)	bp (1.4%)
Thailand	✗	PTTEP	4.6	✗	✗	Chevron (8.2%)	ExxonMobil (0.4%)	TotalEnergies (0.2%)
Kazakhstan	✗	KazMunayGas	2.3	✗	✓	Chevron (18.6%)	ExxonMobil (10.9%)	Eni & Shell (7.6%)
Qatar	✓	QatarEnergy	2.1	✓	✓	ExxonMobil (18.1%)	TotalEnergies (3.2%)	Shell (1.6%)
Colombia	✓	Ecopetrol	1.2	✓	✓	TotalEnergies (0.1%)	--	--
Brazil	✓	Petrobras	0.9	✗	✓	Shell (11.4%)	TotalEnergies (2.6%)	--
UAE	✓	ADNOC	0.8	✓	✗	TotalEnergies (8.1%)	ExxonMobil (4.3%)	bp (3.6%)
Norway	✓	Equinor	0.2	✓	✓	TotalEnergies (3.5%)	Shell (2.4%)	ConocoPhillips (1.7%)

i The United States and the European Union initiated the [Global Methane Pledge \(GMP\)](#) in 2021 at COP26, a non-binding agreement to reduce global methane emissions by 30% below 2020 levels by 2030. More than 122 countries have joined the pledge, representing nearly 50% of global anthropogenic methane emissions and over two thirds of global GDP.

ii Source: World Bank's [Global Gas Flaring Tracker](#), Global Gas Flaring Reduction Partnership (GGFR). Country-level estimates of routine flaring intensity (M³ per barrel), 2021. The GGFR's average global flaring intensity in 2021 was ~5.08 M³/bbl.

iii This analysis accounts for all supermajor exposures in 2021 to our selected NOCs (including via NOC subsidiaries and operating companies with NOC ownership), regardless of equity %. Production data for the IOCs and countries is from the Rystad Energy UCube Database. NOCs were selected considering countries with the highest supermajor non-operated equity production and largest NOCs by annual production. We consider all NOC relationships with supermajors via shared assets in the NOC's home country, including ones the NOC operates, ones that a subsidiary of the NOC operates, and ones that an operating company with significant NOC ownership operates. We also consider joint ventures with NOC ownership where the IOC operates and ones in which the NOC and IOC are joint non-operating partners.

iv The Oil and Gas Methane Partnership (OGMP) is a comprehensive, direct measurement-based reporting framework for companies to report methane emissions using strict science-based standards accurately and credibly, as opposed to often inaccurate engineering estimates.

v Endorsed by either the national oil company or country. The World Bank launched the Zero Routine Flaring Initiative in 2015, bringing together governments, oil and gas companies, and financial stakeholders to end routine flaring by 2030. Routine gas flaring is a significant source of methane emissions from the energy sector, making endorsement of this initiative especially imperative for oil and gas producers.

Case Studies

Non-operated joint ventures are complex business models and difficult to understand. By focusing on some of the world's largest joint ventures – that have at least two supermajor non-operating partners and are in one of the regions with high non-operated production and weaker environmental standards – it is easier to illustrate what a joint venture is, what kind of partners are involved, and highlight common discrepancies in methane management between IOCs and other co-owners. These provide real-life examples of where IOCs have the potential to influence and improve methane management at joint asset holdings.

Karachaganak (Phase 1 & 2), Kazakhstan

Asset: Karachaganak Processing Complex, Unit 2, and Unit 3. The Karachaganak field in north-west Kazakhstan is one of the most significant hydrocarbon fields in the country, making up 45% of the country's gas production and 16% of its oil production.⁸

NOJV Type: Incorporated

Operator: Karachaganak Petroleum Operating (KPO) Venture

Operator Type: Operating Company

Production: 134.1mn BOE (2021)⁹

Contract: The current production-sharing agreement came into force in 1997 for a 40-year term, ending in 2037.¹⁰

International Trade: Liquids are produced and stabilized at the Karachaganak field, before being transported primarily through the Caspian and the Atyrau-Samara pipelines to Europe.

Methane Management: The KPO venture stands out among many joint ventures by issuing annual reports that include some environmental performance metrics.¹¹ It reports a carbon intensity of 63 tons of CO₂/thousand tons of hydrocarbon production. The KPO venture also reports a gas utilization rate of 99.94%, with the remaining 0.06% (11 MM cubic meters) being flared – reportedly much lower than earlier flaring rates in the early 2010s.¹² However, there is no publicly disclosed methane mitigation strategy.



Methane management and disclosure practices of joint venture partners

- Operating Company
- IOC
- Integrated
- NOC

Overall Targets & Disclosure

Company	HQ	Publishes a sustainability report	Publicly reports GHG emissions	Methane emission reduction target	Reports global methane and flaring separately	LDAR Program	OGMP
Karachaganak Petroleum Operating B.V. ■	Kazakhstan	✓	✓	✗	✗ ¹	✗	✗
Eni (29.25%) ■	Italy	✓	✓	✓	✓	✓	✓
Shell (29.25%) ■	UK	✓	✓	✓	✓	✓	✓
Chevron (18%) ■	USA	✓	✓	✓	✓	✓	✗
Lukoil (13.5%) ■	Russia	✓	✓	✗	✓	✓	✗
KazMunayGas (10%) ■	Kazakhstan	✓	✓	✗	✓	✓	✗

¹ Reports flaring intensity and absolute volume, but neither for methane

⁸ "Eni: Joker in the Deck?" Africa Oil and Gas Report, 4 October 2022.

⁹ "The Enduring Benefits of Karachaganak" KPO, 2021.

¹⁰ "Karachaganak: The Onshore Field in Kazakhstan" Eni, 2021.

¹¹ "The Enduring Benefits of Karachaganak" KPO, 2021.

¹² "KPOBV site: Gas Utilization" KPO, 2021.

Ourhoud Field, Algeria

Asset: Ourhoud is Algeria’s second largest oil field, located in the Berkine Basin.¹³

NOJV Type: Unincorporated

Operator: Sonatrach is the largest company in Africa. In 2021, Sonatrach was the 7th largest gas company in the world. According to CEPSA’s website, it is the lead operator at the Ourhoud oil field.

Operator Type: National Oil Company

Production: 230,000 BOEPD (2017)¹⁴

Contract: Expires 2047

International Trade: Algeria is the largest gas producer in Africa and supplies 11% of Europe’s natural gas consumption. Italy has struck a deal to double Algerian gas imports to 18bcm annually by 2024.¹⁵ In part, this development is a result of a USD\$4bn, 25-yr production-sharing contract finalized in July 2022 between Eni, Oxy, TotalEnergies, and Sonatrach, regarding the Berkine Basin, where the Ourhoud asset is located.¹⁶

Methane Management: Though the contract promises the implementation of a “dedicated carbon reduction program”, Algeria has historically performed poorly on methane and flaring reduction.¹⁷ Despite Sonatrach (which controls 80% of the country’s hydrocarbon production)¹⁸ endorsing the World Bank’s Zero Routine Flaring by 2030 initiative, the country’s flaring intensity is more than four times the global average.¹⁹



Methane management and disclosure practices of Joint Venture Companies

- NOC
- Integrated
- Independent
- IOC

Overall Targets & Disclosure

Company	HQ	Publishes a Sustainability Report	Publicly reports GHG emissions	Methane emissions reduction targets	Reports methane and flaring separately	LDAR Program	OGMP
Sonatrach (37.07%) ■	Algeria	✓	✗	✗	✗	✗	✗
Cepsa (37.13%) ■	Spain	✓	✓	✗	✓	✓	✗
Oxy (10.16%) ■	USA	✓	✓	✓	✓	✓	✓
Eni (5.08%) ■	Italy	✓	✓	✓	✓	✓	✓
TotalEnergies (5.08%) ■	France	✓	✓	✓	✓	✓	✓
Pertamina (3.56%) ■	Indonesia	✓	✓	✗	✓	✗	✗
Repsol (1.92%) ■	Spain	✓	✓	✓	✓	✓	✓

13 “Increased Water Handling Project” Cepsa, 2022.

14 “Algeria expects Ourhoud oilfield to produce 1.3 billion barrels until 2040” Reuters, 28 November 2017.

15 “Italy Secures Enough Gas Supplies for Winter Without Russia Gas” Bloomberg, 27 September 2022.

16 “Eni, Total, Occidental sign \$4 bn Algeria Oil Contract” France 24, 19 July 2022.

17 “Algeria: TotalEnergies Signed a New Production Sharing Contract with Sonatrach in the Berkine Basin” TotalEnergies, 19 July 2022.

18 “Algeria - Oil and Gas - Hydrocarbons” International Trade Administration, 11 October 2021.

19 “Europe’s new gas deals should prioritize wasted methane” Clean Air Task Force, 17 May 2022.

PART 3:

Embedding Effective Climate Governance into Joint Ventures

Although IOCs do not have direct control over the day-to-day operations of their NOJVs, they form part of the joint venture's ownership group and have influence and contractual rights due to their equity stake. How a non-operating partner can most effectively influence one of its NOJVs depends on where the venture is in its life cycle.

Pathways to Influence

International oil and gas companies (IOCs) are under extreme pressure from stakeholders to embrace the energy transition and address climate change. Considering that approximately 50% of upstream production is through non-operated joint ventures (NOJVs), for IOCs to do more, they need to ensure that climate risks and opportunities are appropriately addressed throughout their businesses, including NOJVs.

Governing NOJVs can be challenging. The different non-operating partners often have misaligned strategies or incentives, and each partner has numerous stakeholders – including board members, parent company executives, and government regulators. As a result of these and other joint venture-specific circumstances, NOJVs notably struggle with many elements of good governance.

The ways to influence joint ventures can be turned into strategies to plan and execute improved environmental performance at NOJVs. The life of a typical joint venture is composed of three distinct phases – formation, operations and the end of the venture – and each phase warrants different strategies.



The following diagram tracks the lifecycle of a joint venture and key levers companies can leverage to influence and drive change:

Influencing Roadmap

- Formation
- Operations
- End or Renewal



Governance Levers

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In 2019, the World Economic Forum published guidance on how corporate boards of directors can implement good climate governance at their companies. Since NOJVs are materially important to the operations of IOCs, these companies should implement good climate governance into their NOJVs as well. As the global transition to a low-carbon, clean energy economy intensifies, IOCs and their NOJVs will need sound governance practices to navigate the regulatory and market transformations and meet their public commitments on climate.

Governance Levers at Formation

A non-operating partner has the most leverage to secure guarantees, rights and protections from its partners and the operator when a joint venture is being formed. This leverage can be applied to advocate for specific contract clauses that protect the non-operating partners and the environment. Contract clauses addressing greenhouse gas emissions management and reporting can be inserted into the foundational documents for the venture, such as the joint operating agreement for an unincorporated joint venture, the shareholders agreement for an incorporated joint venture, and the concession agreement between the partners and the host government. Asking for robust climate and environmental contract clauses in a joint venture's foundational agreements can also serve to test the co-venturers' shared commitments to addressing climate change.

Contract Clauses

In 2022, the Association of International Energy Negotiators ([AIEN](#)) will update its model Joint Operating Agreement to include clauses addressing greenhouse gas emissions. This model agreement is used widely by IOCs as the starting point for negotiations. While the inclusion of such terms in the AIEN model Joint Operating Agreement is a major step forward to embedding climate governance into joint ventures, ultimately, it is the IOCs that will have to advocate and negotiate for and agree to adopt these model clauses addressing greenhouse gases into their binding joint venture agreements.

Governance Levers for Operations

Once a joint venture's foundational agreements are signed, non-operating partners generally must rely on non-contractual means to put into effect good climate governance. Some examples of good climate governance practices at this stage include having an effective board of directors and operating committee with sustainability experts to provide oversight, requiring regular reporting against climate-related key performance indicators (KPIs) or reporting frameworks like the Task Force on Climate Related Financial Disclosures (TCFD), and conducting periodic climate-related audits and assessments. These practices will enable climate risk to systematically inform strategic planning and decision-making processes at the NOJV and give non-operating partners insight into the environmental performance of the venture.

The challenge during the operations phase is that a single non-operating partner usually cannot act unilaterally. This is an important distinction between operated assets and non-operated assets. Because companies own a percentage of the venture, not specific pieces of tangible infrastructure, a company can only address climate risks from their equity stake in a venture if the entire venture is committed to addressing such risks. For that reason, non-operating partners must engage with and influence their JV partners through consistent and collaborative dialogue. This engagement builds trust as well as facilitates alignment on how to address complex challenges.

Board Resolutions

Because amending the foundational agreements of a joint venture to formalize good climate governance and operational practices is not always feasible or desirable, joint venture boards and committees can adopt resolutions to embed climate governance into an existing joint venture. A board resolution solidifies in writing decisions made by a board and signifies that the board is aligned on these decisions. A resolution can also be used to demonstrate to other stakeholders that the joint venture and its partners are committed to addressing climate risks and have adopted certain climate governance practices. In 2022, Methane Guiding Principles, a coalition of industry and civil society organizations, will publish a model joint venture board resolution addressing different elements of climate risk. This model board resolution can serve as the starting point for negotiations among partners and allows the focus of negotiations to be on key commercial, strategic, and risk management issues.

Governance Levers at the End of a Venture

Finally, the end of a joint venture can also offer opportunities for non-operating partners to implement good climate governance. For a venture with a defined “life”, the end of the original foundational agreements could be a time for the partners to renegotiate for and agree on stronger contractual climate provisions as part of their agreement to extend the venture.

Agreement renewal may also be a sensible time for the partners to deploy capital to transform heavy-emitting assets into greener assets. A possible win-win for host governments and oil and gas companies could be for IOCs offering to fund the necessary emissions reduction investment in exchange for agreement extensions and renewals. IOCs can have a disproportionate impact here – they have skills and expertise to identify high-potential areas for emissions reduction and funding such investments can build credibility among stakeholders and investors. By connecting the investment to agreement renewal, the IOCs can also ensure a financial return on their emissions reduction investment.

Good governance cannot solve the climate crisis alone. However, good climate governance at oil and gas joint ventures can elevate the issues and risks created by climate change and drive effective management of climate-related impacts.

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PART 4:

Closing the Oil and Gas Industry's Accountability Gap

NOJVs are a material part of energy companies' emission profiles and must become a central tenet of their emission reduction strategies. In fact, they can be the industry's most powerful lever to bring IOCs, NOCs and other operators together to leverage financing, innovation, and technical expertise. If the supermajors were to extend their methane emission reduction targets to NOJVs, the global production covered by these commitments would increase from 11% to 30%. If all their operating partners adopted similar company-wide methane targets and disclosure practices, the total global production covered by commitments to methane management would reach 45%.

Company Risk and Performance

As global policymakers, investors and market participants turn their attention toward net-zero strategies, energy companies face increased scrutiny of their greenhouse gas emissions. Visibility and awareness of the problem of non-operated emissions is increasing, in part due to new satellite-based tracking. If companies do not take steps to address emissions across their portfolio, including from their non-operated joint ventures, significant portions of their production profile and revenue may be exposed to risks such as:

- Emerging and increasingly stringent climate policies
- Growing consumer demand and competitive pressures for low-carbon products
- Higher cost of capital
- Changes in market behavior, particularly by buyers and importers, in response to growing awareness of supply chain emissions, potentially leading to increased costs, lower demand or even exclusion from certain markets.

The supermajors report 100% of their operated emissions. Some companies have started to extend the coverage of their climate commitments to their NOJVs. In 2019, Chevron became the first oil and gas company to signal a commitment toward establishing a methane emission reduction target for operated assets as well as “assets it has a stake in but does not operate itself.” Today, the supermajors have made explicit references to influencing emissions management at NOJVs, though none has extended their emissions reduction targets or set individual commitments requiring their operating partners or non-operated assets to set concrete emissions targets along a determined timeline.

This paradigm is also reflected in the wider landscape of climate commitments; many oil and gas companies have set net-zero goals, alongside methane and flaring targets, but these commitments and targets often exclude non-operated joint ventures.

Company	Operated Assets: Targets & Disclosure				Non-Operated Assets: Targets & Disclosure			
	Scope 1 & 2 Reduction Target ¹	Near-zero methane intensity ³	Near-zero flaring intensity or ZRF	Company Statement on Target Coverage of NOAs	Reports equity methane emissions	Reports flaring equity emissions	Separates out methane emissions from CO2e	OGMP
bp	50% vs 2019	✓	✓	“Working to influence [NOJV partners] to set their own methane intensity targets of 0.2% and take action to reduce methane emissions.”	✓	✗	✓	✓
Chevron	None	✓ ₍₂₀₂₈₎	✓	“[Chevron] believe[s] that building constructive partnerships and sharing access to [their] expert resources are the best ways that [they] can positively influence methane emissions performance at non-operated assets.”	✓	✓	✓	✗
ConocoPhillips	40-50% vs 2016	✓	✓	“Expanding the GHG emissions intensity target to apply on a net equity basis[...] We approach net-zero as a shared challenge, we look to influence our joint operating partners’ climate risk strategies and net-zero targets and align our emissions reductions activity.”	✓	✗	✗	✓
Eni	35% vs 2018 ²	✓	✓	“The upstream GHG emissions intensity target has been extended to indirect Scope 2 emissions and to non-operated assets.”	✓	✗	✗	✓
ExxonMobil	20% vs 2016	✓ ₍₂₀₃₀₎	✓	“For non-operated assets, the Company works with its equity partners to advance greenhouse gas reductions to achieve comparable results [on absolute flaring and methane emissions].”	✓	✗	✓	✗
Shell	50% vs 2016	✓	✓	“When entering into a venture operated by a partner, [Shell] requires them to agree to and adopt key principles, policies and standards, including the Shell Commitment and Policy on Health, Safety, Security, Environment and Social Performance (HSSE & SP), or one equivalent.”	✓	✗	✗	✓
TotalEnergies	40% vs 2015	✓	✓	“Working with [operating partners] in a commitment to continuous improvement, with the aim of reaching the highest reporting level in the OGMP 2.0 framework.”	✓	✗	✓	✓

¹ Absolute GHG emissions reduction target for 2030 (unless otherwise stated) vs. baseline
² Includes Scope 3

³ “Near-zero” is defined as any target that is equal to or more ambitious than <0.2% by 2025.

Guidance for Companies and Investors

The supermajors analyzed have improved their methane disclosure at NOJVs and consistently report equity methane emissions at these assets, but flaring is still reported on an operated basis with the exception of Chevron. This is a step in the right direction, but it leaves much room for improvement for data quality, verification, target setting and demonstrable real-world emissions reductions.



NOJVs are the most challenging assets we have in terms of data quality and coverage.

-Major European Oil and Gas Company

To achieve high levels of transparency and comparability, we offer the following recommendations for companies and investors looking to catalyze constructive shareholder dialogues:

Pathway 1: Targets and Disclosure	EDF Recommendation	Why it Matters
Targets	Companies must establish all climate-related targets (such as Scope 1, 2, and 3, methane, flaring, etc.) to cover 100% of their production volumes, including non-operated assets.	To adequately address climate risk, emissions targets must extend to NOJVs, since they make up a significant portion of a company's asset portfolio, production revenues and emissions.
Reporting	Companies should report 100% of operated methane emissions, flaring, and CO ₂ eq and separately report equity methane, flaring, and CO ₂ eq for non-operated assets.	Reporting of total equity emissions from NOJVs allows investors and other stakeholders to assess climate risk more effectively from a significant portion of a company's production portfolio.
Disclosures	Disclosure that allows stakeholders to evaluate progress against targets at non-operated assets, e.g. potentially including technology sharing, financing for mitigation projects, as well as requests for data and target setting such as Board Resolutions.	Disclosing actions to address climate risk from NOJVs can offer investors and other stakeholders insight into the challenges and opportunities to reduce emissions and function as a starting point for constructive company-shareholder dialogue.

Pathway 2: Industry Collaborations	EDF Recommendation	Why it Matters
Oil and Gas Methane Partnership (OGMP)	Join the OGMP , a comprehensive, direct measurement-based reporting framework for companies to accurately and credibly report methane emissions using strict science-based standards across both operated and non-operated assets. Achieving “Gold Standard” reporting within 3-years for operated assets and within 5-years for non-operated assets.	Most reported methane emissions are based on factor estimates that grossly underestimate real world emissions. ²⁰ Without good data companies can't identify the most cost-effective abatement opportunities. Improving source-level data through the framework represents a meaningful development in the quality of methane emissions reporting at both operated and non-operated assets.
Methane Guiding Principles (MGP)	Join the MGP , a voluntary non-consensus coalition of industry and civil society organizations that work collaboratively across the global oil and gas value chain to reduce methane emissions.	MGP participants are provided with access to resources and support to address shared challenges. A flagship initiative is a working group developed specifically to manage and reduce methane emissions at NOJVs.
Aiming for Zero Methane Emissions Initiative	OGCI launched the Aiming for Zero Methane Emissions Initiative in 2022. While not a binding commitment, it forms an important signal from major producers and supporters to encourage the whole industry to eliminate its methane footprint by 2030.	This initiative is meant as a supplement to important multistakeholder initiatives, such as the MGP, OGMP 2.0 and the Global Methane Alliance, and does not aim to duplicate their work. It also provides a compendium of links to useful material on best practices, reporting frameworks, technology compendiums to support companies.

²⁰ [OGCI 2019 Annual Report](#); EPA Inventor of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018; [Alvarez et al 2018, DOI: 10.1126/science.aar7204](#) (EDF synthesis paper based on over 400 site-level measurements from six basins); [Zhang et al 2020, DOI: 10.1126/sciadv.aaz5120](#) (Permian Basin assessment based on PermianMAP initiative and 2018/19 TOPOMI satellite observations).

Engagement Questions for Investors

As part of their engagement with oil and gas companies, investors should assess how companies manage the emissions performance of their NOJV partners, while encouraging the integration of non-operated assets into corporate sustainability commitments and strategies. The below questions provide some ideas for investors looking to get the conversation started.

General

1 What percentage of current and planned production volumes come from non-operated assets?

2 Which are your most important joint venture partners?

3 What share of your non-operated production is operated by companies with a methane reduction target or by members of a voluntary methane coalition (incl. OGMP, MGP and OGCI)?

4 Do your group climate targets apply to NOJV production? If not, do you have an intention to extend these targets to cover NOJVs? Over what timeline?

Governance

1 How does the company oversee the coordination and integration of non-operated assets within the company's corporate structure?

2 Describe the responsibilities and roles of the functional team managing climate risks group-wide and for the non-operated asset portfolio. How are they integrated into joint venture teams?

3 How often do representatives at the group-level visit non-operated joint venture teams to discuss emission reduction and climate strategies?

4 Describe the Board of Directors' role in the oversight of climate risk, and how are climate risks from non-operated assets factored into that responsibility.

Joint Venture Governance

1 Do key NOJV partners have an effective Board of Directors and Operating Committee with emissions and climate expertise?

2 How are methane and other climate priorities integrated into current and future contract terms for non-operated assets and joint ventures?

3 Do your joint ventures have a GHG Management Committee or an equivalent body to propose emission reduction activities and actions for the workplan and budget?

4 What programs and/or processes are in place for methane technology and best management practices sharing between non-operated asset joint venture partners?

Strategy and Risk Management

1 Can you provide examples of efforts the has company made to influence NOJV partners on methane mitigation? How successful were these efforts?

2 What efforts has the company made to positively influence methane and climate policy in countries with major non-operated assets?

3 How does the company integrate methane and other environmental health and safety risks from non-operated assets in its enterprise risk management processes?

Metrics and Targets

1 What is the company's estimate of non-operated asset methane emissions and flaring? Do you regularly disclose this data?

2 In what format(s) and with what frequency do joint venture partners share methane emissions data, and/or other emissions data?

3 What methods are used to improve the quality and credibility of methane emissions data and verify the accuracy of non-operated asset methane emissions data received from partners? What levels of assurance are applied by internal or external functions?

4 What is the plan and timeline for the company to extend corporate targets to cover NOJVs?



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