



Educational workshop on LNG trading

Legal Committee Meeting

Paris, March 7, 2024

Workshop agenda

1. LNG data reporting: now and under REMIT II regime – Giulia Migueles Pereyra, Manager Financial Regulation, Eni
2. Introduction to bioLNG: supply chain, market trends, challenges and outlook – Robin Bressers, Marine LNG Decarbonisation Manager, Shell
3. Case for LNG standard form contract: short term or spot trading – James Atkin, Partner, Reed Smith
4. AggregateEU: current status and outlook – Doug Wood, Chair of Gas Committee, energy traders europe

LNG data reporting: now and under REMIT II regime

Presentation by Giulia
Migueles Pereyra,
Manager Financial
Regulation, Eni



LNG Data Reporting: REMIT and REMIT II Regime

Key elements and regulatory requirements

7th March 2024

Contents



- 1 Regulatory Overview
- 2 REMIT perimeter
- 3 LNG data reporting
- 4 LNG Data Reporting vs REMIT Reporting



Overview «LNG REGULATION»

December 2022
new European “Solidarity Regulation”*



LNG TRADING ACTIVITIES

bids, offers or transactions for the purchase or sale of LNG

- delivery in the Union
- result in delivery in the Union or
- in which one counterparty re-gasifies the LNG at a terminal in the EU

ACER

shall publish a daily LNG price assessment and
- no later than 31 March 2023 - a daily LNG benchmark

shall systematically collect and process LNG market data

WHO

WHAT

HOW

LNG market participants (both buyer and seller)

shall daily perform data reporting to ACER the LNG Market Data through **TERMINAL**

shall have an ACER CODE and be registered on **TERMINAL**

⁶ *Council Regulation (EU) 2022/2576 “Enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders”

Overview «LNG REGULATION»



- ❖ The expiration of the LNG Regulation was originally 30th December 2023.
- ❖ To ensure a continued application of the provision, European Commission has introduced one year prolongation of the LNG measures introduced.

Once REMIT II is published, the obligations introduced by “LNG Regulation”
will be made permanent within REMIT framework

Entry into
force
May/June
'24



- REMIT II will be directly applicable **within 20 days** from the publication on EU Official Journal
- LNG provisions will entry into force after the decadence of “Solidarity regulation”(**1st January 2025**)

LNG Benchmark

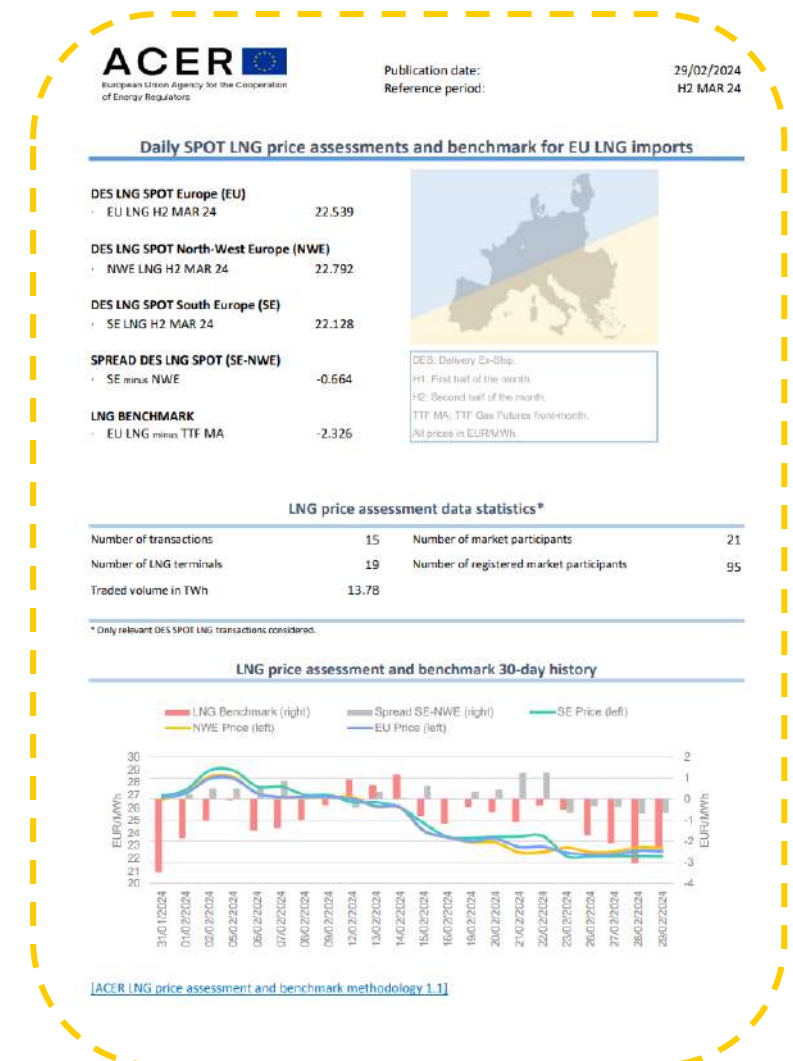


- ✓ The Daily Publication of LNG Price Assessment started January 2023
- ✓ The Daily Publication of the **LNG Benchmark** started March 2023*
- ✓ **LNG Benchmark** is a spread of LNG Price Assessment with TTF Gas Futures front-month

DATE	NORTH-WEST EUROPE PRICE (EUR/MWh)	SOUTH EUROPE PRICE (EUR/MWh)	EU PRICE (EUR/MWh)	LNG BENCHMARK (EUR/MWh)	PDF REPORT
2024.03.04	24.236	25.061	24.195	-2.690	240304_LNGPA.pdf
2024.03.01	24.087	25.053	24.021	-1.788	240301_LNGPA.pdf
2024.02.29	22.792	22.128	22.539	-2.326	240229_LNGPA.pdf
2024.02.28	22.838	22.145	22.571	-3.048	240228_LNGPA.pdf



Correction due to the inclusion of relevant transaction



*https://aegis.acer.europa.eu/terminal/price_assessments

REMIT perimeter



REMIT applies only in EU but its perimeter should be evaluated taking in account:

- ❖ IMPACT on EU market
- ❖ WHERE the activity takes place

LNG is already included in REMIT



Related to REMIT Data

Reporting:

Delivery in the Union = when the contractual Delivery Point of a trade is within EU.

For LNG contracts it means:

- ❖ **FOB** = loading port is in EU
- ❖ **DES** = unloading port is in EU

In REMIT scope



Non-EU counterparties that outside the EU trade contracts for the supply of power, gas and LNG with delivery in the Union are therefore REMIT relevant Market Participants* and those contracts are subject to REMIT



*For REMIT relevant Market participants both buyer and seller are considered.



LNG Data Reporting



INCLUDED

- ✓ **Bids / Offers** at a trading platform, or communicated to price reporting agencies, or communicated bilaterally
- ✓ **LNG Transactions**
 - **Spot** contracts for purchase or sale
 - Portfolio “framework” contracts (**Long Term Agreement**) with a duration **no more than 5 year**
- ✓ **LNG deliveries**
 - cargo deliveries related to Portfolio “framework” contracts with a duration of more than 5 years (“**ADP included**”)
 - **Cargo Diversion** to the EU market (not already reported on Terminal)



EXCLUDED

- Long-term Portfolio “**framework**” contracts (ONLY the single delivery is reportable)
- Bids and Offer to a **Portfolio-type** contracts
- **In-tank** transactions
- Bids and offers at **re-gasification terminals**
- **SSLNG** transactions with specialised vessels with **capacity less than 75,000 m3**
- LNG **truck** loading and unloading
- Cargo swap
- **Intragroup transactions**
- Transactions at **virtual storages**
- **Lifecycle events** (e.g. cargo diversions to EU/within EU) regarding transactions, bids and offers already reported in TERMINAL

*Version updated March 2023

LNG Data Reporting vs REMIT Reporting



LNG DATA Reporting	REMIT Reporting
LNG activity in EU / with potential delivery in EU should be reported to ACER real time immediately after it is agreed.	Bilateral LNG trades should be reported within 30 solar days from the issuing of Confirmation Notice.
Framework agreement e LT agreement are not reportable	LT agreement are reportable
Contractual lifecycle events are not required to be reported	Reporting is required for every lifecycle events (contractual and invoicing)
The value of the contract should be estimated	The data to be reported are those included into the contract



Any questions?

Case for LNG standard form contract: short term or spot trading

Presentation by James
Atkin, Partner, Reed Smith



Case for LNG standard form contract: Short term or spot trading

By James Atkin, Partner

Discussion outline

Evolution of LNG spot trade documentation

Structure of LNG spot trade documents

Reasons for maintaining status quo

Arguments for market standardization

Conclusions

Evolution of LNG spot trade documentation

Developed from long-term bilateral LNG sales contracts

- LNG projects are capital intensive requiring long-term offtake commitments by credit-worthy buyers to underpin financing commitments
- LNG sales were originally conducted on A-B linear trades with limited destination flexibility
- Tailored to meet the particular requirements of the LNG export facility and receiving terminal
- Lenders and project sponsors require certainty of scope of potential liabilities
- Early LNG spot trades were structured on a back-to-back basis with source LNG SPA
- Market has evolved with portfolio players and traders, complementing traditional producers and utility end customers

Structure of LNG spot trade documents

LNG market convention is to use Master Sale and Purchase Agreements

Key commercial terms set-out in main body of the MSPA

- No obligation to buy / sell specific quantities of LNG
- Establishes a framework for conducting future LNG sales:
 - Take-or-Pay / Deliver-or-Pay liability
 - Off-Specification LNG
 - Liability regime
 - Termination

Confirmation Notice used to agree particular terms for LNG cargo(es) sales

Operational, technical and financial provisions set-out in schedules

- maritime provisions for each of FOB and DES sales
- measurement and testing
- credit support documentation (PCG / SBLC)

Reasons for maintaining status quo

Existing market participants have established LNG trading documentation

- Reflects specific role of participant in the LNG market: buyer / seller / trader
- Tailored to reflect particular risk profile of participant - general damages / liquidated damages / bespoke damages regimes
- Reflect market specific requirements / terminal liability regime
- Back-to back arrangements with upstream supply arrangements

If it's not broken ...

- Numerous previous attempts at standardization have not secured market traction
- Claims that model forms are too complicated, too trader friendly, too producer friendly...
- One size does not fit all in the LNG market

Arguments for market standardisation

Requirement to negotiate bespoke bilateral MSPAs an impediment to new market entrants

- High entry cost to negotiate multiple MSPAs with established LNG players
- Battle-of-the-forms or adopt standard terms of other LNG players
- Time delay / loss of opportunity in building LNG trading portfolio / book of business
- Ongoing cost of legal support to negotiate and tailor each LNG trade

Disconnect with long-term supply arrangements

- No relationship with Operator and no ability to control LNG plant operations
- Force Majeure not tailored to trades
- Unclear scope of reasonable endeavours obligation for portfolio suppliers / traders

Arguments for market standardisation

Bespoke bilateral MSPAs create risk in daisy-chain transactions

Detailed liability and performance provisions create risk of mismatches:

- timing trigger for failure to take / deliver
- costs and expenses v. liabilities
- capped actual damages v. liquidated damages
- scope of “wilful default” exception
- treatment of operational tolerance for a FTT / FTD
- reasonable endeavours v. acting as a Reasonable and Prudent Operator

LNG is an outlier in the commodities market

- oil and petroleum products are all traded on standard market terms
- bespoke liability regimes in LNG sales deviate from “trading norms” and in certain respects from general provisions of English law

Conclusion

Historic development of LNG market is not a reason to maintain the status quo

Traditional LNG Buyers / Sellers now operate across the supply chain

Growing volume and value of trade supports move to standardization

Challenge remains of establishing a balance among market players

Recognise unique features of LNG trading arrangements

Need to secure global support and engagement

Contact details



James Atkin

Partner

London

+44 (0)20 3116 2923

jatkin@reedsmith.com

ABU DHABI
ASTANA
ATHENS
AUSTIN
BEIJING
BRUSSELS
CENTURY CITY
CHICAGO
DALLAS
DUBAI
FRANKFURT
HONG KONG
HOUSTON
LONDON
LOS ANGELES
MIAMI
MUNICH
NEW YORK
ORANGE COUNTY
PARIS
PHILADELPHIA
PITTSBURGH
PRINCETON
RICHMOND
SAN FRANCISCO
SHANGHAI
SILICON VALLEY
SINGAPORE
TYSONS
WASHINGTON, D.C.
WILMINGTON

Reed Smith is a dynamic international law firm, dedicated to helping clients move their businesses forward.

Our long-standing relationships, international outlook, and collaborative structure make us the go-to partner for speedy resolution of complex disputes, transactions, and regulatory matters.



This document is not intended to provide legal advice to be used in a specific fact situation; the contents are for informational purposes only. “Reed Smith” refers to Reed Smith LLP and related entities. © Reed Smith LLP 2024



AggregateEU: current status and outlook

Presentation by Doug Wood, Chair of Gas Committee, energy traders europe

Aggregate EU

- Created by Regulation EU 2022/2576 on 19 December 2022 *enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders*
 - *Temporary rules on...the expedited setting up of a service allowing for demand aggregation and joint gas purchasing by undertakings established in the Union*
 - *Creation of ad hoc steering board*
 - *Temporary service contract with a service provider*
 - Exclusion of Russian-based or –controlled companies; exclusion of gas originating in Russia
 - MS must ensure undertakings participate in demand aggregation for storage filling targets
 - Not mandatory to transact
- Extended by Regulation 2023/2919 until end 2024
 - Mandatory participation for storage filling was deleted
- Permanent Extension in Gas Package awaiting plenary vote.

Results and next steps

Four rounds and a fifth mid term product

1 Matched: 10.9 bcm

2 Matched: 11.98 bcm

3 Matched 11.86 bcm

4 Matched 7.35 bcm

5 Mid term: Demand – 34 bcm (15.3 bcm LNG and 18.3 pipeline); Supply 97.4 bcm 17 suppliers

Total contracted volumes not published, but believed to be around 1 bcm pipeline gas, no LNG

Gas Regulation provides for a mechanism to support market development of hydrogen under the activities of the European Hydrogen Bank, until 31/12/2029.

Independent consultant engaged to analyse effectiveness of previous rounds and assess suitability of platform for growth to hydrogen market. Expected to report end March, but no commitment to publish.

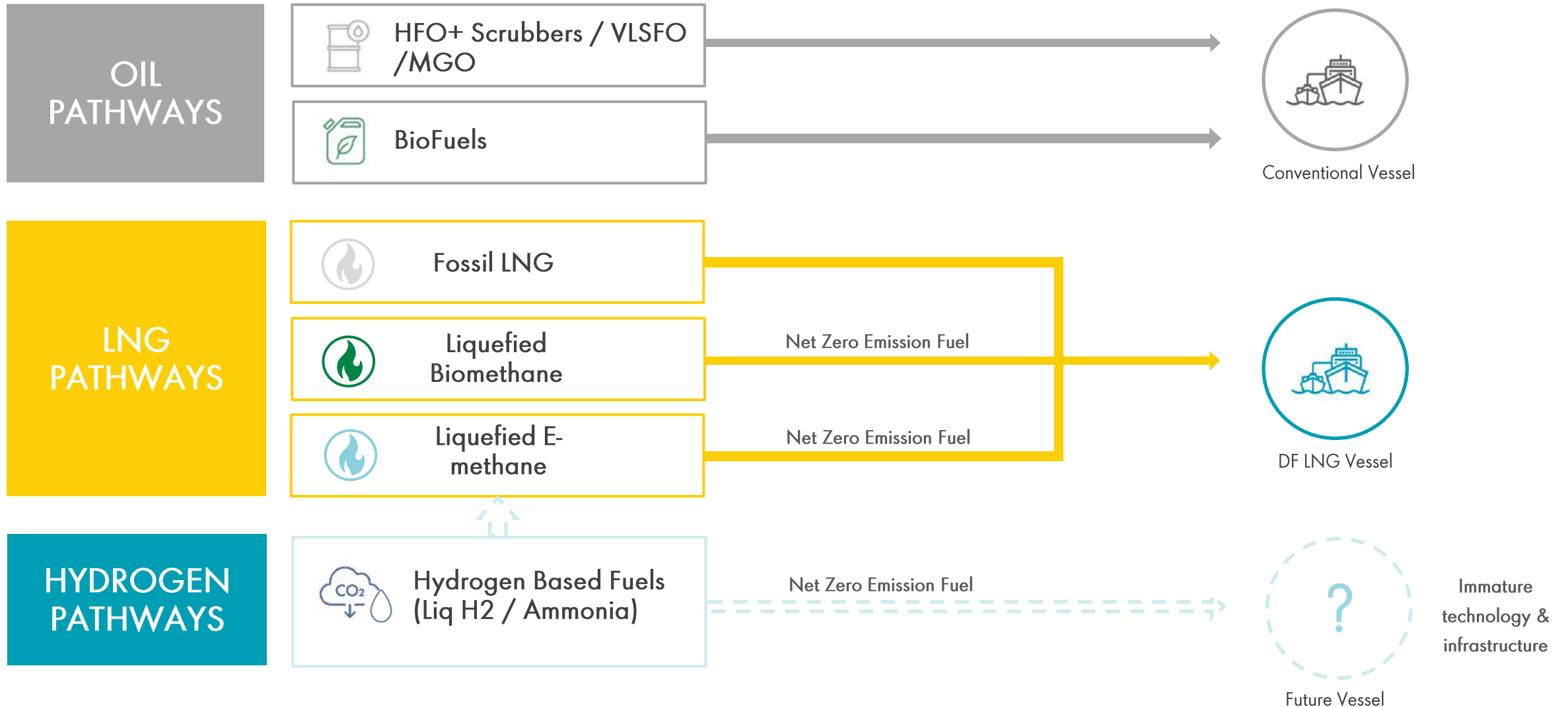
Introduction to bioLNG: supply chain, market trends, challenges and outlook

Presentation by Robin
Bressers, Marine LNG
Decarbonisation Manager,
Shell



LNG – DESTINATION FUEL

Shipping Decarbonisation: Fuel Pathways to Net Zero Emission



LNG - fuel in transition

Fossil LNG

Exploration of natural gas

Treatment

CI Range

70 – 90*
(76.7)
g CO2 eq / MJ

Liquefied Bio methane

Manure & Slurry

Food & Amenity Waste

Crops & Residues

Feedstock

Bio CO2

Anaerobic Digester

Capture Digestate

Biogas upgraded to Liquefied Biomethane

CCS/CCU

CI Range

-141** to 8
(9.4 & -94')
g CO2 eq / MJ

Liquefied E-methane

Renewable Energy

Surplus Electricity for Renewable Energy

H2O

Reaction for Methanation

CO2

Bio CO2

CO2 from DAC

Stored as Synthetic Methane Gas

4H₂ + CO₂ → 2H₂O + CH₄

CI Range

0 to 10
(4.7 & 9.4')
g CO2 eq / MJ

Infrastructure in place and growing

Liquefaction

Capacity: 455 mtpa ***

Shipping to LNG terminals

Global Fleet : 655 vessels ****

LNG terminal

Regasification Capacity: 947 mtpa ***



DF LNG Vessel

Source: Shell view LNG as a fuel in transition

1: Numbers used in the calculations going forward. 9.4gCO2eq/MJ used for Bio-LNG from municipal waste, AD crop farming residues, biomass gasification and Liquefied E-methane from Bio-LNG production. -94gCO2eq/MJ used for bio-LNG from animal manure

*77gCO2eq/MJ for fossil LNG is engine specific (taking into account engine efficiency & methane slip) for a 2-Stroke SS-Diesel DF engine (from Sphera 2nd Lifecycle GHG Emission Study 2021)

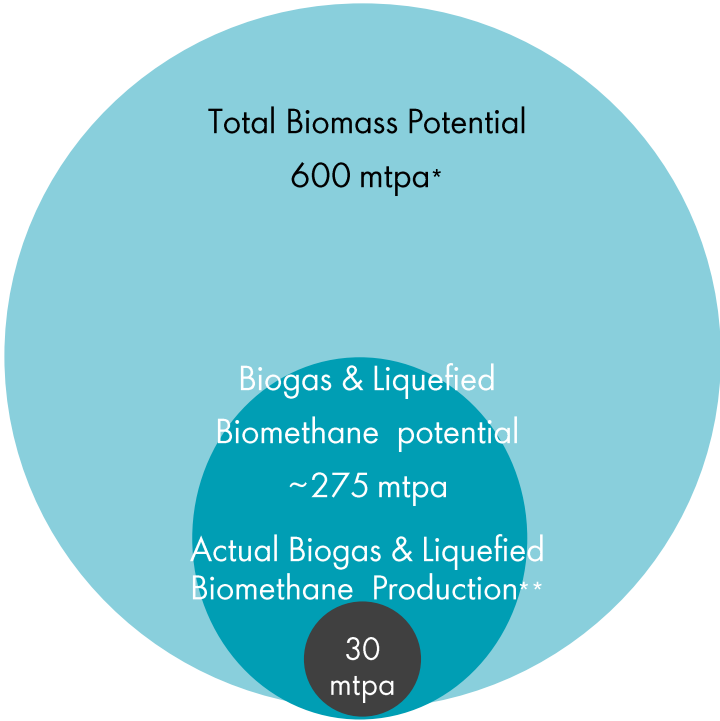
**US CI range for Liquefied Biomethane

*** GIIGNL Annual LNG Industry Report, 2020

**** Clarkson's WFR, July 2021

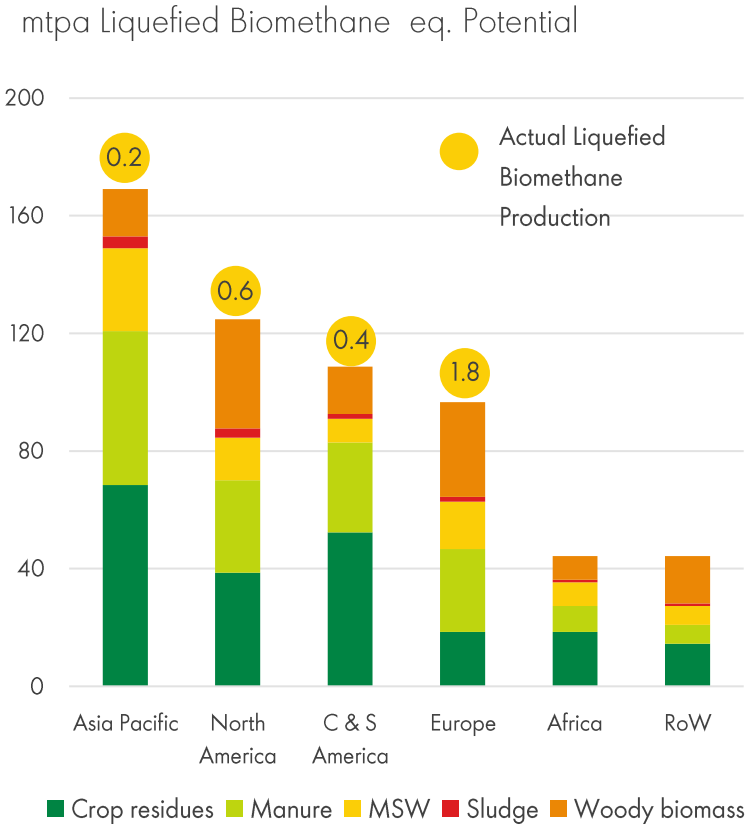
Liquefied Biomethane potential is largely untapped

Liquefied Biomethane potential is largely untapped as only 5% of the potential is in production today*



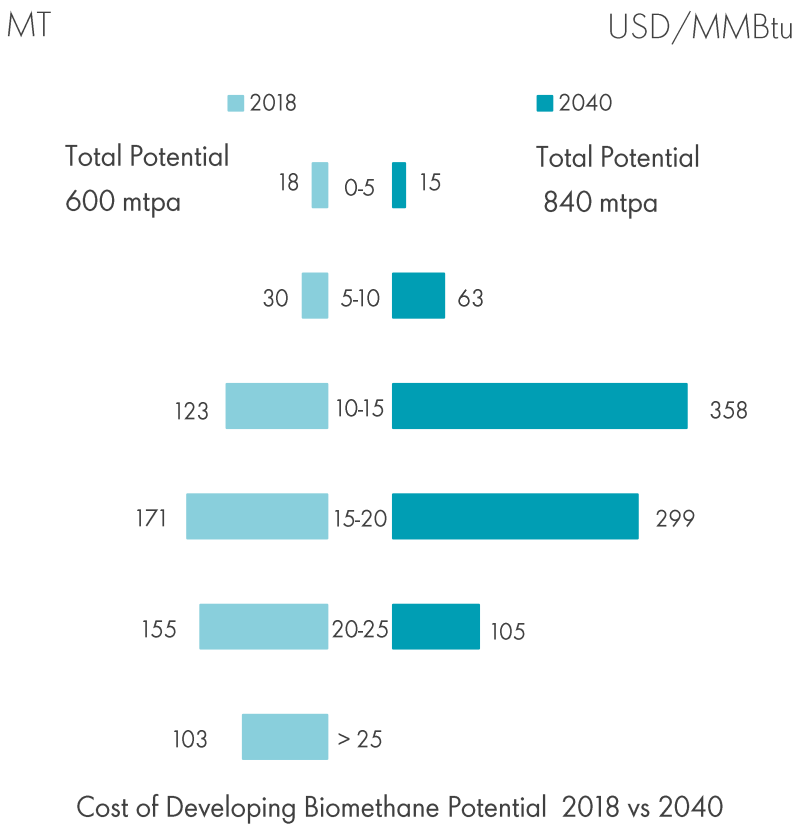
Source: IEA 2020 (Mtoe converted to MT LNG),
Marine demand in mtpa LNG
* Total Liquefied Biomethane is Liquefied Biomethane from Anaerobic Digestion + Gasification
** Combination of Liquefied Biomethane & Biogas as end products. Biogas is expressed as Liquefied Biomethane eq., CO2 is deducted from Biogas production.

Liquefied Biomethane can be produced in regions with key ports and across a variety of feedstock



Source: IEA 2020 (Mtoe converted to mtpa LNG)
* MSW – Municipal Solid Waste

Average cost of Biomethane production is 19 USD/MMBtu today and will go below 15 USD/MMBtu by 2040



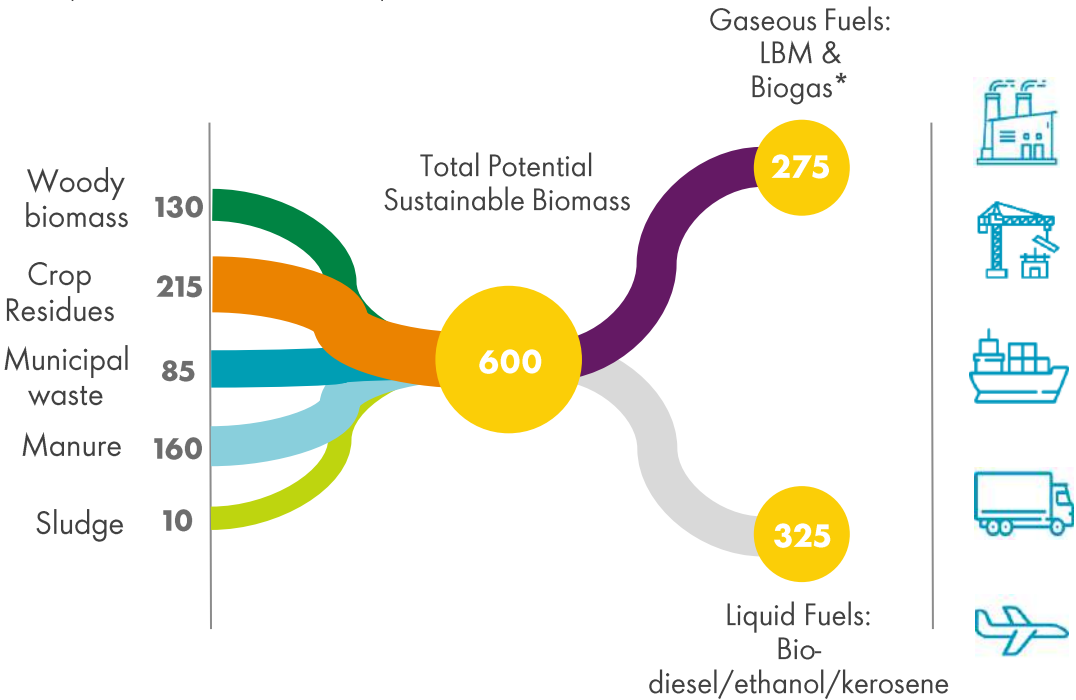
Source: IEA 2020 (Mtoe converted to MT LNG)
Indicative: 10 US\$/MMBTU = 100US\$/t CO2

Liquefied Biomethane plays a role in poly-fuel future

Supply:

IEA estimates that 275 mtpa will be available for production of gaseous fuels. The ability to convert this potential into Liquefied Biomethane for transport use largely depends on regulations

mtpa Liquefied Biomethane eq.

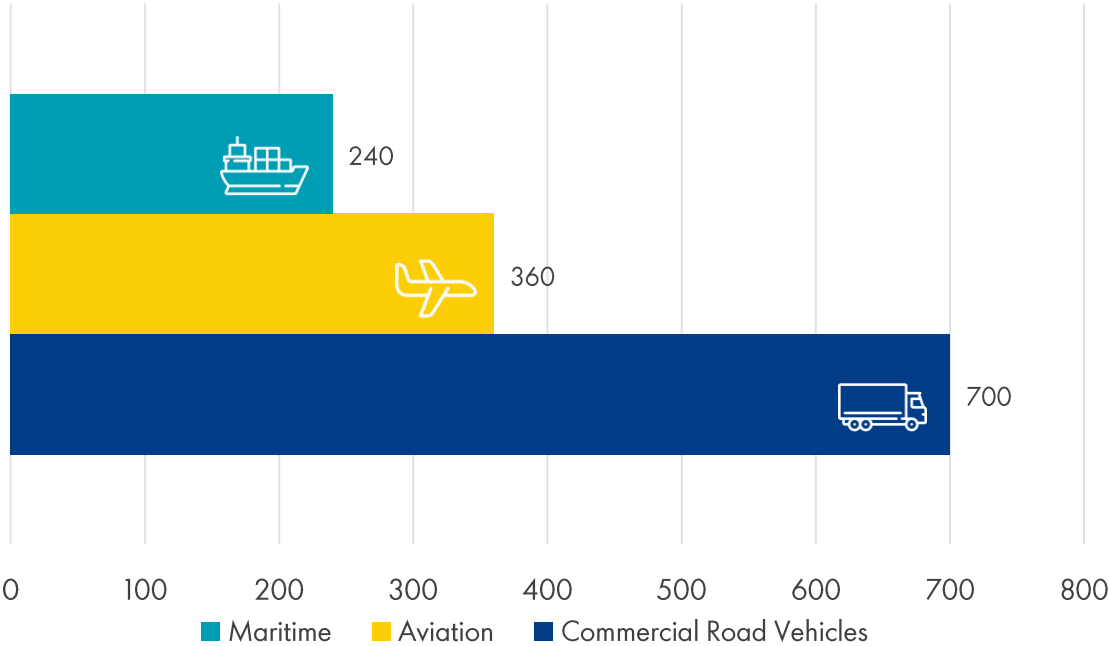


Demand:

Range of alternative fuels will emerge to satisfy demand for low carbon solutions. LBM can help shipping industry to meet rising demand and comply with future regulations

mtpa Liquefied Biomethane eq.

Total Demand for Hard to Abate Sectors in 2040



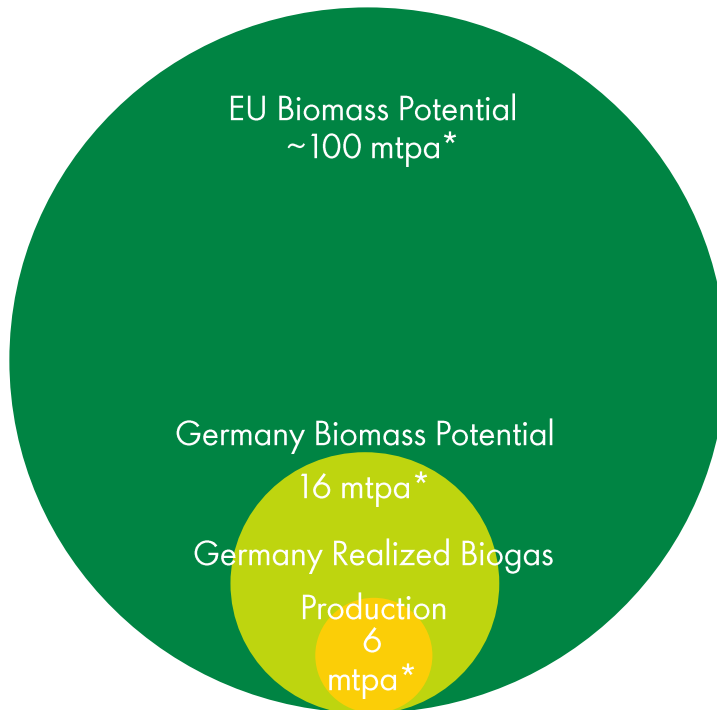
Source: IEA Outlook for Biogas and LBiomethane 2020; International Energy Agency (2021), Net Zero by 2050, IEA, Paris
* The IEA scenario estimates about 41 Mtpa could be available to Shipping.

Source: DNV Energy Transition Outlook, 2021

Germany is a real-life example of a rapid Biomethane production take-off

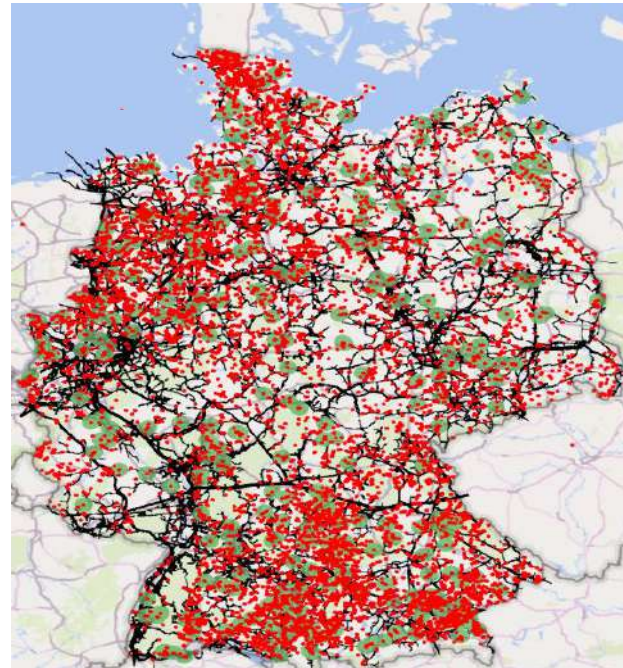
Germany is able to realize 40% of its biomass potential into the production of biogas today

mtpa Liquefied Biomethane eq.



Source: ~100mtpa - IEA 2020 (Mtoe converted to MT LNG)
16, 6, 0,8mtpa - Shell Liquefied Biomethane Market Study, 2021 & EBA, Statistical Report 2020; * mtpa Biomethane eq.

Growing infrastructure can further deliver Biomethane production volumes to the market



- In red - 13,184 Biogas plants
- In green - 2841 15 years old plants which will soon step out of German Biogas subsidy and can be acquired in the future

Source: Marktstammdatenregister ([LINK](#))

Stable government incentives for the period of 20 years made production of LBM financially attractive

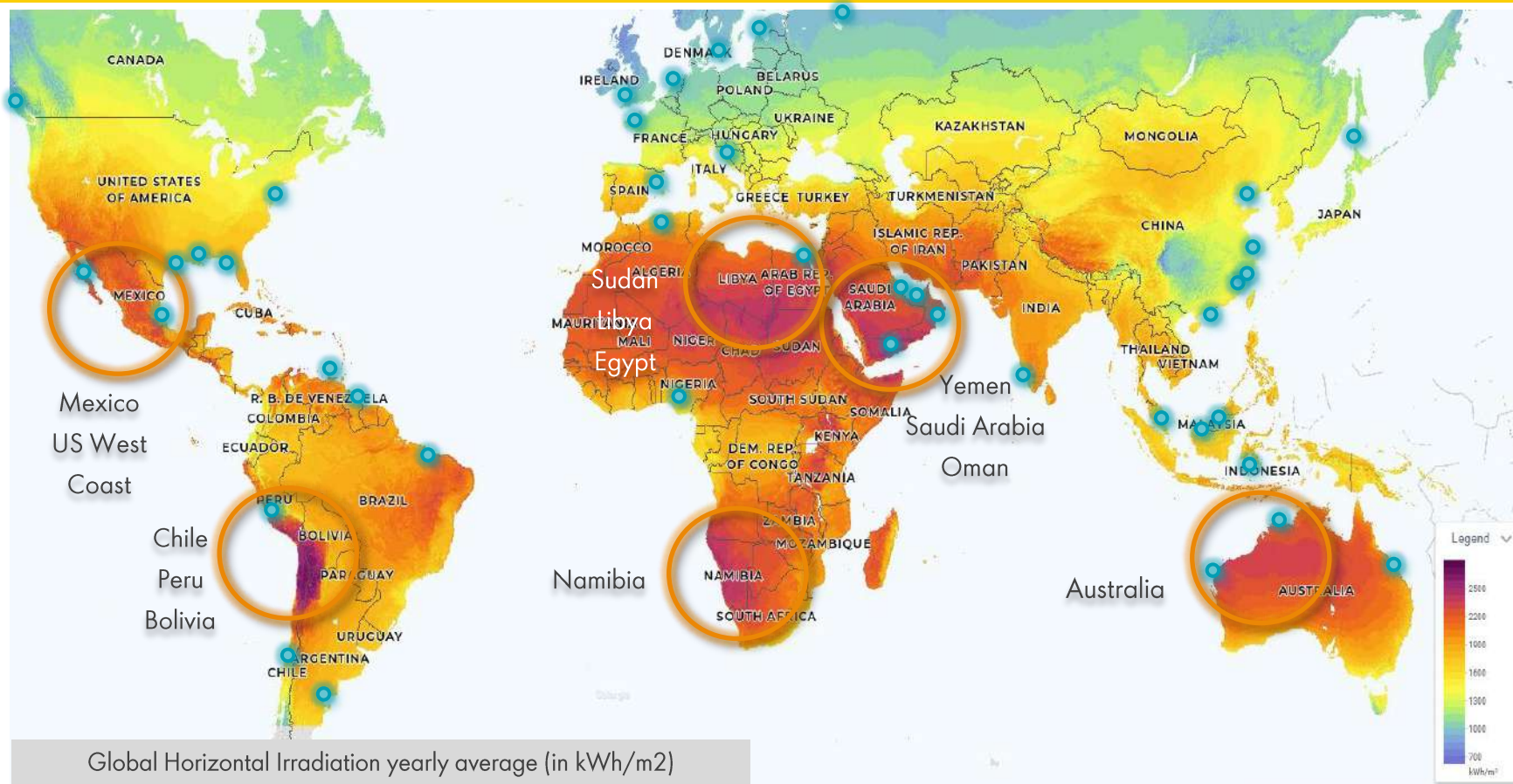
- Subsidies for biogas: 10-15cnt/kWh
- Attractive and scalable offtake agreement
- More subsidies for processing manure
- More subsidies for providing balancing for the peak hours

If government incentives are in place, other European counties with Biomethane potential can take a significant part in the supply of Biomethane

Source: Shell Biomethane Market Study, 2021

Liquefied E-methane can offer a pathway for LNG to be a destination fuel

Regions with high solar irradiation potential & availability of existing LNG infrastructure



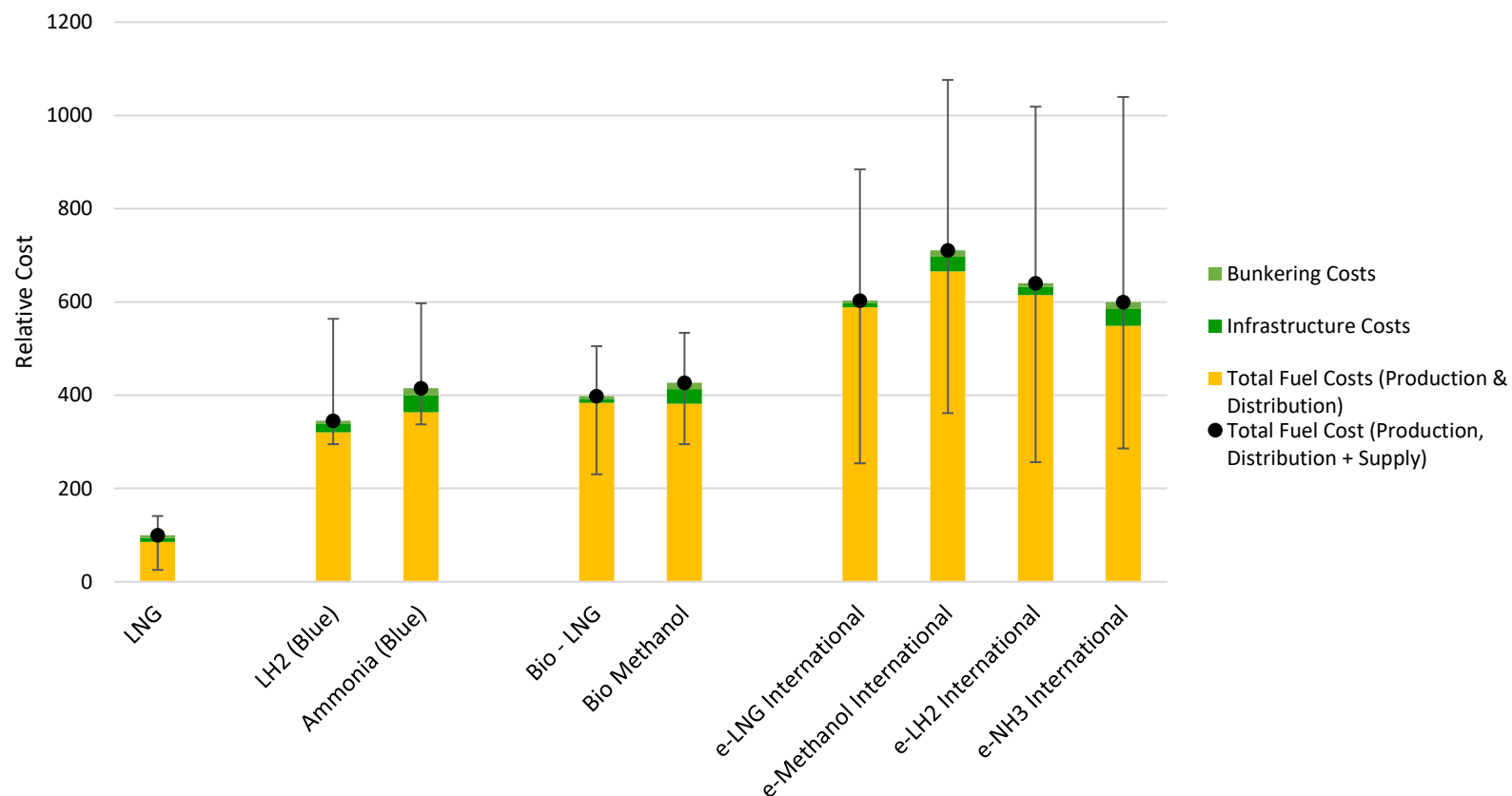
- Liquefied E-methane production will require significant amounts of low-cost green hydrogen to be made available and therefore this could be in regions of high solar radiation potential
- Production economics can be further improved when associated with existing LNG liquefaction infrastructure

Source: Solargis & Southern Green Gas



BioLNG & E-LNG are no regret fuels

A cost-competitive option now and in the future, with infrastructure in place - a pathway from BioLNG to E-LNG provides us with a credible alternative to what is available in the market today



- E-Fuels are cost comparable to each other considering that there is uncertainty in this area

The main differentiating factor between **LNG** and the other fuels is whether the **infrastructure is in place** or not.

- For alternative fuels, infrastructure cost will be higher at the start when volumes are low.

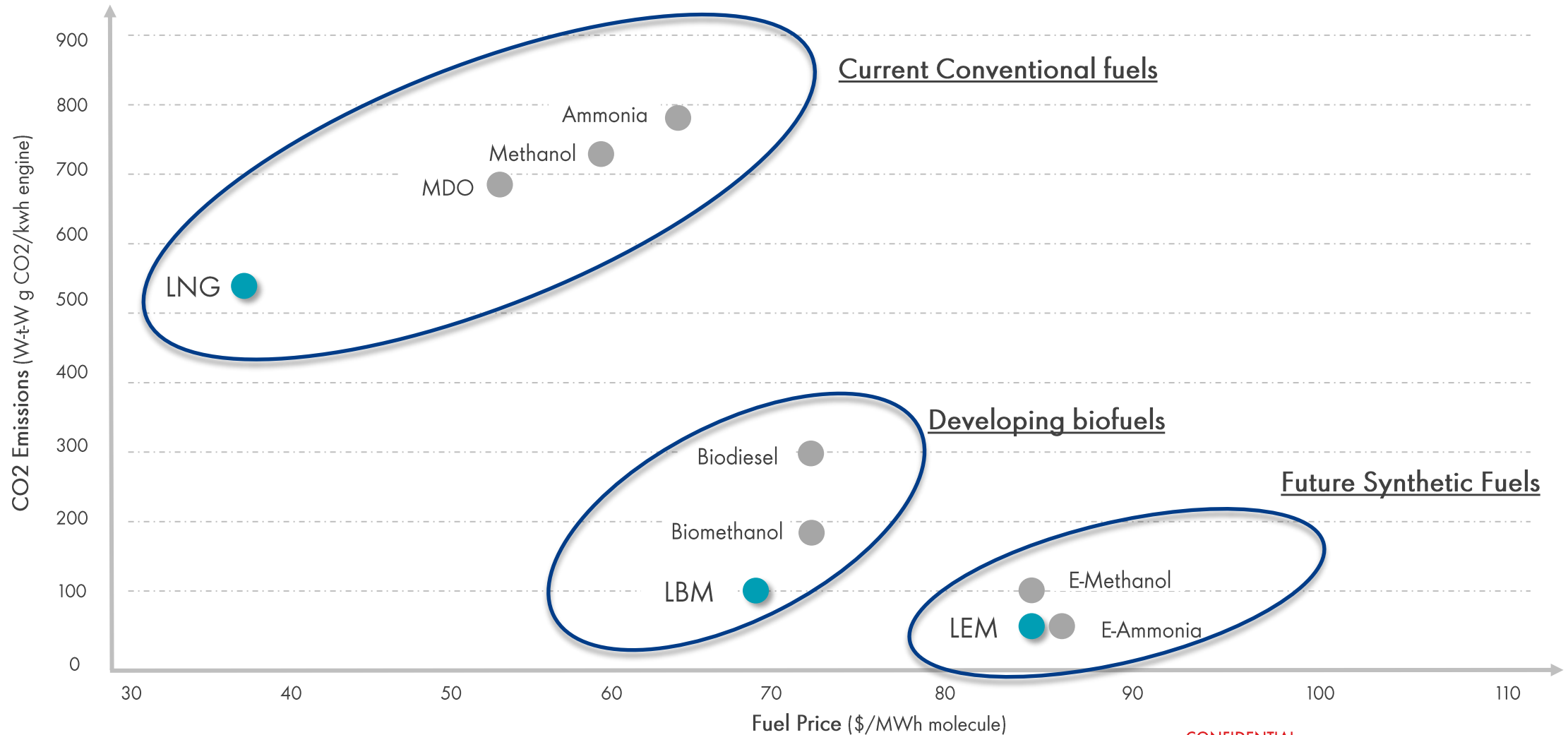
Sources: Interpretation of LR-UMAS 2020, DNV 2021, Internal studies (Hamburg University of Technology Study, Internal Bio-LNG costs)

Copyright of Shell International B.V.

CONFIDENTIAL

LNG is the cleanest and the cheapest fuel available today and tomorrow

CO2 emissions vs 2050 fuel price



CONFIDENTIAL

What are our future fuel choices and how do they compare?

LNG with Bio/Liquefied E- methane as drop-in solution provide a progressive pathway towards NZE as productions scale up economically

Decarbonisation in Shipping	LNG	LBM	LEM	Green Hydrogen	Green Ammonia	Green Methanol
 Fuel readiness						
 Ship Technology readiness						
 Infrastructure readiness						
 What's good about it?	Up to 23% less CO2 than VLSFO	- Drop-in solution - Synergy with other sectors	- Drop-in solution - Synergy with other sectors	- Synergy with other sectors - Carbon free (TtW & WtW can be zero carbon)	- Not cryogenic -33 deg C - Carbon free	- Ambient temperature - Carbon neutral
 Challenges	- Fossil fuel - Previous investment in LNG	Getting to scale and dispersed production	Requires a CO2 or bio-CO2 source, & DAC	- Explosive - Highly cryogenic 2.6x storage vs LNG - Low ignition energy - Commercialisation at least 5-10yrs away	- Highly Toxic & corrosive - Pilot fuel required 2x storage vs LNG - High Ignition energy	- Mildly Toxic - Need CCS 1.4x storage vs LNG

What is needed to transition from fossil LNG to NZE LNG?



Well-to-Wake emissions regulations



Large scale investments into Liquefied Biomethane and Liquefied E-methane production



Operability => Safe operations, density (opportunity cost), range, economic viability



Technical viability => GHG footprint, LNG Engine technology, fuel & infrastructure compatibility



Proof of concept => Decades of experience handling this molecule



Infrastructure => Gas grid, liquefaction, transport, storage, terminals, bunker vessels

Shell's Commitment to LNG's Net Zero Emission Pathway

SUPPLIER

LNG Bunkering Network

3 Continents
10 Countries
15 ports



LBV Portfolio

5 - Operational
5 - Construction
2 - On order



\$1-2_{BLN}

over the next 10 years to develop Shell's LNG bunkering network

CUSTOMER

To date:

\$2-2.5_{BLN}

80

Investment in cleaner solutions for Shell's shipping operations

100+

LNG-fueled Oil and Products Tankers (50% of Crude Vessels on LNG)

Vessels where Energy Efficient Technology Deployed

\$2-3_{bln/year} in New Energy Solutions

Hydrogen

Hystra - liquefied hydrogen carrier



NorthH2 - Green H2



Bio methane

Bio LNG production project Germany



Bio LNG production project Netherlands



Other Fuels & Technologies - Fuel Cells, Direct Air Capture, etc.

CONFIDENTIAL

Under EU regulation, the gas grid is one logistics facility allowing for injection of biomethane at one location and extraction of liquefied biomethane at another location, whereby the GoO/PoS acts as proof for the extraction of liquefied biomethane

