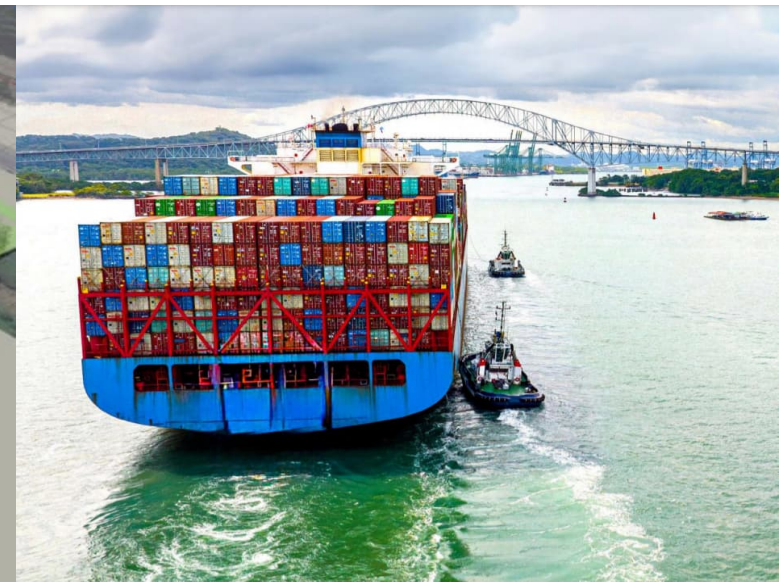




E-METHANOL-NEW GREEN FUEL FOR MARITIME AND OTHER SECTORS



Puertollano 20 MW Green H₂ Plant





GROUP NEOENERGIA



Iberdrola Group introduction

Largest 100% private integrated utility in Europe with >€90 Bn market cap in 2025



Global Renewable Leader
44.5 GW installed capacity
+2.6 GW in the last 12 months



Green Power
~83 TWh/year production
(+5% vs 2023)



Leading EU PPA market⁽¹⁾
1.25 GW contracted in 2024



2024 Full Year Results
€45 Bn Revenues
€16.8 Bn Ebitda (+17%)
€ 17 Bn Investments



Workforce & contribution
+42,200 employees
€10.3 Bn in taxes
(+7.5% vs 2023)



Investment in R&D+i
€400M (+10% vs 2023)
#1 private utility in Europe⁽²⁾



84% owned installed capacity
emissions free

Only 38 grCO₂/kWh in Europe
5 times less than industry average

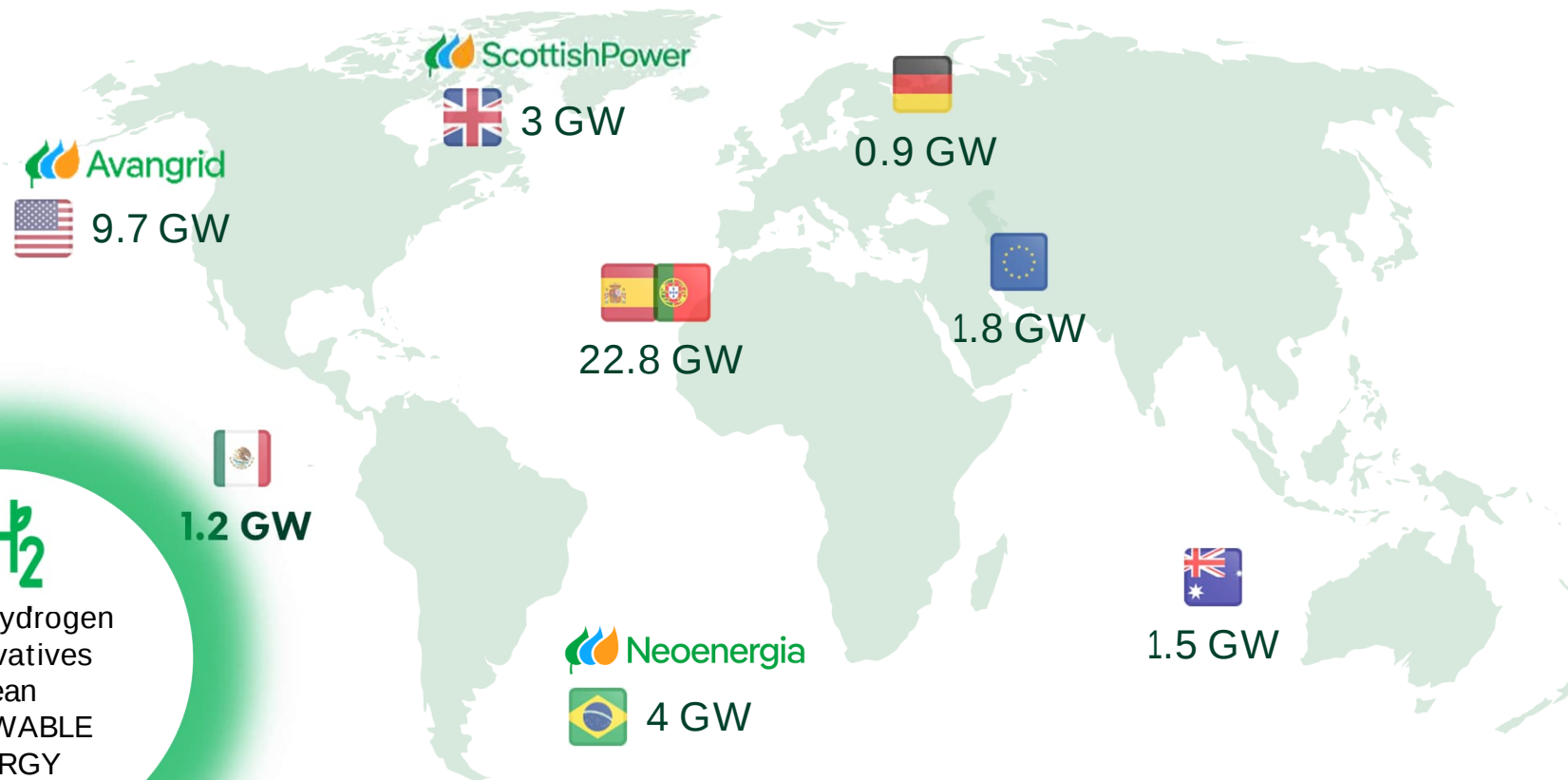
⁽¹⁾ According to the report "Pexapark Renewables Market Outlook 2025"

⁽²⁾ According to the European Commission, based on 2023 figures

A World Leader on Renewable Energy

A diversified renewable energy portfolio of 44,478 MW

2.6 GW installed (715 MW offshore) in 2024 and 83 TWh annual production (+5% vs 2023)



Onshore Wind
20.8 GW



Solar PV
8 GW



Offshore Wind
2.4 GW



Hydro
13.3 GW



Batteries
0.2 GW



Green Hydrogen
& Derivatives
mean
RENEWABLE
ENERGY

Who is Neoenergia?

Neoenergia is Iberdrola's affiliate in Brazil since 1997

Present in 18 states and the District Federal, operating in generation, transmission, distribution

Largest utility by customers served: 17 Million

>25 years investing in the
Brazilian electricity sector



Largest electrical utility
by number of customers

5 companies
18% of market share

17 million
clients



Pioneer in clean energy and
energy solutions

5.3 GW installed capacity
5.7 TWh commercialized in 2022

90%
renewable



Sustained and balanced
growth

2x EBITDA in 5 years
3x net profit in 5 years

ESG
our DNA



Neoenergia in a nutshell



Distribution

5 electrical utilities



Transmission¹

18 Concessions



Renewable Energy

7 hydropower plants
37 wind farms in operation
7 farms in construction
1 solar plant in operation
1 solar plant in construction



Free Market (Liberalized)

11.2 TWh sold to final costumers
1.7 thousand clients with
distributed solar generation



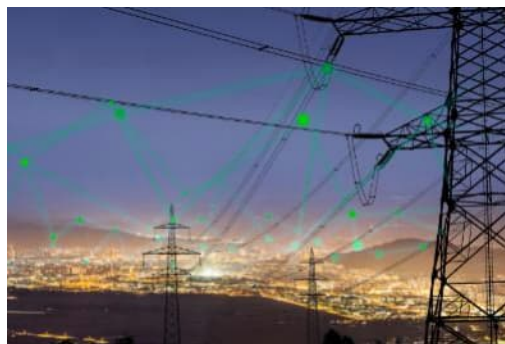
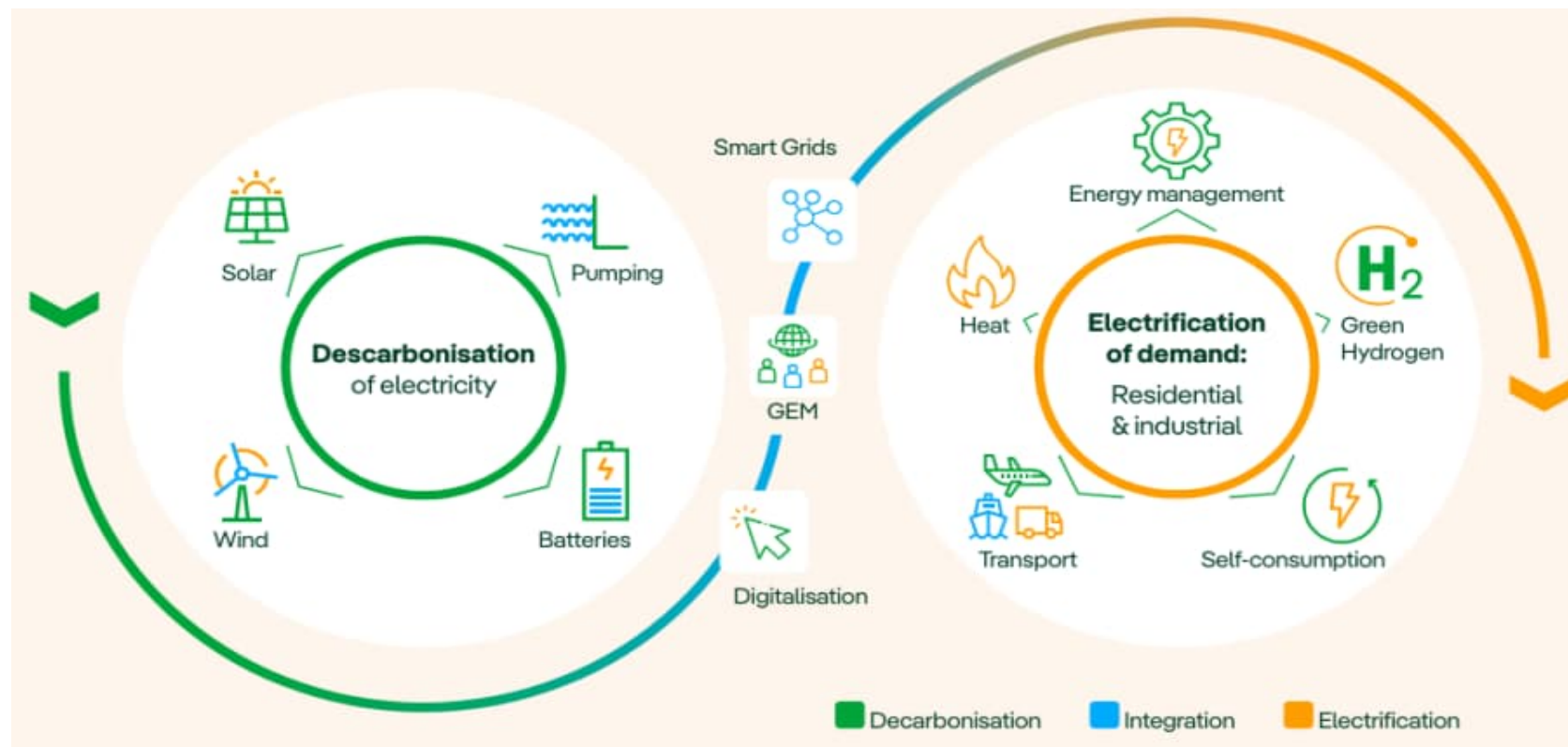


IBERDROLA

H2



Iberdrola-Solutions in Decarbonization



Green H2-The complement to electrification

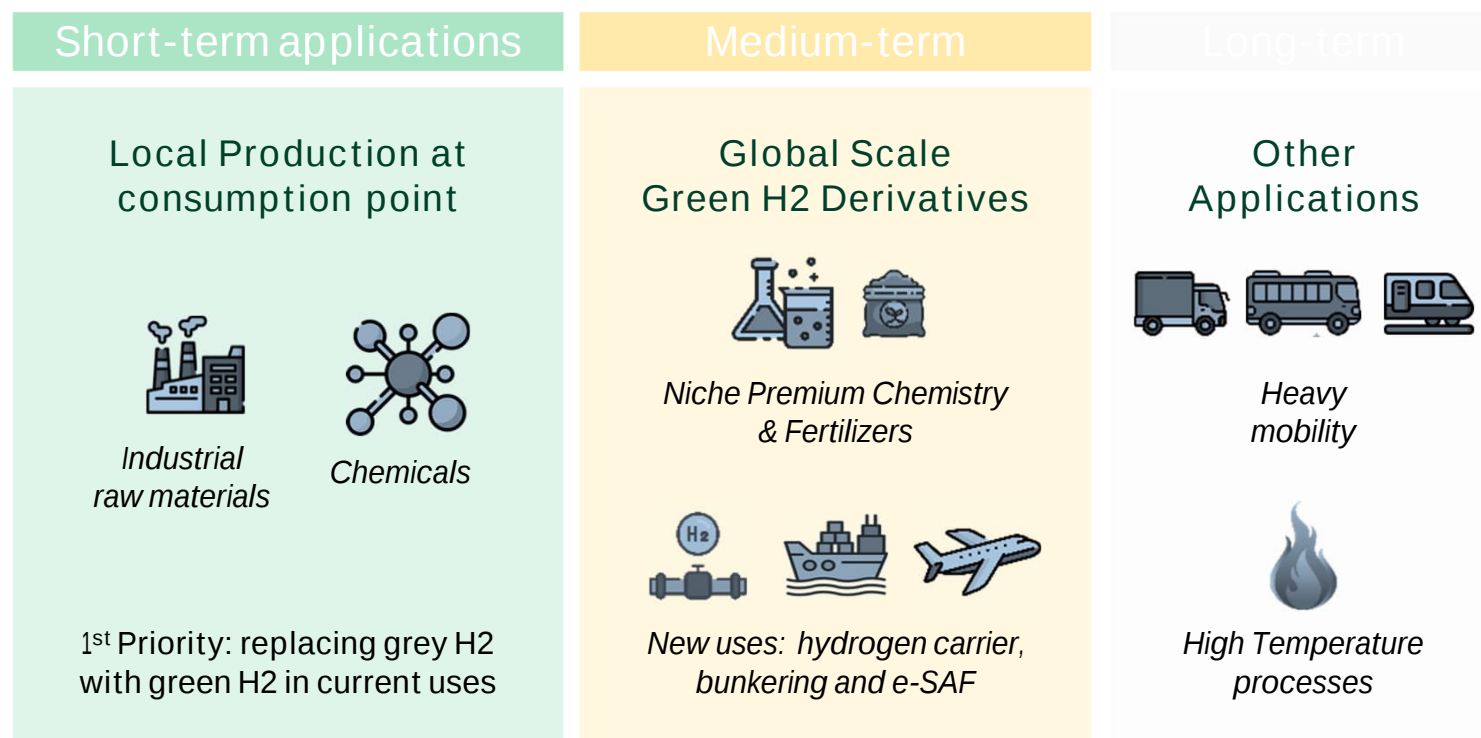
Most of the current final energy demand in Europe could be electrified using available clean technologies (>85%)

There are, however, certain sectors in which electrification might not be enough to meet decarbonization targets

Green Hydrogen makes sense as a complement to electrification in those sectors and uses considered hard-to-abate, or as a green raw material feedstock

And the greener, the better. Iberdrola is not supporting any blue H2 project

Green Hydrogen & Derivatives: Crucial to decarbonize the “hard to abate” sectors



Spearheading the Green Hydrogen development



FIRST MOVER

3 plants operating in Spain
Mastering electricity supply
for RFNBO H₂ since 2022



ALLIANCE bp

First 25 MW project under
construction (COD 2026)



UNITED KINGDOM

2 successful projects in
HAR 1: Whitelee 10 MW
and Cromarty 15 MW



*Puertollano 20 MW plant
One of the largest electrolyzer in
Europe, operating since 2023*



AUSTRALIA

Supporting green minerals
and developing opportunities
in Townsville



BRAZIL

1 HRS under construction
4 projects for industry
(ANEEL)
Working on derivatives



H₂ DERIVATIVES

Green NH₃ and e-Methanol,
new business lines to support
our partners' decarbonization



Iberdrola is already operating three Green H2 plants

One of Europe's
largest electrolyzer



20 MW Green H2 plant in Puertollano

- Operating since 2023
- PEM ELY from NEL
- Capacity: 3,000 tpa for fertilizer's industry
- H2 plant connected to a 100 MW solar PV
- Part of a larger IPCEI project

1st green H2 mobility
project in Spain



2.5 MW Green H2 station in Barcelona

- Operating since 2022
- PEM ELY from Cummins
- Capacity: 400 tpa for buses
- 46 buses charged every day
- 2nd phase - 5 MW

Decarbonization of
fragrances



1.25 MW Green H2 plant in Benicarló

- Operating since January 2025
- PEM ELY from Cummins
- Capacity: 100 tpa
- 100% decarbonization of grey H2 consumption onsite

Progressing in our Green Hydrogen Alliance with bp



Iberdrola & bp formed a 50:50 joint venture in Spain to develop Green H2 projects together.
FID taken for the 1st one and preparing scale-up beyond 100 MW

Location:
bp's refinery (Castellón)

25 MW electrolyzer
PEM - Plug Power

RES: 200 GWh/year
Green H2: 2,800 tpa

Under construction
COD: Q2 2026

Funding: €15 Million
(Spanish subsidy)



bp's refinery in Serrallo Industrial Park, Castellón



25 MW mock-up plant – 5 modules of 5 MW



Feb 6th, 2025: Construction starts for 25 MW project

After building reality in H2, derivatives are the next step

Large projects,
close to FID



Palos/PLL II - 230 MW
IPCEI – €242 M

E-Methanol - 150 MW
Innovation Fund- €123 M

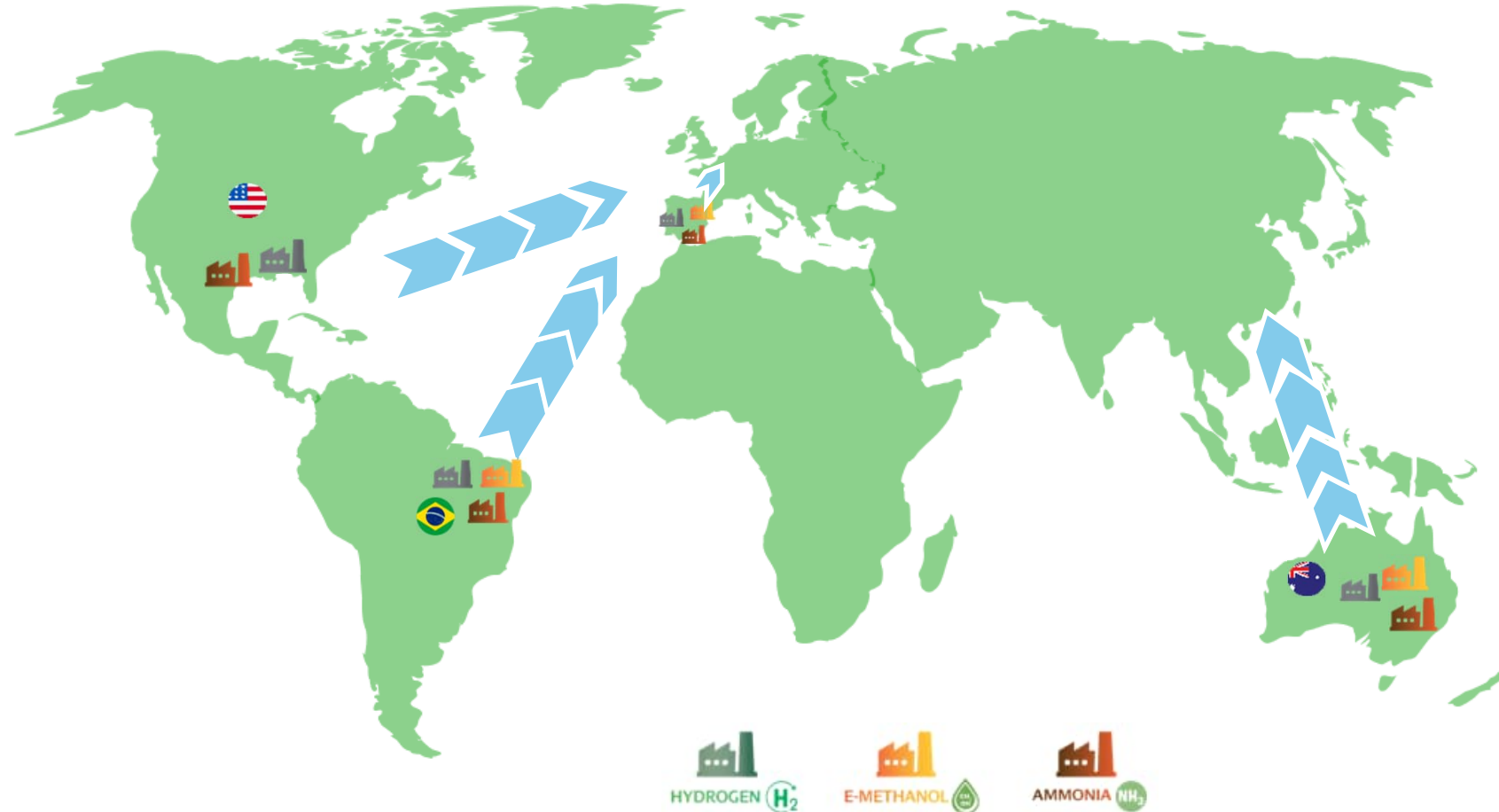
IBE/bp Phase II - 100 MW
Securing funding

Derivatives
under
development



Green Ammonia – 500 MW
Iberia, Australia, Brazil, US

E-Methanol – 400 MW
Iberia, Brazil



Gaining scale: from onsite projects to the World - green ammonia & e-methanol



Iberdrola's Project Delivery: Expertise & Capabilities

Historical Background

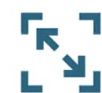
- ✓ 25 years of experience designing, engineering and constructing, worldwide
- ✓ +40 thermal power plants, 5 biomass plants, 4 nuclear plants, +10 hydroelectric plants....
- ✓ Both for Iberdrola Group and 3rd parties
- ✓ In-house Team +100 people
- ✓ Global capabilities



Green H2 Background



Countries:
Projects developed in Spain,
UK, Unites States and Brazil



Capacities:
11 Projects ≤ 25MW
5 Projects ≥ 100MW



3

OPERATIONAL
PLANTS: 24 MW
Engineering, design
& construction

1

UNDER
CONSTRUCTION: 25 MW
Engineering, design
& construction

9

GREEN H2 FEED
Electrolysers tech
assessment and
Engineering/Owner's
Engineering FEED

3

DERIVATIVES Pre-Feed
Engineering, design
& construction
2 Green Ammonia
and 1 eMethanol

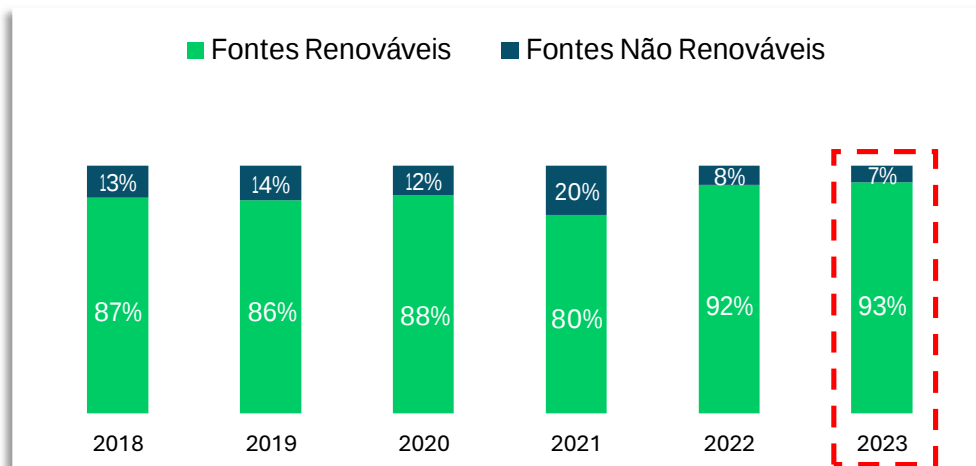


NEOENERGIA H2



Hydrogen in Brazil

93% of renewable generation participation in the Brazilian electricity matrix in 2023



Robust electrical sector

Renewable energy in abundance and at competitive prices

RFNBO compliance (EU RED III)

Legal and fiscal framework



- Approval of the Strategic Call n° 23 (P&D ANEEL)
- Law n° 14.990/24 (PHBC)
- Law n° 14.948/24 (Marco Legal do H2BC)
- Law n° 14.993/24 (Programa Combustível do Futuro)
- Law n° 15.042/24 (Mercado de Carbono)

Programa de Desenvolvimento do Hidrogênio de Baixa Emissão de Carbono – PHBC

R\$ 18,3 billions in tax incentives

Allows accumulation of benefits

It will also include exportable products

Enables the world's most competitive Green Hydrogen and derivatives...but WITH

Best possible framework



Under development in Brazil

- ✓ Dedicated green H2 team focused on developing local opportunities
- ✓ Renewable Energy portfolio 4GW



Hydro
2,200 MW



Onshore Wind
1,600 MW



Solar PV
150 MW



Production 2024
11.2 TWh/year

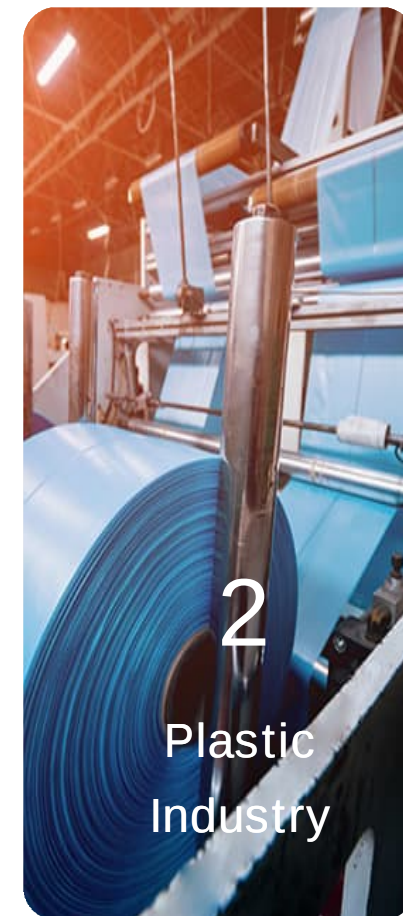


- ✓ PRE-FEED under development for green ammonia and e-methanol plants
- ✓ 4 Green H2 projects submitted to ANEEL Strategic Call

Working for FID with specific offtake partners

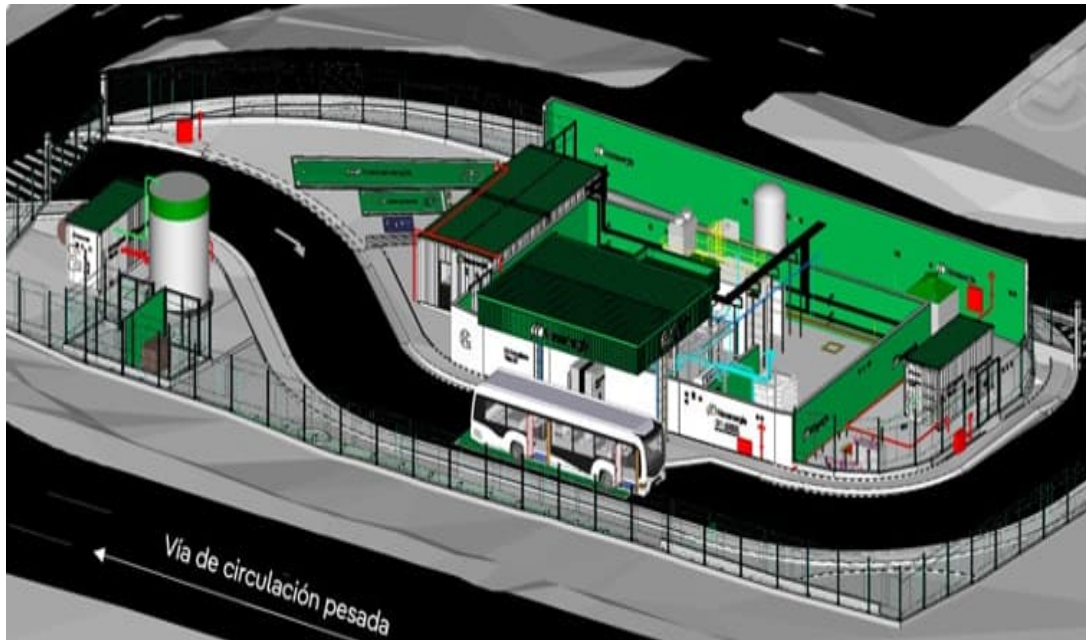
- ✓ Big-scale project under development
 - ✓ H2 hub for industry
 - ✓ Green NH3 and E-methanol for exportation

Advanced negotiations with
buyers willing to pay a premium for green
methanol in Europe

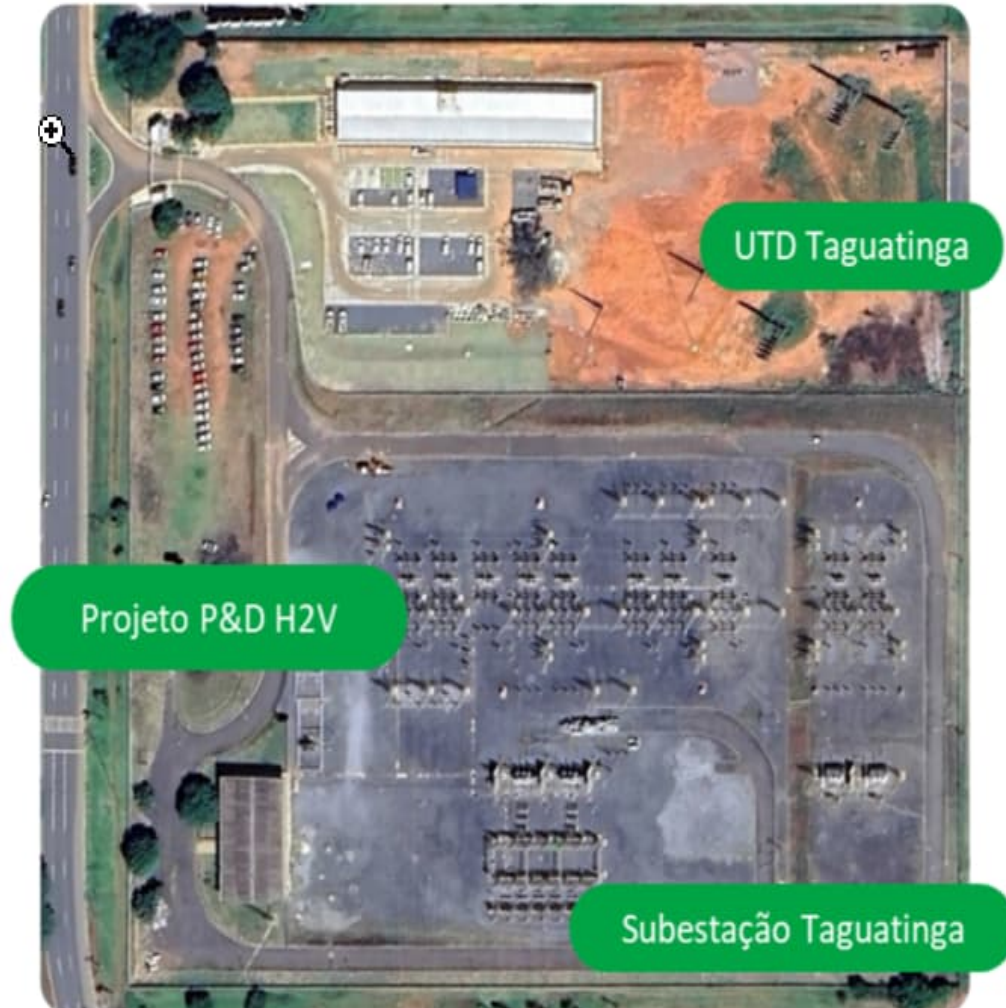


Reality - Green Hydrogen Refueling Station

- ✓ R&D project in Brasilia (ANEEL supported)
- ✓ First HRS capable of supplying at 2 different pressures in Brazil
- ✓ Located in the political center of Brazil
- ✓ Hub dedicated to the development of technology and dissemination of knowledge about green H₂
- ✓ About to start erection
- ✓ COD 2025

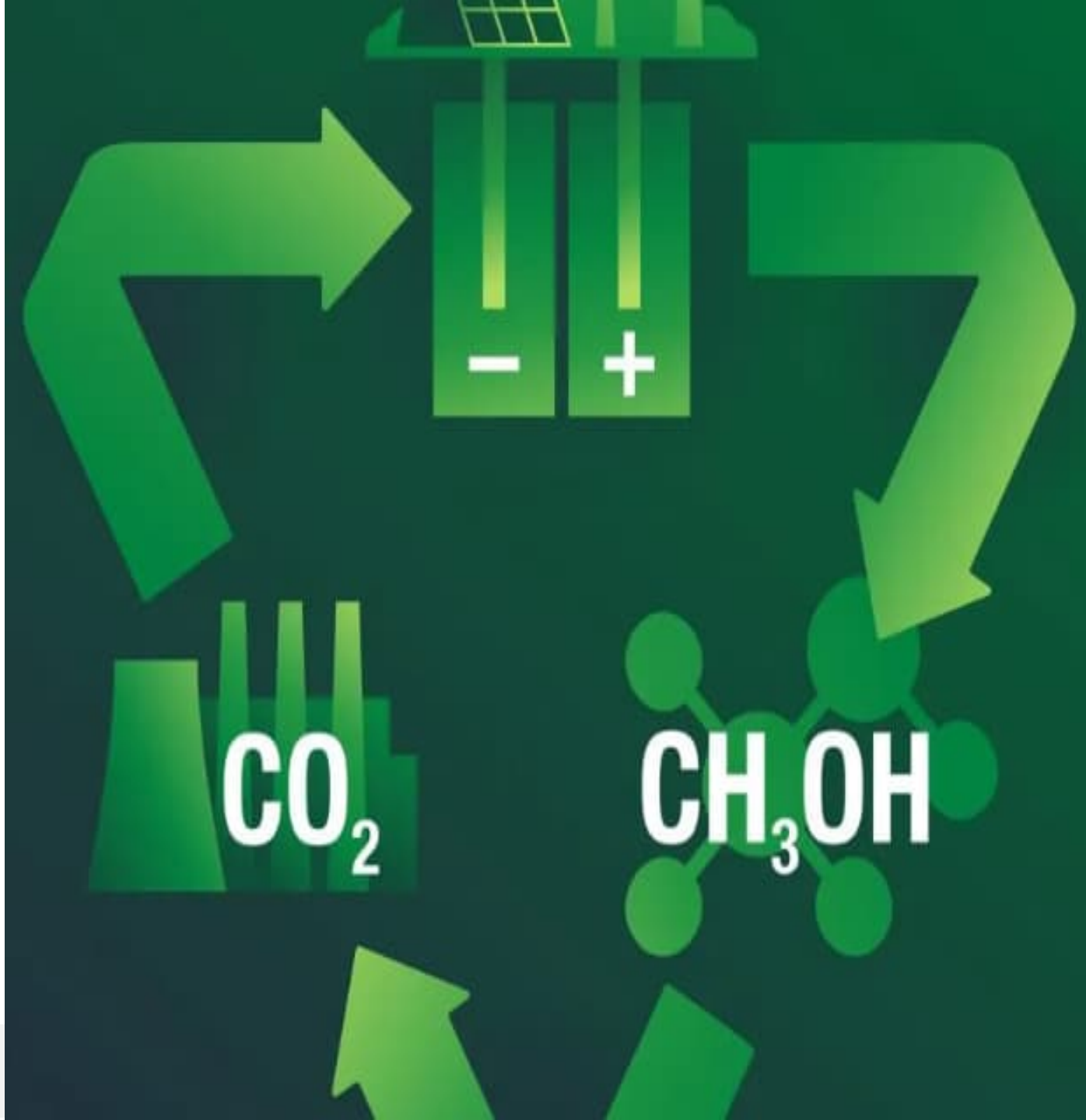


Localização – Taguatinga Pistão Norte

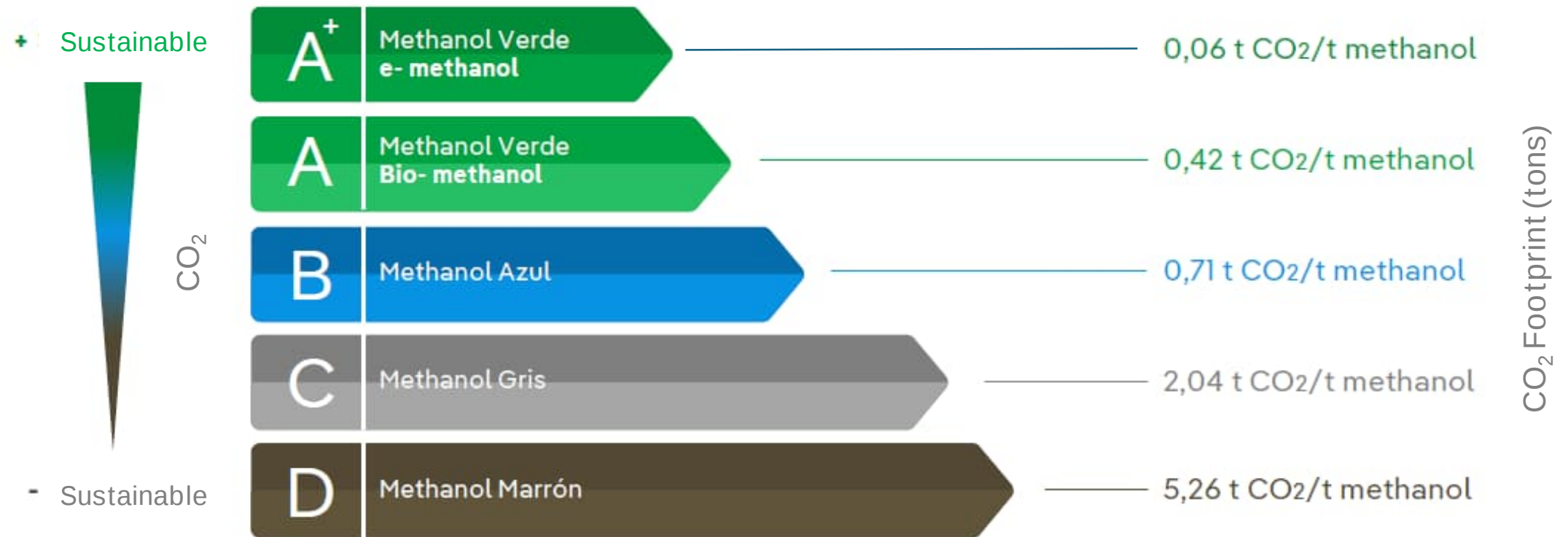




E-Methanol



e-Methanol: sustainable solution



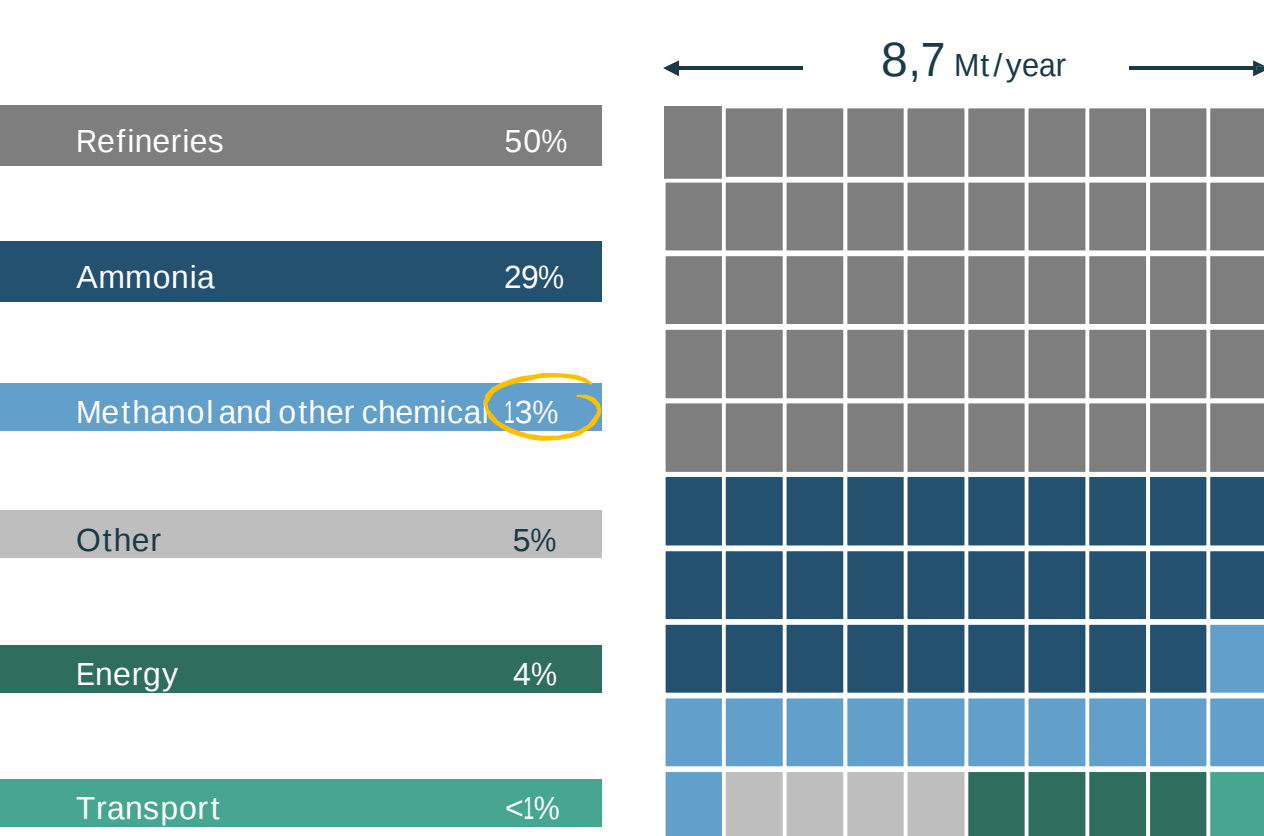
Source: IRENA Innovation Outlook: Renewable Methanol, 2021 / Massachusetts Institute of Technology

Learning on Methanol –Market subsectors in EU



Most of the expected demand in Europe for methanol will come from new sectors (maritime and aviation)

Total H₂ demand by subsector in Europa (2022)



Main hydrogen applications in refineries:

Using H₂ to reduce sulphur content in diesel fuels

Hydrocracking

Hydrotreating

Hydrogenation



Main hydrogen applications in ammonia:

Traditional applications

Refrigerant

Cleaning products

Fertilizers

H₂ carrier

Bunkering

Emerging applications



Main hydrogen applications in methanol:

Emerging applications

Chemical Precursors

Additives

Bunkering

eSAF

Traditional applications



Key Challenges for E-Methanol Projects



Commitment from offtakers with decarbonisation roadmap and “First Movers”



New price index needed, reflecting renewable additional value



Funding needed: higher and faster



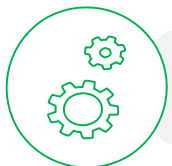
Firm Renewable Power



EU RED III Delegated Act Compliance: additionality & hourly correlation



Biogenic CO2 sourcing



Novel technology that needs to further develop



Whole value chain integration – Green Value

Same molecule, but completely **NEW PRODUCT** apart from bio/blue/gray

NEW promising **APPLICATIONS** that need its own benchmark to ensure sustainable long-term projects





e-Methanol: Green Meiga project in Spain



- Green H₂+CO₂ to produce e-methanol in Spain with COD in 2028
- Targeted **offtakers** in chemicals, bunkering and aviation
- Unique **integrated plant**, local Priority Business Initiative
- **Innovation lab**: different electrolyzers, advanced CO₂-capture system and DAC demonstration facility
- Biogenic CO₂ captured from biomass boilers

Electrolyzer

150 MW mix of technologies

E-Methanol Production

100,000 tons/year

Renewable Power

1.5 TWh/year for RFNBO hydrogen

Industrial land

Up to 15 Hectares secured

Funding supportInnovation Fund
(€123 Million awarded)

The most competitive e-methanol project in Iberia



Maritime Sector

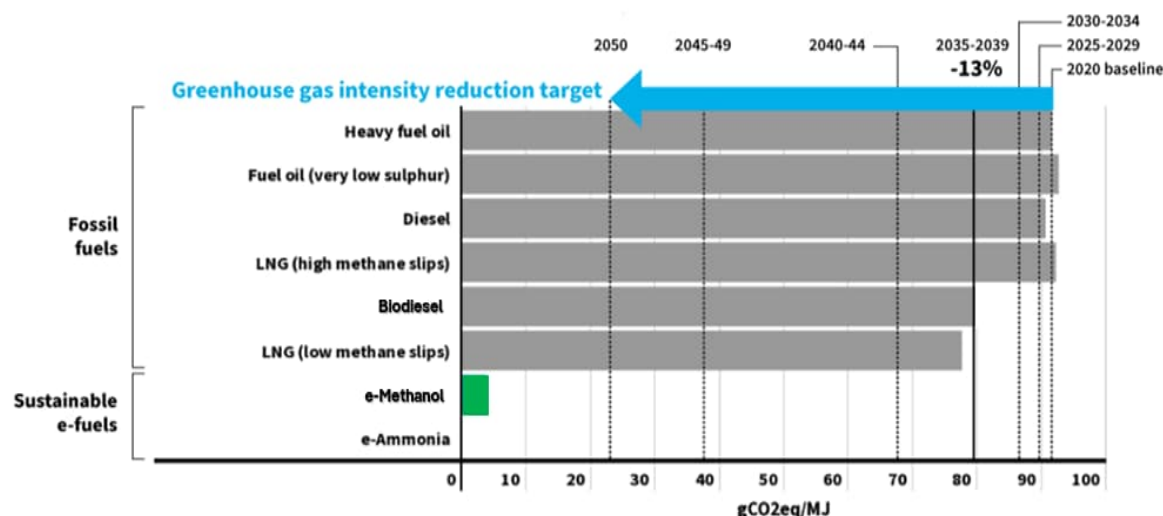


Market Introduction and Key Players

Marine Fuels global context

- ✓ Shipping sector is very dependent on heavy fuel oil (HFO), marine diesel oil (MDO) and very low sulphur oil (VLSFO)
- ✓ It represents ~3% of global GHG emissions (heavy transport accounts for 85%) and projections indicate further growth
- ✓ New regulation launched in 2023 for alternative fuels adoption brings opportunities for e-methanol and green ammonia (Fuel EU Maritime)

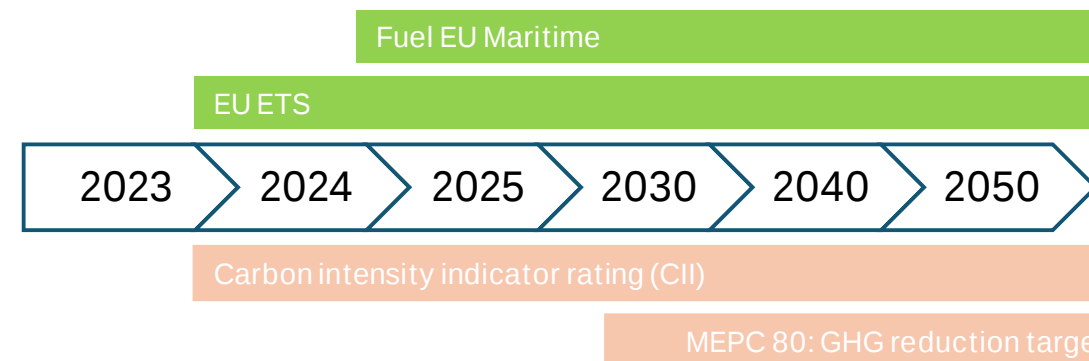
Overview of GHG intensity of each fuel – Provisional Calculations



- ✓ Alternative clean fuels to comply with regulation include biofuels, renewable diesel (limited feedstock), bio/e-methanol and green/blue ammonia

Complex regulatory landscape

- European level regulation



- IMO global level regulation
- RED III 29% RES in transport- depend on transposition
 - Multiplier x1,5 e-methanol (RES+M&A sector)
 - Multiplier x1,2 bio-methanol (only some, no from crops)

Key Players

	MAERSK	740 vessels / 4,287 million TEU capacity
	MSC	717 vessels / 4,275 million TEU capacity
	CMA CGM	597 vessels / 3,300 million TEU capacity
	COSCO SHIPPING	467 vessels / 2,800 million TEU capacity
	Hapag-Lloyd	249 vessels / 1,700 million TEU capacity

Regulation-IMO, ETS and FuelEU Maritime

International Maritime Organisation (IMO)

- 2023 IMO Strategy on Reduction of GHG Emissions from Ships: indicative check-points: 20% by 2030, 70% by 2040 and net-zero by 2050
- All ships need to measure carbon intensity (but no mandates, neither penalties)
- By 2025, emissions pricing mechanism to be adopted (into force in 2027)

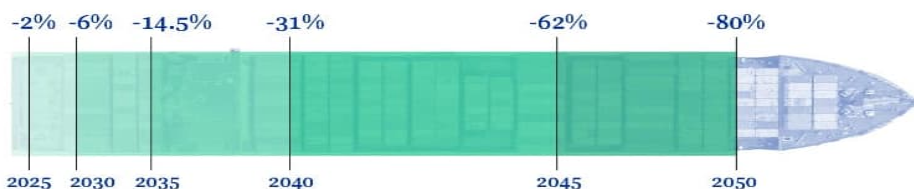
European Trading Scheme (EU ETS)

- Since Jan'24, EU ETS extended to cover CO2 emissions from large ships (>5,000 gross tones) entering EU ports, regardless of the flag they fly
- No free allocation → ship owners must acquire emission allowances (100% on routes within EU, 50% on routes in/ out EU)
- Targets: 40% of emissions in 2024, 70% in 2025 and 100% from 2026

FuelEU Maritime

- Target: increase share of renewable and low-carbon fuels in the fuel mix
- Reduction of GHG intensity of energy (CO2 equivalent/unit).
 - ✓ Ships above 5,000 gross tones
 - ✓ 100% on voyages within EU and 50% on voyages in/ out EU
- Progressive GHG reduction: from 2% in 2025 to 80% by 2050

Annual average carbon intensity reduction compared to the average in 2020



- Allows pooling among fleet and selling “credits”
- From 2030: mandate for onshore power supply at EU ports

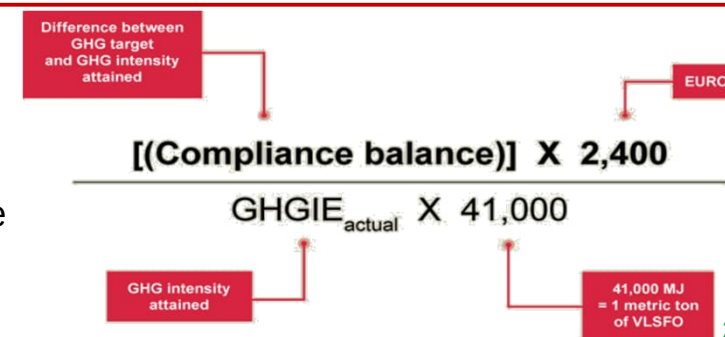


RFNBO Incentives

- ✓ RFNBO Multiplier of 2 in terms of energy (2025-2034)
- ✓ Subtarget 2% of RFNBO could be applicable from 2034 (if RFNBO share in maritime fuel mix < 1% by 2031)
- ✓ Non-compliance cost could be higher than e-methanol, but there are other cheaper alternatives (e.g. biofuels)

Penalties for non-compliance

- ✓ Obligated parties: shipowner / operator
- ✓ Potential denial of entry into the EU ports



Demand for Green Fuels

Growth of alternative fuel vessels

- Vessel operators will need to comply with emissions reduction targets to avoid paying penalties.
- Fuels such as LNG, LPG or biofuels will be able to meet the target until 2040

Potential niche market

Some end users like car manufactures and consumer goods are requesting to have free emission shipping for their products



Global Marine fuel demand by fuel type

In **2040**, maritime transport will require **12 Mt of green H2** for use as synthetic fuels: 50% ammonia (**~45 Mt NH3 & >675 TWh RE**) / 20% methanol (**~20 Mt CH3OH & > 240 TWh RE**)⁽¹⁾

- ✓ **Ammonia** is more cost competitive but issues with toxicity, engines and bunkering terminal's availability
- ✓ **Methanol** is more technology-ready and can be stored in any port but issues with biogenic CO2 scalability



⁽¹⁾2040 estimations on ammonia, methanol and renewable power based on Iberdrola's projects

Deals Announced

Leading shipping companies are adopting methanol as a marine fuel

Shipping company	Sector	Net zero target	Methanol vessels	Timeline
 MAERSK	Container	2040	42	2023-27
 EVERGREEN	Container	2050	24	2026-27
 CMA CGM	Container Tanker	2050	24	2025-27
 COSCO SHIPPING	Container Bulk carrier	2060	22	2026-28
 ONE OCEAN NETWORK EXPRESS	Container	2050	20	2025-26
 Wallenius Wilhelmsen	Container	2040	14	2026-28
 DFDS	Container Bulk carrier	2050	10	2024-25

Growth of methanol

As of January 2025, Methanol Institute's database tracks 220 projects globally, with anticipated capacity of 44 Mt by 2030: 18.6 Mt e-methanol, 15.4 Mt biomethanol, 10.1 Mt blue methanol

- *OCI expects annual increase in demand of ~7 Mt of methanol between 2024-2028 to fuel these new vessels. Equivalent to >105 TWh of renewable energy.*
- *Maersk will need 5Mt of green methanol/ammonia by 2030 and 20Mt by 2040 but shows very limited willingness to pay...*



An average vessel could consume between 20-50kt of methanol per year intra EU
Approx. 100kt consumption on a route from Brazil to Europe

Opportunities - ZEMBA



The Zero Emissions Buyer Alliance is a buyers' group within the maritime sector with the mission to accelerate deployment of zero-emission shipping solutions, enable economies of scale for freight buyers and suppliers, and help freight buyers maximize emissions reduction potential

ZEMBA aggregates cargo shipping demand from 40 companies that want to decarbonize their transport: Amazon, Bauhaus, Electrolux, IKEA, Levi Strauss & Co., Meta, Mondelēz, New Balance, Nike, Pernod Ricard, Philips, Schneider Electric, SEKO...

1st tender launched in 2024:

- 2 years contract from 2025 to collectively reduce 82,000 metric tonnes of CO₂ with a book and claim system.
- Awarded to Hapag-Lloyd
- Gasum will deliver waste-based liquefied biomethane -bio-LNG- to Hapag-Lloyd's container vessels during the tender period

2nd tender launched in 2025:

- Volume 180kt e-fuels over 5 years (~36kt/year)
- COD from 2027 with 3-5 years contract
- Bid period January-March 2025
- Additionality needed: carriers cannot use the e-fuel used for the tender to comply with FuelEU Maritime or EU ETS

Summary-Maritime Sector

Introduction

- International shipping trade accounts for 90% of total volume of goods and 60% of its total value (approx 112.000 fleets)
- Difficult business to regulate, standardize and modernize
- Several operators with different sizes and vessel types/uses, operating diverse routes
- Cyclical and volatile industry, heavily capital intensive with high inherent risks
- Affected by global economy, speculation from some stakeholders, and geopolitics

Market

- Conventional bunker fuel market of ~275Mt in 2024, with 50 Mt in Europe
- In the goods trade, the top 10 container lines control 85% of the market
- Low-willingness to pay due to reduced operating margins and high impact of fuel costs
- Cheapest mode of transport (0,3p to 2,5€ cost of coffe)
- **Niche opportunities, just a few companies asking for clean transportation for their high-value products**

Regulation

- Complex regulatory framework
- FuelEU Maritime sets requirement for reduction of GHG intensity of energy
- Non-compliance means financial penalty and potential denial of entry to the EU
- But confusing landscape of fuels with several factors related to emissions accounting
- Free ETS allocation ends in 2026
- Guidelines from IMO (but no mandates) to meet the net zero ambition by 2050

e-methanol demand



+360 dual-fuel methanol vessels operational and ordered
 First e-methanol bunker contracts to be signed this year
 Average consumption 40ktpa MeOH on EU routes
 ZEMBA tender aggregating e-fuel demand 180ktp from 2027
 Low willingness to pay but large volumes before 2030

Under the current standards, a mix of LNG and biofuels could be the most competitive solution until 2036 and, then blue NH3 dual-ships until 2044 and always green NH3

In order to incentivize e-fuels a x2 multiplier has been proposed
 Even with this, e-fuels could not be competitive before 2041

The multiplier would have to be set at higher values





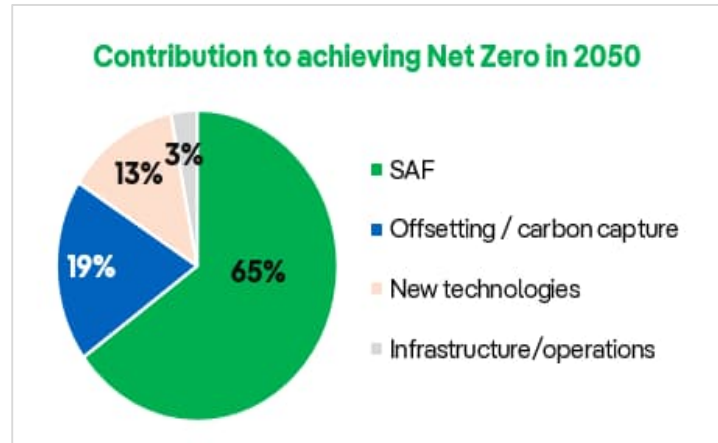
Aviation Sector



Market Introduction and Key Players

Introduction

- Aviation represents ~**2.5%** of global **GHG** emissions (expected to grow)
- Conventional jet market reached **325 Mt in 2023**
- Sector faces **high pressure** from media and passengers
- SAF identified as the key **decarbonization solution**



What is SAF?

SAF are **alternative fuels** produced from different **sustainable feedstocks** and routes that can be blended into kerosene (up to 100% in the future).

Two types according to feedstocks:

- ✓ **SAF from residues:** feedstock used oils, fats, biomass, waste
- ✓ **eSAF:** produced via FT-to-jet (H₂+CO) and methanol-to-jet (route under certification but ready before 2030)

SAF Market Perspectives

- SAF market reached 0.5Mt in 2023 (0.15% of total aviation fuel) - expected to reach 1.5Mt in 2024
- Governments setting policies to encourage the uptake of SAF
- Challenges: availability of feedstocks + competition other applications + cost of SAF production (3-4 times fossil kerosene)
- Regulation Targets by 2030:
 - Europe: 6% SAF (4 Mt) + 1.2% eSAF(0.8Mt)
 - UK: 10% SAF (1.2 Mt) + 0.5% eSAF (0.06Mt)

Opportunity to trigger investments in H2 and e-methanol

- | | | |
|------------------------|--------------------|--|
| ✓ Regulatory Framework | ✓ Severe Penalties | ✓ Incentives & willingness to pay ^(*) |
|------------------------|--------------------|--|

Key players

O&G majors



New SAF producers



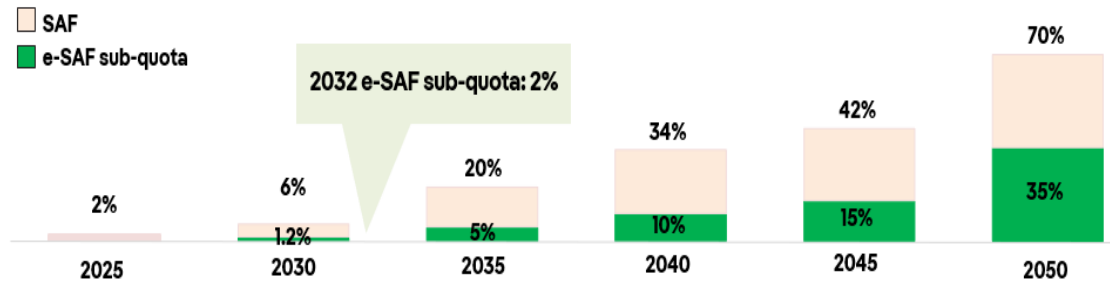
(*) Impact of 1.2% eSAF of 2-5€/ticket on a short flight and 20-30€ on a long flight

Regulation-ReFuelEU Aviation

Objectives: foster the ramp-up of SAF deployment in the EU & guarantee a harmonized and level playing field in aviation

EU binding SAF & e-SAF quotas

- Blending mandate from 2025 with 2% SAF (up to 70% by 2050)
 - By 2030, this would mean **2.8Mt of SAF demand**
- From 2030, 1.2% eSAF sub-mandate:
 - This would mean 0.8Mt eSAF (which relates to > **1.8 M tons of e-methanol** and >**27 TWh renewable energy**)
 - And >3,4 Mt eSAF by 2035 (>**7.5 Mt of e-methanol** and >**112 TWh renewable energy**)⁽¹⁾



Scope and Stakeholders' obligations



Fuel suppliers → gradually blend SAF with kerosene

Union airports → facilitate the access to SAF

Airlines → uplift 90% of fuel required at Union airports

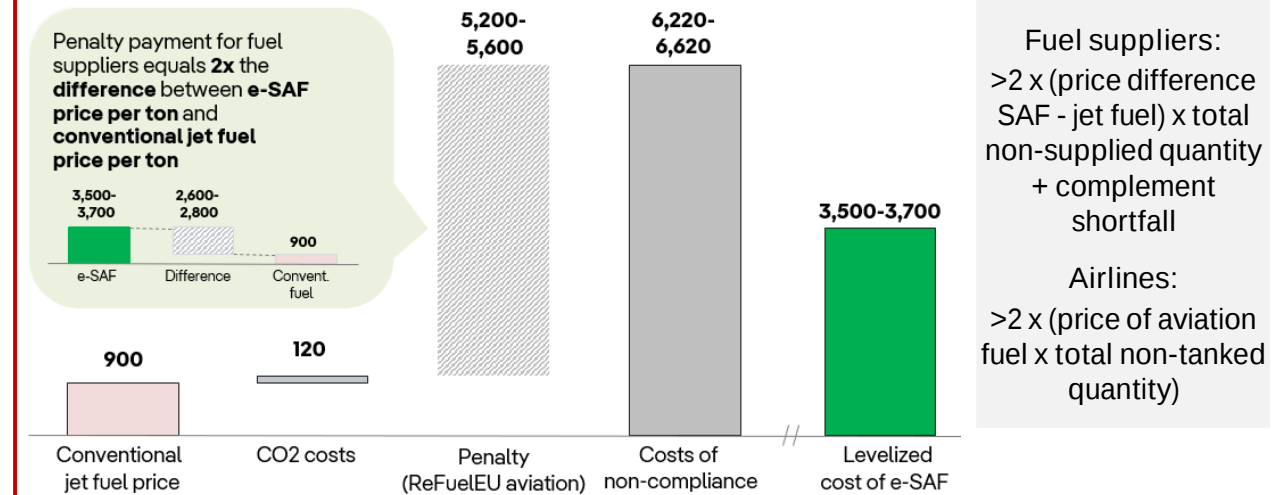
Strict unavoidable penalties



- ✓ Buy-out or trading of certificates are NOT allowed
- ✓ Shortfall volumes to be compensated in subsequent years
- ✓ Proposed penalty > estimated e-SAF prices
- ✓ Irrespective of e-SAF price, **compliance is always beneficial**

Example of penalty for fuel supplies [2030e, in € / t]

Source: Smartenergy based on Eurocontrol, IEA, European Commission



Incentives



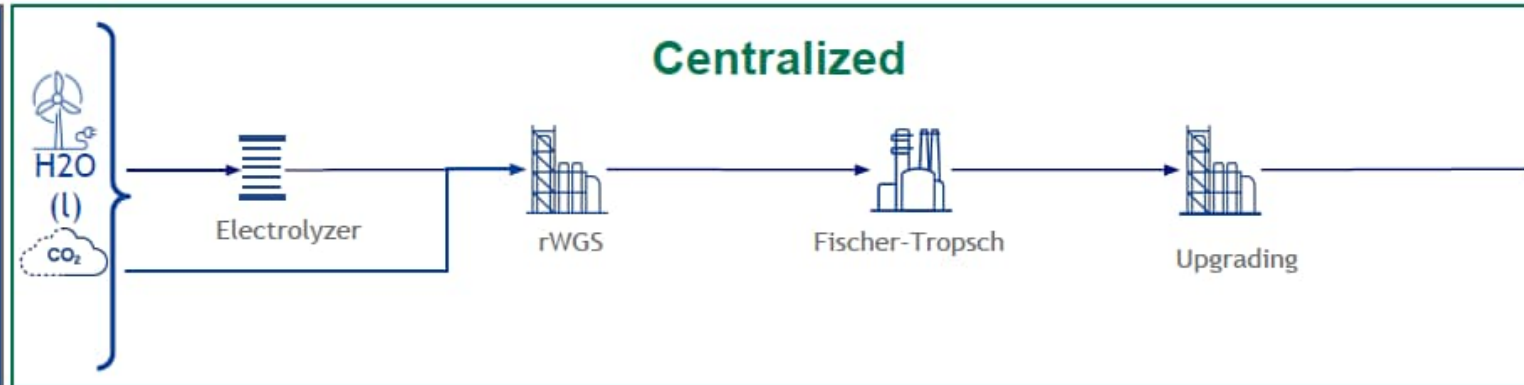
- ✓ Until 2030, 20M free allowances (EU ETS) to **cover price difference** between jet fuel and SAF (70% reimbursement for SAF, 95% for eSAF)
- ✓ SAF supplied under ReFuelEU also counts towards MS targets under REDIII (with a 1.2x multiplier for SAF and **1.5x multiplier for RFNBO**)

⁽¹⁾2030 and 2035 estimations on methanol and renewable power based on Iberdrola's projects

eSAF routes

1

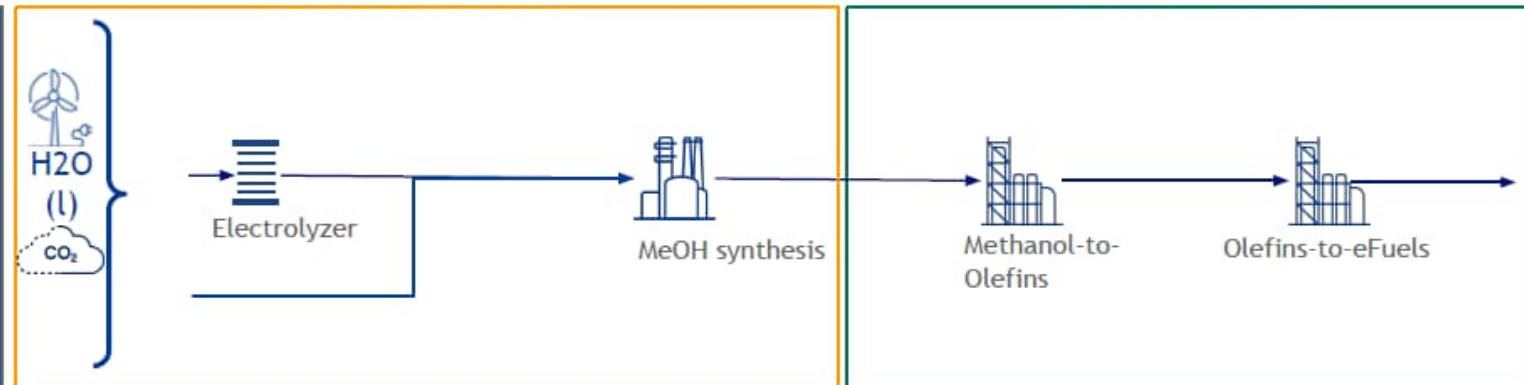
Fischer-Tropsch route



- ✓ Certified
- ✓ Baseload run
- Min size: 200 MW EZ

2

Methanol-to-JET route



- Ongoing Certification
- ✓ Economies of scale
 - ✓ MeOH demand aggregation
 - ✓ More flexibility





Conclusions

Analysis of sectors' attractiveness



Maritime Sector

-  • Clear, harmonised legal framework (*some pending details*)
- RFNBO multiplier (and potential submandate)
- No buy out possible
- Targets from major shipping companies
- Incentives: H2 Bank dedicated stream from 2024
- Large volumes needed
-  • High-price sensitive sector
- Replacement with LNG valid till 2040
- Competition from other fuels / uses
- Retrofitting/new engines required
- Competition from China's methanol projects



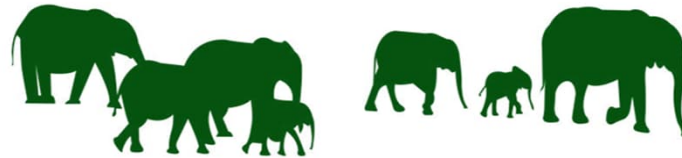
Aviation Sector

-  • Clear, harmonised legal framework
- Specific targets + mandatory eSAF sub-mandate
- Severe penalties. No buy out possible
- Incentives: 20M free allowances till 2030
- High pressure on airlines (exposure +sustainability targets) and passengers' willingness to pay
- Large volumes needed
-  • Timings: mandates' impact only after 2030
- 7 years needed to build a FOAK SAF plant
- Methanol-2-jet route under certification process
- High eSAF costs

H2&Derivatives partnerships in Brasil

ONLY VIA COLLABORATION BETWEEN
PRIVATE COMPANIES AND
ADMINISTRATION

If you want to go fast, go alone. If you want to go
far, go together



After building reality in H2, ready for large-scale projects



Thank you!
Confidential

