WORLD BIOGAS ASSOCIATION

Making Bio-LNG Happen by 2030

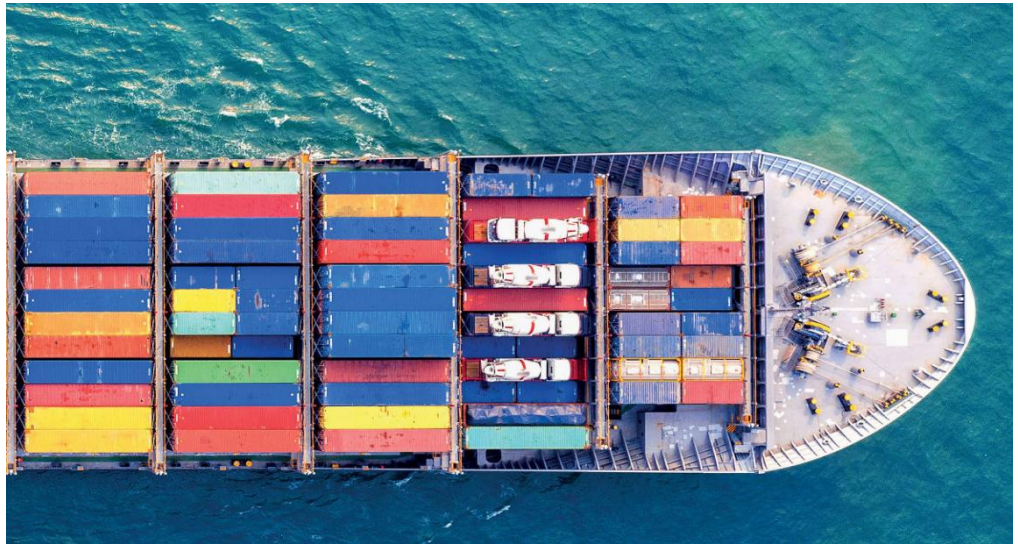
12 February 2026

World Biogas Association

- Global association for the biogas, landfill gas and anaerobic digestion (AD) sectors, dedicated to facilitating the adoption of biogas globally.
- Founded in 2016 by associations from the United Kingdom, the United States of America and Italy, together with 20 founding companies.
- It currently represents around 100 organisations, including national associations, from around the world.
- WBA is an accredited member of the UNFCCC and REN21, an official partner of the CCAC (secretariat of the Global Methane Pledge) and the GMI, a founding member of the Global Biofuels Alliance (GBA), and an associate of the Global Bioenergy Partnership.
- WBA works closely with the Global Methane Hub, IEA, UNIDO, FAO, the European Commission and C40 Cities, among others.

Some of WBA members

Biomethane as a Maritime Fuel



- Biomethane can be liquified into Bio-LNG for maritime use
- Bio-LNG is a **practical, scalable and immediate** pathway for some parts of maritime decarbonisation
  - **pure bio-LNG** could meet **3%** of the total energy demand for shipping fuels in **2030** and **13%** in **2050**.
  - **As a drop-in fuel** blended with fossil LNG, bio-LNG could meet **16%** in 2030 and **63% in 2050**, with **a 20% blending ratio**
- bio-LNG is one of the **lowest cost green fuel**
- when value chains are optimised, it can deliver **negative emissions**

Source: SEA-LNG, 2022; MMMCZCs, Fuel Cost Calculator

The Case for Bio-LNG

Environmental Case

Reduces GHG emissions up to **80%** on a well-to-wake basis compared to conventional marine fuels (LSHFO)

Virtually eliminates SO_x, drastically cuts NO_x, and slashes particulate emissions - delivering air-quality benefits

Produced from waste streams, contributes to **circular economy goals** and abates **methane** emissions

Technical Case

Fully compatible with LNG-ready ships and existing bunkering infrastructure

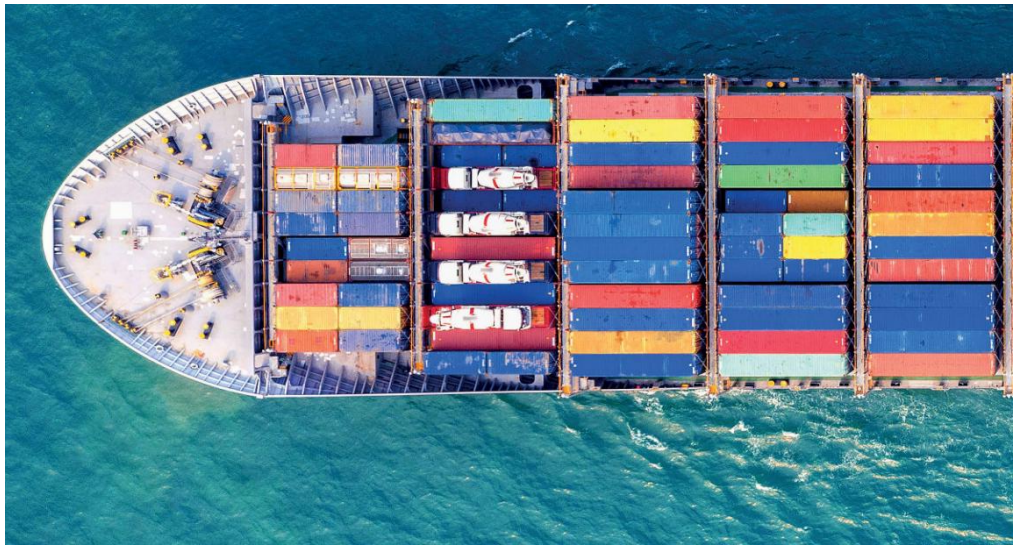
Can be blended with LNG, enabling gradual decarbonisation without major retrofits

Economic Case

Leverages existing and growing LNG investment & offers competitive cost trajectories relative to e-fuels

The Policy Case

- Recognised in the **FuelEU Maritime** and Renewable Energy Directive (**RED III**)
- Aligns with **IMO GHG strategy** and **EU Fit for 55** climate package. Ships running on bio-LNG comply with tightening IMO CI requirements, ship owners can lower EU ETS compliance costs
- Cargo owners can report lower supply chain CI under **ESG disclosure rules**
- Aligns with the **Clydebank Declaration**, to establish green shipping corridors
- Compatible with **IMO Net-Zero Framework**



Key Challenges

Supply constraints:

Global biomethane production must scale fast - **12 bcm of biomethane** is produced globally

Methane Slip:

Technology solutions (engine improvements, after-treatment systems) are emerging to mitigate leakage with industry trials demonstrating **75-90% reduction**

Competing Uses:

Competing demands for biomethane, maritime use will depend on market dynamics, domestic demand and geographical positioning

Source: Cedigaz Market Assessment 2025, Industry initiative publications

Recommendations

Policy Support

- Employ a **technology neutral approach** aimed at driving the lowest cost of compliance
- Recognise that biomethane is a materially scalable fuel for decarbonisation **with relevance to the 2050 ambitions**
- Establish a **certificate mechanism** to enforce decarbonisation in shipping
- Develop existing certificates into **a single standardised guarantees of origin** for biomethane and alternative fuels
- Recognise **biomethane's GHG savings in regulations**, using a full LCA of its carbon intensity
- Separate emissions into **well-to-tank** and **tank to-wake** stages
- **Trace waste feedstocks** from collection according to best practice

Recommendations

Policy Support

- Treat **energy crops as products**, including all cultivation, processing and shipping emissions
- **Recognise negative carbon intensity** values to maximise the credit for Bio-LNG
- **Recognise externalities** e.g. air quality benefits
- **Harmonise sustainability criteria across sectors** to standardise definitions, metrics, and reporting for carbon emissions reduction
- **Accept mass balance** accounting methods
- Establish a **reward mechanism for zero/near-zero fuels** (like subsidies, tax breaks, or credits)
- Advocate for **scaling up sustainable fuel production for the shipping** sector via Nationally Determined Contributions (NDCs)

What is #MakingBiogasHappen?

- #MBH aims to accelerate growth of the global biogas industry by:
  - Addressing fragmented policies and regulations
  - Creating an enabling environment for investment
  - Ensuring growth is safe and sustainable

- Provides tools that can be adapted and adopted by any country/state/city, reducing time required to develop supportive policies, regulations, and standards.
  - Global Biogas Regulatory Framework
  - Anaerobic Digestion Certification Scheme International

Participants of the opening session in the #MakingBiogasHappen programme stakeholder consultation workshop series.

#MakingBiogasHappen - Phase 1

Global Biogas Regulatory Framework

Global Biogas Regulatory Framework

- Provides best-practice policies and regulatory mechanisms that governments and regulators can adopt to ensure the effective use of biogas technologies
- Promotes regulatory harmonisation and investment in the biogas sector

GLOBAL BIOGAS REGULATORY FRAMEWORK

Nine Pillars:

1. International and National Policy
2. Feedstock Policy
3. Biogas Utilisation
4. Digestate Policy
5. Gas Quality Regulations
6. Technical and Operational Quality Standards
7. Permitting Regulations
8. Planning Policy
9. Health, Safety and Environmental Protection

#MakingBiogasHappen - Phase 1

AD Certification Scheme International

AD Certification Scheme International

- Sets minimum health and safety, environmental and operational standards for AD plants.
- Aims to incentivise revenue through maximising operational efficiency.

ADCS INTERNATIONAL

Eleven modules:

1. Site information and understanding
2. Managing health and safety risks
3. Staff training
4. Process monitoring
5. Maintenance of the plant, kit and infrastructure
6. Procuring services
7. Managing environmental risks
8. Cross-contamination regulations compliance
9. Digestate management
10. Biomethane process
11. Life cycle assessment (LCA)

#MakingBiogasHappen Programme Phase 2

January 2025 – December 2026

Aim:

- Raise awareness of #MBH to facilitate global adoption.
- Showcase how GBRF and ADCS can be used in practice
- Support implementation of GBRF and ADCS through state-level Biogas Action Plans in Brazil and India
- Develop guidance using learning from this process to support other nations

Implementation in Brazil & India

Where we are now:

- **India:**
  - Initiated work with Madhya Pradesh to develop a Biogas Action Plan
  - Exploring partnership with Gujarat State

- **Brazil:**
  - MoUs signed with São Paulo (June 2025) and Paraná (Dec 2025)
  - Refining project methodology and securing funding to enable project start later this year.

Signing of Memorandum of Understanding to implement #MBH phase 2 between WBA and SUPEN, Paraná (top left) and SEMIL, São Paulo (bottom left), and Madhya Pradesh (right).

Thank you

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