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OFFSHORE AND METHANE EMISSIONS

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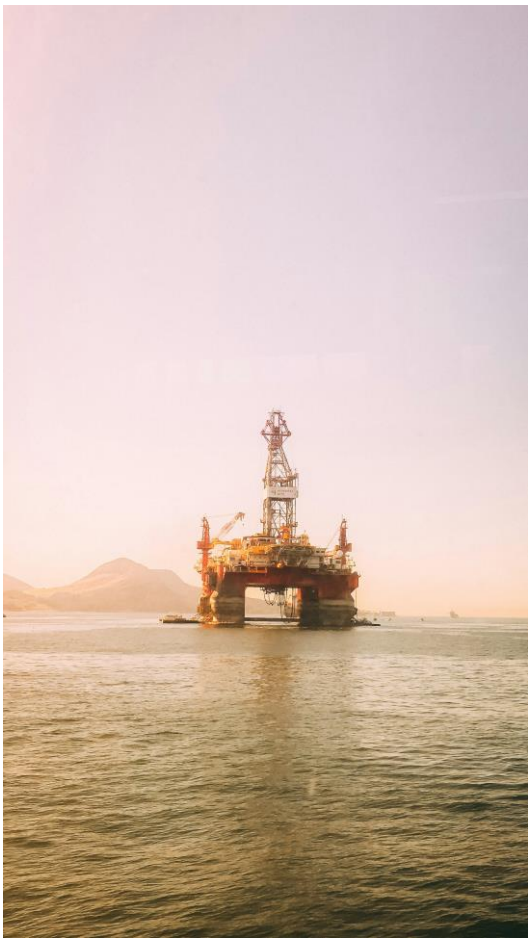

Due to rising demand and tight supply, global offshore drilling is expected to gain momentum in the coming years. According to the Global Offshore Drilling Market Analysis Report, the market is projected to grow from USD 36.52 billion in 2023 to USD 65.63 billion by 2030[1].

According to Rystad Energy, at least 36 potential high-impact offshore drilling sites were identified worldwide for 2024 back in January. Latin America (10 wells) and Africa (13 wells) were the main focus location-wise. Meanwhile, only 2 out of 12 American wells are located in North America (one in the US and one in Canada); the rest will be in Latin America, including the first in the Argentine basin[2].

Growth in the offshore drilling industry also implies a growing need for offshore clean-up services, especially for methane emissions. There are various sources of methane emissions involved in offshore activities. One is offshore natural gas production since methane can be released during extraction, processing, and transportation. Two, methane is often found in crude oil. When extracting oil, associated gas (containing methane) can be vented or flared if not captured. Lastly, methane can escape through infrastructure leaks. Pipelines, drilling platforms, and other equipment can develop leaks, leading to unintentional methane emissions.

Offshore drillers require various services and technologies from methane clean-up companies to manage and reduce methane emissions effectively. Firstly, detection and monitoring technologies are needed to detect and locate leaks as fast and effectively as possible through advanced remote sensing through satellites, drones, and aircraft, as well as fixed sensors on platforms and subsea equipment. Leak Detection and Repair (LDAR) Programs are also needed to conduct regular

[1] "Offshore Drilling Market Size, Growth | Industry Outlook [2032]." 2024. Fortune Business Insights. https://www.fortunebusinessinsights.com/offshore-drilling-market-102636.

[2] "Africa and Latin America set to lead high-impact well drilling in 2024, eyeing rebound after poor 2023." 2024. Rystad Energy. https://www.rystadenergy.com/news/high-impact-wells-2024-africa-latin-america-oil-gas.

inspections and establish automated systems to alert operators of leaks in real-time.

Secondly, offshore operations need emission control technologies such as Gas Recovery Systems, which capture methane and other associated gases during extraction processes; flaring technologies, which ensure complete combustion of methanol; and Flare Gas Recovery technology, which installs flare gas recovery units to capture and repurpose gas.

Thirdly, offshore activities need leak-resistant equipment, such as high-integrity seals, valves, and pipelines designed to minimize the risk of leaks. Moreover, clean-up companies can provide regular equipment maintenance and corrosion prevention treatments, such as corrosion-resistant coatings.

Fourthly, data collection and analysis are essential for methane emission monitoring, reporting, compliance, and transparency. Other vital services include technical training, safety procedures, and emergency response.

With such a globally impactful industry and the backdrop of climate change mitigation efforts, many governments have taken specific actions to regulate offshore operations and clean-up responsibilities.

In April 2024, the Biden Administration required extra insurance for offshore drilling cleanup.

In April 2024, the Biden Administration finalized an offshore drilling rule that forces oil and gas companies to secure "supplemental" insurance for the cost of plugging wells, removing pipelines, and deconstructing offshore oil and gas platforms. Alongside said rule, the administration provided financial assurance regulations that could provide almost $7 billion in new insurance bonds from oil and gas companies. These efforts follow the concerning number of wells (more than 2,700) overdue to be plugged in the Gulf of Mexico and the ongoing struggle for government agencies to force oil and gas companies to clean up old offshore infrastructure[3]. However, it is important to note that the upcoming presidential election will determine the rule's future standing and enforceability. The Council of the European Union (EU) approved a regulation in May aimed at tracking and reducing methane emissions within the energy sector, including offshore operations. This new regulation

[3] Richards, Heather. 2024. "Interior finalizes rule for offshore drilling cleanup." E&E News. https://www.eenews.net/articles/interior-finalizes-rule-for-offshore-drilling-cleanup/.

requires operators to report methane emissions and detect and repair leaks[4]. Moreover, it established specific timelines for repairing or replacing leaky components. Meanwhile, Canada and Noway have implemented stricter regulations and specific targets for methane emission control in the oil and gas sector.

Similarly, industry initiatives led by oil and gas giants, such as the Oil and Gas Climate Initiative (OGCI), which includes major companies like BP, Shell, and ExxonMobil, have been taking place to adopt voluntary measures to reduce methane emissions and increase investments in new technologies for leak detection and repair (LDAR) and flaring reduction.

In 2023, TotalEnergies signed agreements with Petrobras (Brazil), SOCAR (Azerbaijan), and Sonangol (ANGOLA) to jointly conduct methane detection and measurement campaigns and implement new methane reduction technology on their respective oil and gas facilities[5].

The projected increase in offshore activity in the energy sector and associated country-specific regulations could create a market opportunity for methane detection and clean-up providers. Greenhouse emission offsets and mitigation technologies will likely be in high demand worldwide and with long-term projections.

[4] "EU finalises new regulation to track methane emissions in energy sector." 2024. Offshore Technology. https://www.offshore-technology.com/news/eu-regulation-on-methane-emissions/.

[5] Čavčić, Melisa. 2023. "TotalEnergies, Petrobras, SOCAR, and Sonangol join forces to curb methane footprint." Offshore-Energy.biz. https://www.offshore-energy.biz/totalenergies-petrobras-socar-and-sonangol-join-forces-to-curb-methane-footprint/.

References:

Abbasi, Isra. 2024. “Choosing the Right Technology: A Guide to Quantifying Methane Emissions on Offshore Platforms.” Industrial Decarbonization Network. https://www.industrialdecarbonizationnetwork.com/emissions-management/articles/choosing-the-right-technology-a-guide-to-quantifying-methane-emissions-on-offshore-platforms.

“Africa and Latin America set to lead high-impact well drilling in 2024, eyeing rebound after poor 2023.” 2024. Rystad Energy. https://www.rystadenergy.com/news/high-impact-wells-2024-africa-latin-america-oil-gas.

Čavčić, Melisa. 2023. “TotalEnergies, Petrobras, SOCAR, and Sonangol join forces to curb methane footprint.” Offshore-Energy.biz. https://www.offshore-energy.biz/totalenergies-petrobras-socar-and-sonangol-join-forces-to-curb-methane-footprint/.

"EU finalises new regulation to track methane emissions in energy sector." 2024. Offshore Technology. https://www.offshore-technology.com/news/eu-regulation-on-methane-emissions/.

"Offshore Drilling Market Size, Growth | Industry Outlook [2032]." 2024. Fortune Business Insights. https://www.fortunebusinessinsights.com/offshore-drilling-market-102636.

Richards, Heather. 2024. "Interior finalizes rule for offshore drilling cleanup." E&E News. https://www.eenews.net/articles/interior-finalizes-rule-for-offshore-drilling-cleanup/.

Richards, Heather. 2024. "Interior finalizes rule for offshore drilling cleanup." E&E News. https://www.eenews.net/articles/interior-finalizes-rule-for-offshore-drilling-cleanup/.

Sharlach, Molly, and John Sullivan. 2019. "Offshore oil and gas rigs leak more greenhouse gas than expected." High Meadows Environmental Institute. https://environment.princeton.edu/news/offshore-oil-and-gas-rigs-leak-more-greenhouse-gas-than-expected/.

"TotalEnergies extending deployments of offshore methane detection technology." 2023. Offshore Magazine. https://www.offshore-mag.com/energy-transition/article/14302315/totalenergies-extending-deployments-of-offshore-methane-detection-technology.