

Leveraging Smarter Cargos for Decarbonization:

A Competitive Advantage for LNG Suppliers



Combating an industry challenge starts with getting the right information to make an informed decision. That's exactly what the LNG industry is attempting to accomplish with carbon-neutral LNG cargos. LNG is seeing a surge in demand due to multiple forces over the past several years. As the world transitions away from high-carbon energy (i.e. coal), and less dependent on hostile nations, we're looking at LNG to fill much of the energy void. But there is a catch, multiple countries are imposing a carbon tax on imports, and other environmental constraints in order to maintain their country's decarbonization objectives. To combat these challenges, LNG suppliers have turned to cargo emissions transparency, and carbon offsets/credits to offer carbon-neutral cargos. The complexity of this approach is generating verifiable carbon emissions statements across the LNG value chain. Digital Emissions Data Management Solutions (DEDMS) are now making LNG cargos smarter with comprehensive carbon emissions statements that can trace carbon from wellhead to end-use.



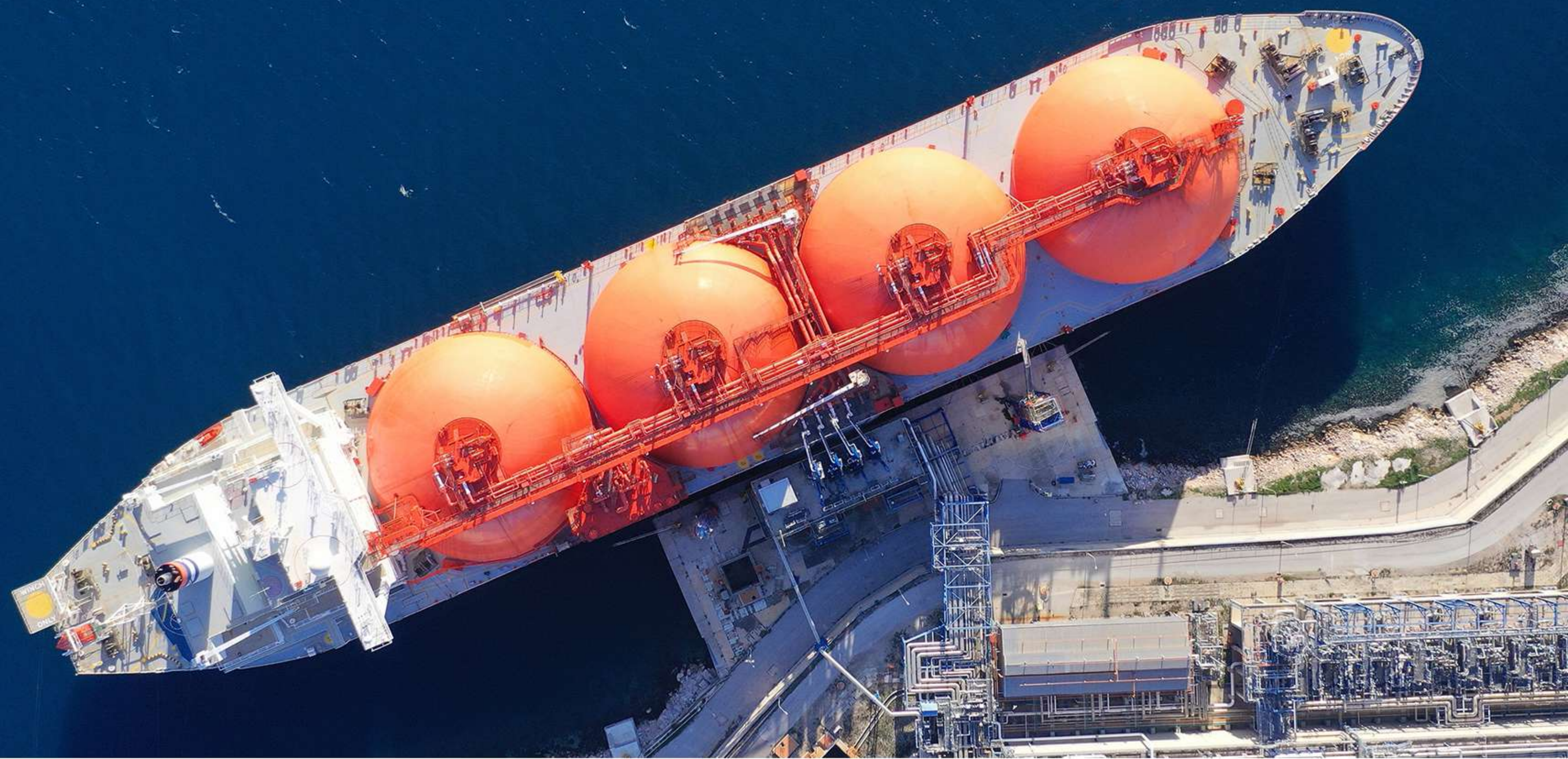
Meeting the Rising LNG Demand:

Based on Bloomberg NEF, the US will more than double its capacity to deliver LNG over the next five years. Other natural gas-rich countries such as Qatar, eastern Africa, and Mexico are also adding substantial LNG capacity. Across the globe, regasification terminals are being built along coastlines to import LNG. According to GlobalData's LNG Regasification Database, Asia had a total regasification capacity of 26,726 billion cubic feet (bcf) in 2022, shared across 17 countries. By 2026, the total LNG regasification capacity is expected to rise to 45,758 bcf, with 103 new LNG regasification terminals expected to commence operations.

Addressing Challenges Through Carbon-Neutral LNG Cargos:

LNG is quickly becoming the bridge energy to lower carbon emissions over coal since it emits as much as 50% less CO₂. While countries are embracing LNG, they are also imposing new carbon taxes and other regulations to ensure they continue to meet their decarbonization goals. These measures can include carbon pricing mechanisms, such as carbon taxes or emissions trading schemes, which levy charges on the carbon content of imported LNG. Additionally, countries may impose requirements for emissions reporting, reduction targets, and the use of carbon offsets or credits to offset the carbon footprint associated with LNG imports. These constraints aim to incentivize the adoption of cleaner energy sources and encourage LNG companies to minimize their environmental impact.

To overcome these regulatory and compliance constraints, LNG producers have embraced carbon emissions transparency and implemented carbon offsets/credits to provide carbon-neutral cargo. Achieving this involves establishing verifiable carbon emissions statements across the entire LNG value chain. DEDMS solutions now enable LNG cargos to become smarter by offering comprehensive carbon emissions statements that trace carbon from wellhead to end-use. By driving lower carbon emissions in the value chain, LNG operators can reduce their reliance on offsets/credits, resulting in cost savings that can be game-changing.



Adopting Frameworks for Emissions Transparency:

The LNG industry is swiftly adopting frameworks that establish the necessary structure and standards to generate carbon emissions statements at every stage of the LNG value chain. Two prominent frameworks include The Statement of Greenhouse Gas Emissions (SGE) and the International Group of Liquefied Natural Gas Importers (GIIGNL).

While these frameworks provide the guardrails on what is expected for emissions transparency, they rely on GHG emissions frameworks to calculate the vast array of emission activities into a standardized carbon mass/energy unit (tCO₂e/mmBtu). The predominant GHG footprint frameworks include GHG Protocol, ISO 14064/14067, PAS2050. The issue is that these frameworks are just that, a formula to solve a problem, that does not define the path to get to the ingredients of the formula. The role of the DEDMS is to transform these frameworks into usable solutions that make LNG cargo emissions smarter.

The Role of Digital Emissions Data Management Solutions (DEDMS):

DEDMS empowers LNG companies to simplify complex emissions management, improve operational efficiency, and contribute to a more sustainable and low-carbon energy future.

DEDMS represents a carefully engineered solution that sits atop the LNG value chain, providing crucial services such as data collection, data quality management, GHG calculation, supplier allocations, and generation of emissions statements at each stage of the LNG lifecycle (production, transportation, liquefaction, shipping, unloading, end-use), including the cargo statement itself. This is not a carbon accounting solution that has a very narrow set of capabilities, but a carbon management solution that follows accounting principles to generate verifiable emissions cargo statements. The accurate collection, data quality management, and standardization of data are crucial, as any inaccuracies can render the results untrusted. Primary data from sensor devices employed in operations play a central role, while secondary data usage is minimized. With its flexible calculation engine, DEDMS can apply different formulas and factors, providing visibility and traceability to verify results. Moreover, the solution applies appropriate emissions allocation at the cargo level, meeting industry and customer demands for transparency.

Gaining a Competitive Advantage:

LNG operators that prioritize the creation of smarter emissions LNG cargos stand to gain a competitive advantage in the market. Implementing DEDMS is not a simple plug-and-play solution but requires a well-engineered product, a team of industry experts, and a methodical approach that delivers results. DEDMS serves as a transformational solution, becoming an integral part of any company's journey toward lower carbon emissions.

■ Conclusion:

Embracing carbon-neutral LNG cargos through the adoption of DEDMS solutions and adherence to industry frameworks presents a strategic opportunity for LNG suppliers. By driving decarbonization efforts, optimizing emissions management, and achieving transparency throughout the LNG value chain, companies can gain a competitive edge in the evolving market.

Digital Emissions Data Management Solutions (DEDMS) play a crucial role in generating comprehensive carbon emissions statements across the LNG value chain. DEDMS collects and manages data, performs emissions calculations and allocations, and generates emissions statements at each stage of the LNG life cycle, ensuring verifiability and transparency.

Smart LNG cargos supported by DEDMS will not only meet the demands of the industry and customers but also position organizations as leaders in the transition to a sustainable energy future.

Get In Touch

We help companies track their carbon emissions and make better net zero decisions, with measured and interoperable data.

connect@plancktondata.com
www.plancktondata.com

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