Wood Mackenzie

EU Methane Emissions Regulation Study

Concawe Symposium

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Prepared for:

Concawe

International Association of Oil & Gas Producers



Agenda

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Overall context for the study

- The European Union's **Methane Emissions Reduction Regulation (MER)** (EU 2024/1787), which entered into force on 4 August 2024 aims to reduce methane emissions from the energy sector, covering crude oil, gas, and coal activities across the entire supply chain within the EU — from production and processing to transmission and storage, and from the production level for EU imports. It sets rules for **measurement, reporting, and verification (MRV)** of emissions, as well as leak detection and repair (LDAR) and restrictions on venting and flaring within the EU. The regulation has an extraterritorial effect, imposing obligations on importers to ensure that producers of crude oil and natural gas meet equivalent standards.

- In this context, **Wood Mackenzie was commissioned by Concawe and IOGP Europe** to conduct an independent analysis of the potential impacts of MER's importer requirements on the EU's crude oil and natural gas supply and pricing.

- The study focuses on the MRV equivalence requirements outlined in **Article 28** and their potential effect on markets (key MER articles are defined on the next page). The study assesses the potential impact on the security of supply and pricing of natural gas/LNG, crude oil, and refined products in EU markets, based on an illustrative evaluation of producer and importer compliance with Article 28 of the Regulation.

- The bottom-up analysis draws on **Wood Mackenzie's proprietary research and data**, scenario modelling capabilities, and global energy market expertise. The 'Base Case' forecasts in the scenario modelling leverage Wood Mackenzie's published views from April 2025.

MER's importer rules (Articles 27–29) create a three-step compliance ramp-up: Starting with reporting, then full MRV equivalence, and finally an intensity limit for methane emissions

- **2025**: **Article 27 – Early importer reporting** (importer obligations). From 5 May 2025, companies that import crude oil, natural gas or coal into the EU must submit to their national competent authority (and thereafter each year) qualitative information about the origin of the product, transit countries, and the monitoring, reporting and verification (MRV) arrangements applied at source level. This first step is designed to build transparency while more rigorous requirements phase in.
- **2026**: By 5 February 2026, the EU Commission is to launch a public methane transparency database for emissions data access.
- **2027**: **Article 28 – MRV equivalence for importers**. From 1 January 2027, importers placing crude oil, natural gas or coal on the EU market must demonstrate that the producer from which the product originates is subject to or has been verified to apply MRV rules deemed ''equivalent'' to those applied within the EU. Equivalence can be met via two pathways:
    - **Country-level equivalence**: The non-EU producer country has MRV rules for methane emissions that are equivalent to the EU MER's rules per Articles 8, 9, and 12.
    - **Producer-level equivalence**: Even if the country lacks equivalent regulation, the specific producer can demonstrate equivalency via either:
        - **Article 12 pathway**: The producer has monitoring, reporting and verification which meets EU MER's rules per Articles 8, 9, and 12.
        - **OGMP 2.0 Level 5 pathway**: The producer reports at the most rigorous level (Level 5: reconciliation of source- and site-level measurements) with third-party verification in addition. The annual OGMP 2.0 2024 report indicates that about 3% of gas and 3% of crude oil assets was reported at Level 5.

Article 8 – Third-party verification. Underpins Article 28 by requiring that all data used to demonstrate equivalence are verified by an accredited independent third party. Without Article 8 verification, importers cannot claim MRV equivalence at producer level (Article 28).

This study includes scenario modelling of the impacts of the Article 28 requirements only. It also includes a high-level literature review of methane intensity (MI) estimates for key oil and gas producing countries, but does not model the impact of setting different MI thresholds.

Introduction to MER impact assessment and scenario modelling

- **The primary purpose of this analysis** is to evaluate the potential market impacts of different regulatory approaches, not to recommend specific equivalence or enforcement decisions by the European Commission or EU Member States.
- As such, the **market impacts shown are illustrative** and should not be interpreted as a forecast — the scenarios rely on assumptions about countries' policies and producers' progress on methane emissions. The severity of actual market impacts will depend on political and environmental priorities and on how the EU and Member States choose to enforce the equivalency requirements (Article 28).
- This analysis begins with a **Base Case** that represents a "business as usual" outlook in the absence of MER. Against this baseline, the study evaluates **two hypothetical policy implementation scenarios** to illustrate a range of possible market outcomes.

Baseline for analysis

Base Case
Assumes no MER

"Business as usual" supply outlook in the absence of MER. Based on Wood Mackenzie's published views

Alternative policy enforcement scenarios

Default Scenario
Implementation of MER

MER is enforced as it was adopted in 2024.

Adaptive Scenario
Modifications to MER

Modifications are introduced to MER allowing for greater flexibility in granting country-level MRV equivalence.

We used a 4-step process to define the percentage of each exporting country's production that is allowed to be exported to the EU (i.e. the *constraint*) in each scenario

Summary of process followed to develop scenario drivers

1 Identify exporting countries

Identify countries with capacity to export gas/LNG and crude oil to EU, leveraging Woodmac base case

2 Country-level equivalence

Assess countries' current methane regulation and their potential to be considered MRV equivalent

If equivalent

If country achieves MRV equivalence, then 100% of its production is allowed to be exported to EU

If not equivalent, constraint is determined by Step 3% x Step 4%

3 Producer-level equivalence

Estimate % of countries' production from companies achieving OGMP Level 5 equivalence

x

4 Traceability assumptions

Assume % of each country's production that is traceable (i.e. the importer can identify the producer)

If country does not achieve equivalence, then % of production allowed to export to EU = Step 3 % x Step 4 %

Output: % constraints on each country applied in scenario modelling for the 2025-2035 period. Constraints are dynamic, reflecting different levels of MRV equivalence in three time periods (2027-29, 2030-31, 2032-35)

We used the scenario drivers to estimate the share of compliant production available to the EU

We applied the following constraints to our least-cost supply allocation model for crude oil and the refining system

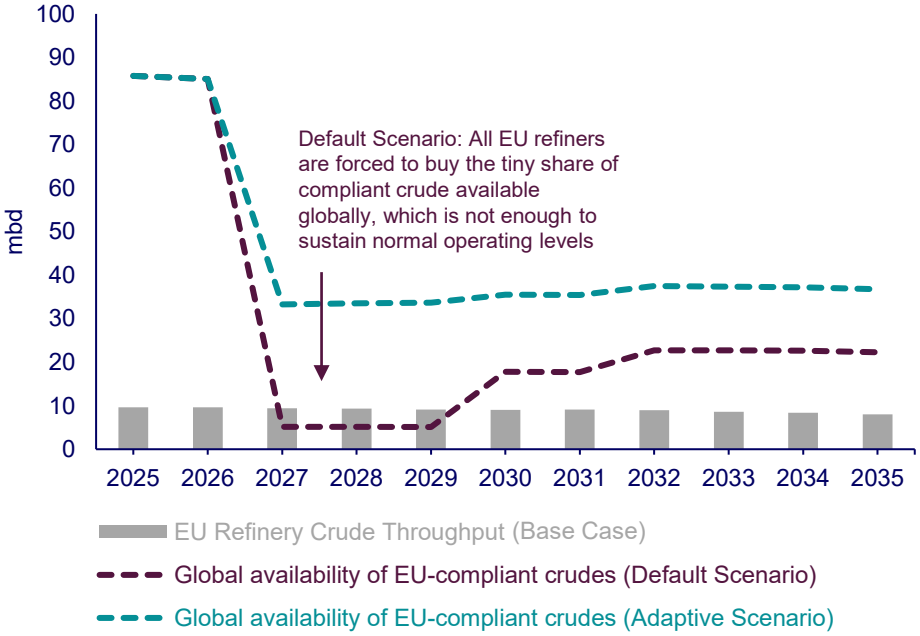
	Production	EU export	Default Scenario			Adaptive Scenario		
			% of production allowed to flow to EU			% of production allowed to flow to EU		
Major exporter to EU	*2024 (kboed)*		**2027-29**	**2030-31**	**2032-35**	**2027-29**	**2030-31**	**2032-35**
United States	11,541	1,841	2%	48%	48%	100%	100%	100%
Norway	1,909	1,574	71%	100%	100%	100%	100%	100%
Kazakhstan	1,922	1,090	4%	21%	30%	100%	100%	100%
Saudi Arabia	9,686	865	0%	0%	0%	0%	0%	0%
Nigeria	1,597	821	2%	12%	23%	100%	100%	100%
Libya	1,411	792	0%	0%	0%	0%	0%	0%
Iraq	6,215	648	2%	5%	6%	2%	5%	6%
United Kingdom	766	600	6%	23%	76%	100%	100%	100%
Azerbaijan	589	500	15%	40%	57%	15%	40%	57%
Brazil	3,938	496	2%	40%	92%	100%	100%	100%
Russia	10,901	491	0%	0%	0%	0%	0%	0%
Algeria	844	326	1%	4%	7%	1%	4%	7%
Guyana	383	325	5%	45%	100%	5%	45%	100%
Mexico	1,437	246	0%	6%	25%	100%	100%	100%
Angola	1,125	189	11%	43%	95%	11%	43%	95%
Canada	4,880	136	0%	7%	8%	100%	100%	100%
Equatorial Guinea	87	28	18%	24%	39%	18%	24%	39%
United Arab Emirates	4,094	67	77%	97%	98%	100%	100%	100%
Egypt	409	57	1%	2%	3%	1%	2%	3%
Gabon	198	38	2%	7%	20%	2%	7%	20%
Tunisia	28	28	3%	9%	9%	3%	9%	9%
Trinidad and Tobago	54	13	1%	27%	62%	1%	27%	62%
Bolivia	0	0	12%	43%	94%	12%	43%	94%
Suriname	16	0	0%	42%	72%	0%	42%	72%
Uganda	0	0	14%	27%	61%	14%	27%	61%
Sudan	31	0	0%	0%	0%	0%	0%	0%
Total (wt. avg. % of 2024 EU imports)			**13%**	**33%**	**44%**	**62%**	**65%**	**69%**

Note: pre-2024 contracts are not material for crude oil because term contracts for oil tend to be “annual evergreen” and renewed annually

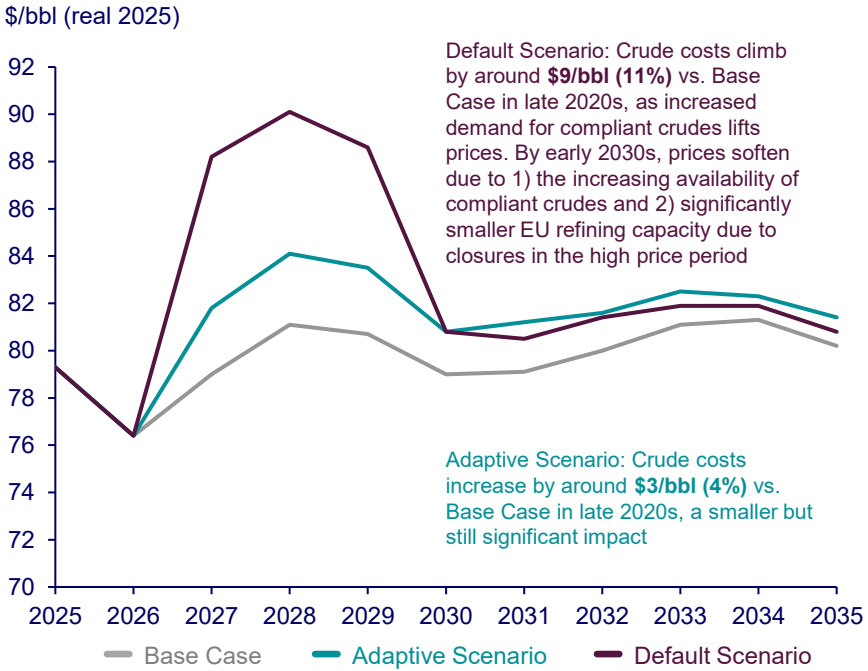
A lack of crude availability forces EU refiners to bid compliant crudes away from other refiners, driving higher prices for compliant crudes and eroding EU competitiveness

In the Default Scenario, insufficient compliant crude is available globally for EU refiners to maintain throughput

Global Crude Availability vs. EU Refinery Throughput



EU Refinery Crude Price, volume-weighted average

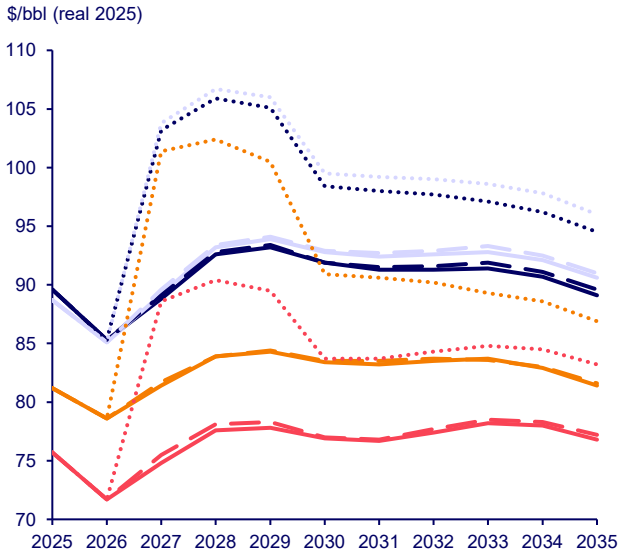


Source: Wood Mackenzie Refinery Supply Model

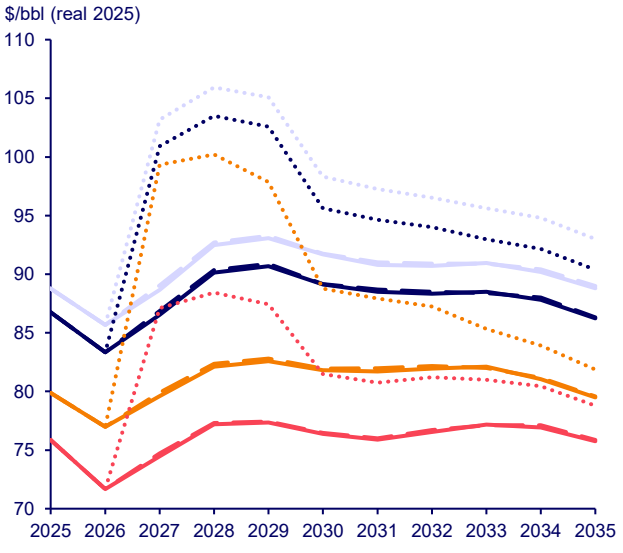
Assuming no change in oil demand, global product crack spreads increase sharply due to lower EU regional supply. This promotes higher utilisation rates elsewhere

Oil product prices climb in NW Europe, reflecting higher prices in export hubs and greater import volumes

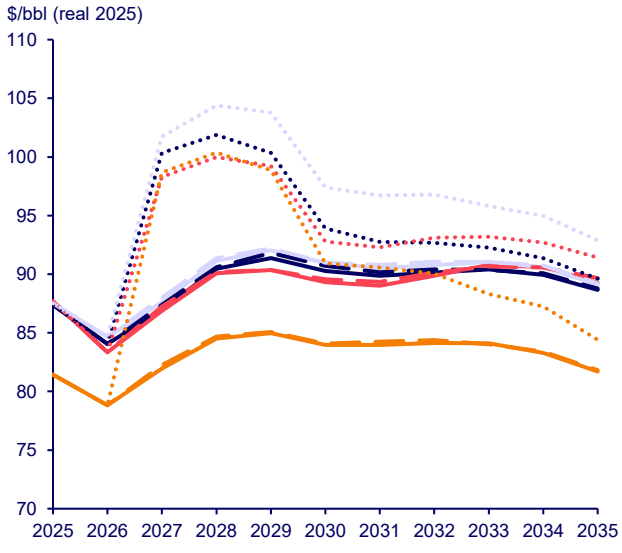
NW Europe Oil Product Price



US Gulf Coast Oil Product Price



Singapore Oil Product Price





Source: Wood Mackenzie Refinery Supply Model

What has changed since the study?

Commission guidance published in July 2026

- The Commission issued recommendations covering **contractual clauses, traceability and the application of penalties**.
- The recommendations are **non-legally binding** and guide Member States towards specific implementation solutions.
- The Recommendation on penalties proposes a grace period until 2029, while leaving the underlying obligations unchanged.
- The guidance recognises **trace-and-claim and certification approaches** for complex supply chains, without requiring physical tracing of individual molecules or cargoes.

Key implementation gaps remain

- A practical route to **country-level MRV equivalence** has not yet been established, and no extra-EU country is expected to achieve equivalence by **1 January 2027**.
- Implementation of the recommendations depends on their application by **national competent authorities**.
- Companies importing crude oil not fulfilling requirement would still remain non-compliant, despite implementation of the recommendations
- National arrangements for **verification, accreditation and enforcement** are not yet fully in place.
- The traceability issue remains open, including the accreditation of certification and verification bodies.

The policy debate has shifted towards timing

- A number of EU Member States and Industry have requested the postponement the implementation of the MER
- The Commission has indicated its intention to propose a postponement of 1 year of the importer requirements.
- At the time of this presentation, the timing and final legislative outcome remain subject to the EU decision-making process.

The points above reflect regulatory developments since publication of the Wood Mackenzie study and were not part of the original March 2026 analysis.

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Key takeaways

MER implementation (the Default Scenario in our modelling) could lead to the following outcomes, starting in 2027:

- *By 2027, **87% (9.8 mb/d)** of crude oil imports in the EU in 2024 could be excluded from the EU market.*
- ***Sharply lower EU refinery throughput**, around 4.6 million b/d (50%) lower than Base Case when constraints are tightest in late 2020s.*
- ***EU fuel imports increase** to compensate for the loss of refining capacity, with fuel import costs more than $17 billion higher than in the absence of MER. EU could flip from a major gasoline exporter to an importer; diesel imports could climb to record highs.*
- *Gasoline and diesel **prices** could be around 24% and 16% higher, respectively, than they would be in the absence of MER.*
- *Feedstock supply from EU refiners to chemical industry is sharply reduced.*
- ***Longer shipping distances** for MER-compliant crude oil, which increases carbon emissions.*
- ***Weakened competitiveness** of energy-intensive industries due to higher energy costs, which could accelerate deindustrialization in EU.*

- **Default Scenario** illustrates the risks associated with applying Article 28 before scalable compliance mechanisms such as trace-and-claim and certification approaches become available.
- **Adaptive Scenario** was based on the availability of country-level equivalence for selected exporters, which has not materialised.
- **Postponement** would allow time for the development of compliant supply and resolution of implementation challenges.

Recent guidance provides additional flexibility on traceability, certification and penalties, but implementation remains dependent on national accreditation, verification and acceptance processes.

Concawe interpretation: The points above reflect Concawe's assessment of regulatory developments since publication of the Wood Mackenzie study and were not part of the original March 2026 analysis.

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