eni next DAY 2025

Fueling the Next Generation of Energy Platforms

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Macro and Outlook

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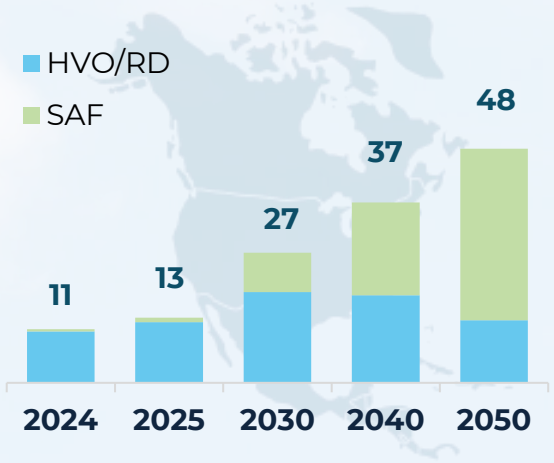
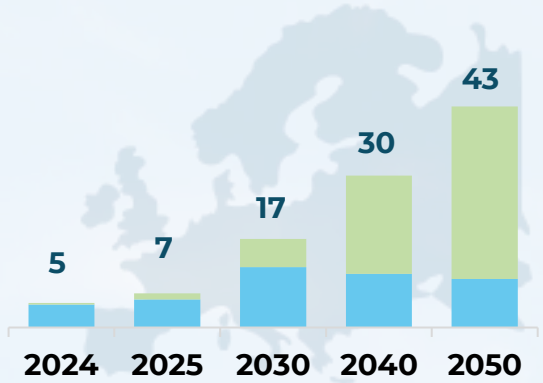
Macro: view of HVO/RD and SAF market

WORLD RENEWABLE DIESEL/SAF DEMAND | Mton/y

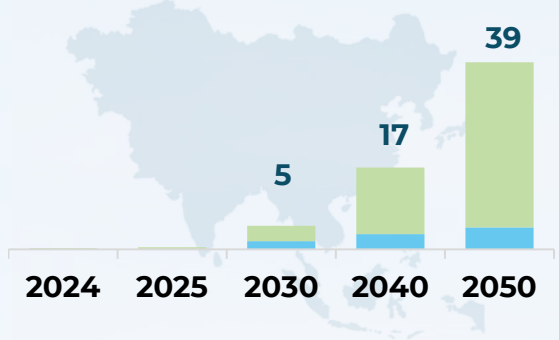
N. America



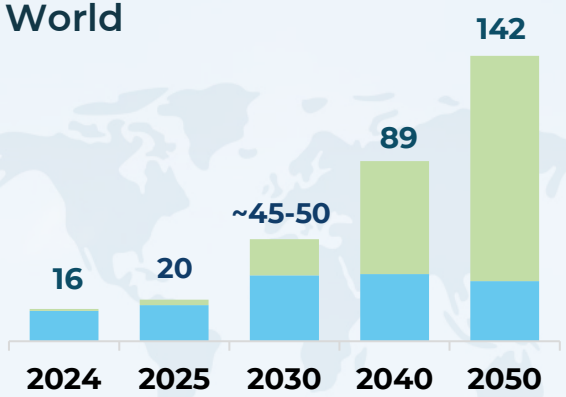
Europe



Asia-Pacific



World



Source: Enilive elaboration on third parties data

KEY REGULATORY UPDATE

RED III Directive
doubled 2030 target
to 29% renewable fuels in transport

ReFuelEU Aviation
2% SAF from 2025, mostly from 2H
6% SAF in 2030

FuelEU Maritime
-2% GHG intensity in 2025
-6% GHG intensity in 2030

US
New RVO proposal for 2026-2027

new CARB LCFS targets in 2025-30 and extension to 2045 to be enforced in 2H25

ASIA
SAF targets at 2030
proposed in 9 countries

Japan recently approved a new 10% SAF mandate starting from 2030

VOLUNTARY DEMAND
10% SAF target by 2030
from leading international airlines
and 30% from cargo companies

IMO
proposed new GHG targets for ships >5kGT

-4%/-17% in 2028
-8%/-21% in 2030

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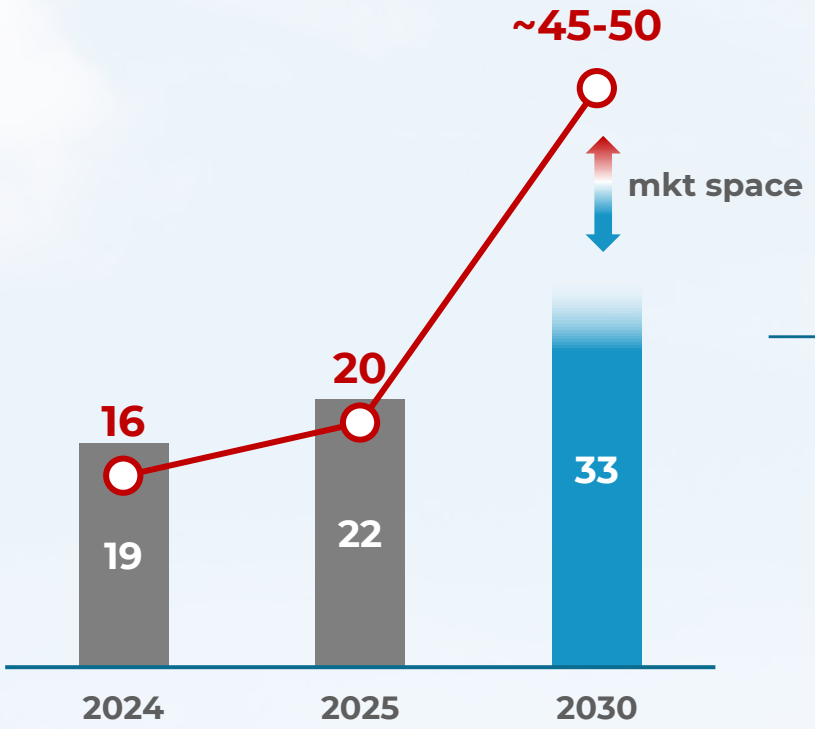
Robust 2030 macro scenario led by HEFA

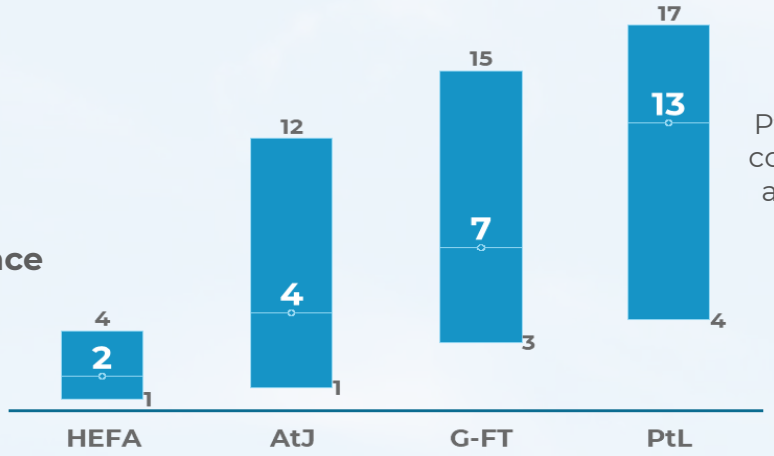
WORLD RENEWABLE DIESEL/SAF 2024-30

Supply Vs Demand (Mton)*



CAPEX AT 2030 by tech

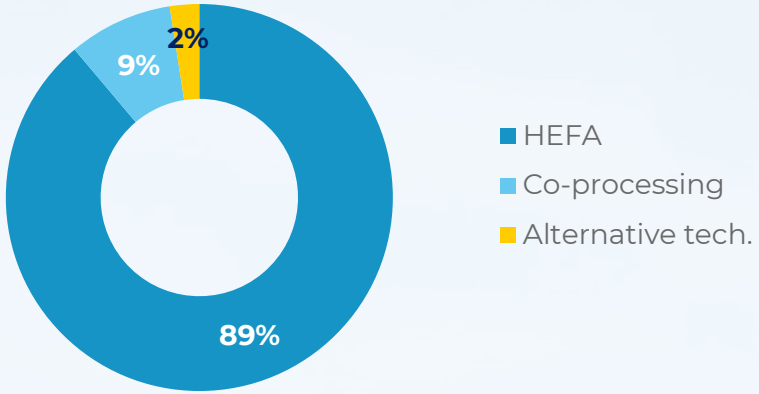
$ .000/ton of installed capacity**



PtL may be competitive after 2040

HEFA as leader tech in 2030 | % capacity

operational, under construction and main announced initiatives*



ALTERNATIVE TECHNOLOGIES

G-FT Gasification/ Fischer-Tropsch (FT)

Syngas from feedstocks, then FT synthesis to obtain liquid fuels

Feedstocks: OFMSW, agri-residues, forestry residues

PTL Power-to-Liquid (or e-fuels)

Synthesis starting from captured CO_2 and green H_2

Feedstocks: captured CO_2 and renewable electricity

ATJ Alcohol-to-Jet

Conversion of bio-alcohols into SAF

Feedstocks: bio-ethanol or iso-buthanol

Sources:
* Enilive elaboration on third parties data
** World Economic Forum - Financing Sustainable Aviation Fuels: Case Studies and Implications for Investment

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Update on biorefining

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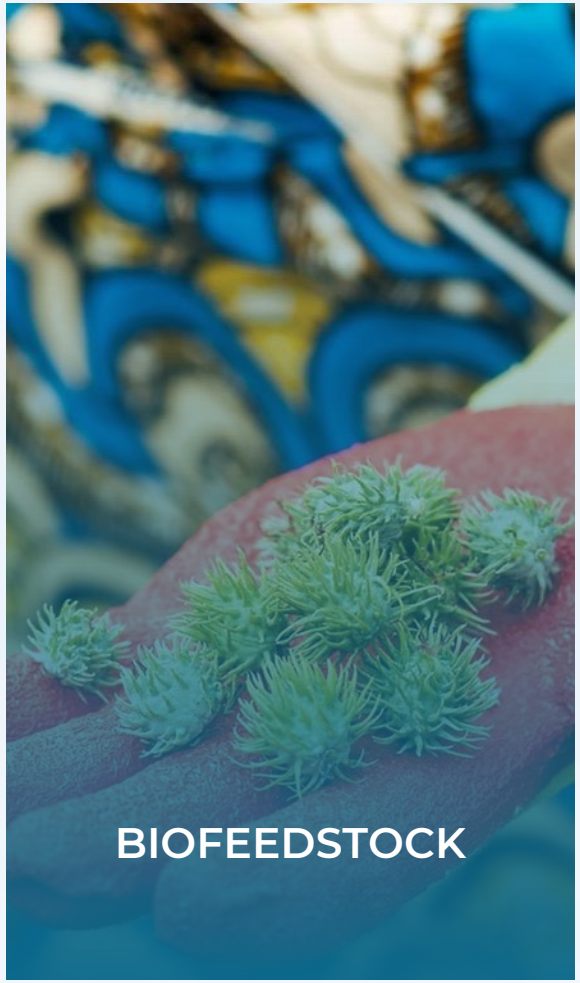
Enhancing value across biorefining value chain processes



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Wide portfolio of raw materials

Wide range of waste and by-products from oil and fats processing

Eni biorefineries Palm Oil free

Significant future role of waste & residue, rotational crops and crops cultivated in marginal lands

In house R&D competence center fully equipped for testing of new feedstocks and for process optimization and development

UNRIVALLED R&D

Unique bio crude assay database with more than 400 characterized feedstocks

* Avarage Enilive GHG saving aggregated value (Venice + Gela). Based on quantities reported in the Mass Balances in the year 2024, as defined in the REDII framework and Voluntary Schemes

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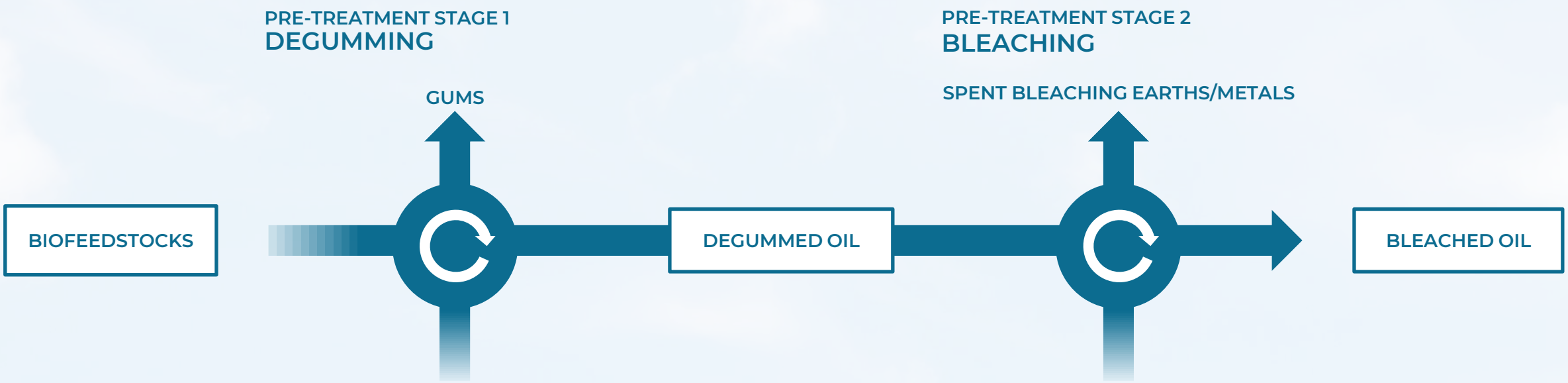
Biomass Pre-Treatment Processes



Removes gums from crude vegetable oils and fats by the addition of water and acid

Removes catalyst poisons like metals & residual phospholipid not removed by degumming section by acid addition & adsorption with bleaching earths

Developing advanced pre-treament to enable wider and more complex feedstock pool

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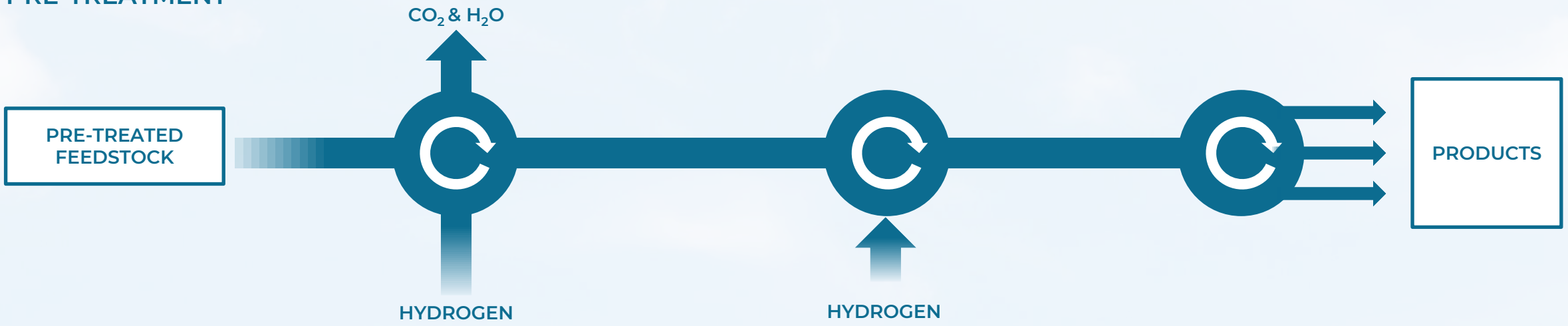
Ecofining™ process

PREVIOUS STEP
CLEAN-UP PRE-TREATMENT

ECOFINING STAGE 1
HYDRODEOXYGENATION

ECOFINING STAGE 2
ISOMERIZATION

END STEP
FRACTIONATION



Hydrodeoxygenation reaction saturates the double bonds and removes oxygen as water/carbon dioxide, producing Biopropane and linear paraffins having a high cetane number but poor cold flow properties.

Hydroisomerization reaction is an effective approach that transforms linear paraffins into branched ones or isoparaffins, thereby improving cold flow properties.

Lastly, a dedicated separation section to split reaction products into biofuel fractions:

HVO LPG, HVO Naphtha, HVO Jet & HVO Diesel

REMOVE OXYGEN (H_2O AND CO_2)
LINEAR PARAFFINS MAIN PRODUCTS
BIOPROPANE PRODUCT

ISOMERIZATION IMPROVES PRODUCTS COLD PROPERTIES

FINAL STAGE TO SPLIT PRODUCTS

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Biorefinery products - a premium, sustainable portfolio

BIOFUELS: HVO LPG | HVO NAPHTHA | HVO DIESEL **BIOJET**

HVOLUTION: CHARACTERISTICS OF ENI'S HVO[1] MADE FROM OUR ECOFINING TECHNOLOGY

100% of renewable component

a mixture of stable non-hygroscopic paraffins and free of aromatics & polyaromatics (compounds with environmental impact)

Mixable with fossil diesel fuel in till 100%

Instead, max 7% allowed by EU standards for the traditional biodiesel (FAME[2])

Usable as a drop-in fuel

as it is compatible with existing engines & infrastructure (no extra investments required)

Excellent engine qualities of the product

due to the high cetane number & the absence of aromatics

BIOFUELS IN COMPARISON

HVO	FAME
High stability & total absence of deposits O_2 replaced by H_2	**High fouling power** formation of deposits due to presence of O_2
High energy content (similar to fossil fuel)	**Low energy content**
Higher cetane number & lower density vs fossil fuel	**Low cetane number**
Usable in purity with no mixing limits	**Usable only if mixed** (7% blending wall)
Excellent cold weather performance (cloud point up to -30°C)	**Cold performance depending on raw materials used** (cloud point from -5 to +15°C)
Excellent oxidation stability	**Poor oxidation stability**
0% polyaromatics	
Sulphur ppm <1	

[1] Hydrotreated Vegetable Oil
[2] Fatty Acid Methyl Esters

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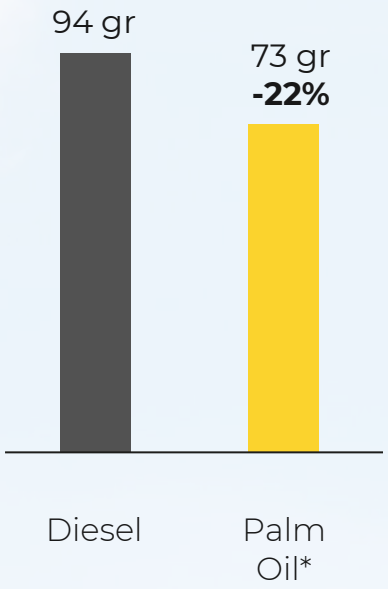
Biofuels carbon intensity - Targeting lowest emissions

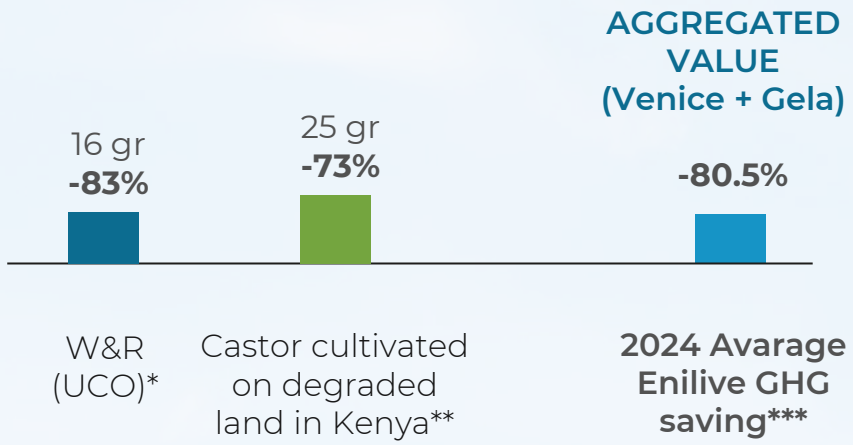
Carbon Intensity & GHG Saving

MARKET BENCHMARK

CO_{2eq} / MJ HVO



ENILIVE DISTINGUISHING MODEL



AGGREGATED VALUE (Venice + Gela)

GHG SAVING

Life Cycle Analysis according to 2009/28/EC Directive - i.e. RED II, Renewable Energy Directive

CONTRIBUTION TO LCA CALCULATION

* Standard GHG saving values for HVO defined by EU RED II Directive
** HVO reference carbon saving certified by ISCC EU
*** Based on quantities reported in the Mass Balances in the year 2024, as defined in the REDII framework and Voluntary Schemes

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Developing technology platforms to drive higher returns

SCALE EXPANSION

Increase biorefining capacity to unlock economies of scale across larger throughput

Increase throughput via targeted debottlenecking

Global footprint on three continents of presence captures local market opportunities related to feedstocks and products

PRE-TREATMENT ENHANCEMENT

Processing more challenging feedstocks adds flexibility

Feedstock flexibility captures spot opportunities of lower input costs in dynamic markets

PROCESS OPTIMIZATION

Synergies across operations for longer and optimized asset lifecycle

Maximize utilization rates for higher asset productivity

Costs management (operations, maintenance, logistics, overhead)

PREMIUM PRODUCTS & IMPROVEMENTS

Add higher-value products to portfolio for premium markets

Increase product specs supporting increased offer and margins

Retaining optionality and products flexibility to shift to different product streams

R&D AND INNOVATION-LED APPROACH

Strategic enablers for increased profitability

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Existing asset improvements & enhancements

VENEZIA | From 400 to 650 kton/y

2023
New degumming

2025
Start-up Steam Reformer

2026
Biojet Plant

2027
Increased capacity

GELA | 700 kton/y

2019-21
Start-up Ecofining & BTU

2024
Start-up Biojet plant

2025
Start-up Degumming

2027
SBER* plant

CHALMETTE | 550 kton/y (Enilive capacity)

2023
Start-up main process and PTU

2028+
LPG/Naphtha recovery; Biojet

* SBER = Spent Bleaching Earth Regeneration

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Cross-coordination for optimization initiatives

Identification and mapping of optimization initiatives

Continuous monitoring plan and economic benefit analysis

Proposals for new optimization initiatives (e.g., new investment proposals, business developments)

OPERATIONAL EXCELLENCE PROGRAM

REVENUES/MARGINS

- Increased plant reliability
- Product quality improvement
- Logistic optimizations

VARIABLE COSTS

- Reducing of utility costs
- Reducing chemicals costs
- Reducing disposal costs

FIXED COSTS

- Right-sizing
- Cost reduction
- Services optimization

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Near-future development projects

LIVORNO

FID taken
in Jan 2024

Start-up
in 2026

~500 kton
total capacity

100% Enilive

PENGERANG

FID taken
in July 2024
& EPC awarded

Start-up
in 2028

650 kton
total capacity

JV with
Petronas &
Euglena

DAESAN/ SEOSAN

FID taken
in July 2024
& EPC awarded

Start-up
in 2027

400 kton
total capacity

JV with
LG Chem

SANNAZZARO

FID expected
in 2025

Start-up in
December 2027

550 kton
total capacity

100% Enilive

PRIOLO

FID expected
in 2025

Start-up in
December 2028

500 kton
total capacity

ECOFINING TECHNOLOGY & ADVANCED PRETREATMENT

PROCESS OPTIMIZATION

New biorefineries will be developed on experience gained in other Enilive projects

PREMIUM PRODUCTS & IMPROVEMENTS

SAF optionality and products flexibility available for new biorefineries

Concluding remarks

PIONEERING AND CONTINUOUSLY IMPROVING TECHNOLOGY TO REINFORCE COMPETITIVE ADVANTAGE

ADAPTING PROCESSES TO MARKET CHALLENGES AND OPPORTUNITIES

TRIPLING CAPACITY WITH WORLD-CLASS NEW PROJECTS AND ENHANCING EXISTING ASSETS

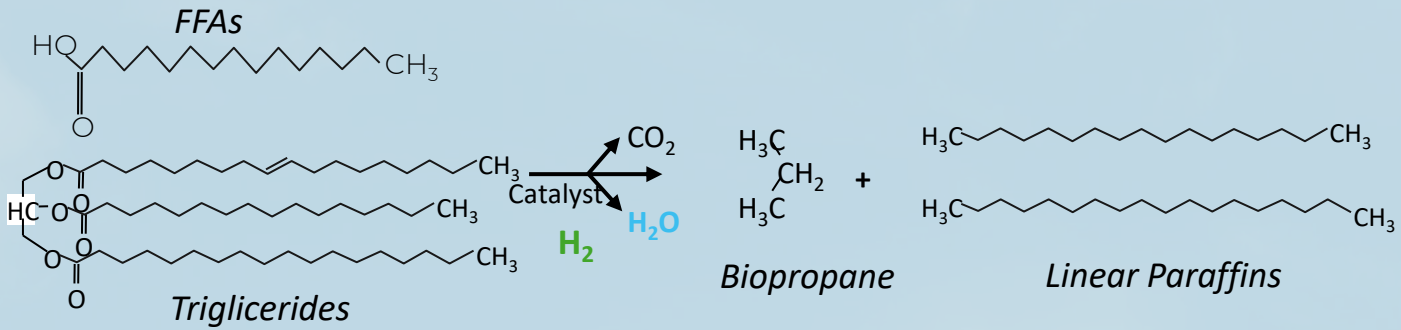
DELIVERING ON RETURNS TARGETS FOCUSING ON ASSET COST MANAGEMENT AND PRODUCT QUALITY

Backup


Tour d'Europe
DRIVING
DECARBONISATION
WITH RENEWABLE FUELS

Fundamentals of Chemical reactions in Ecofining

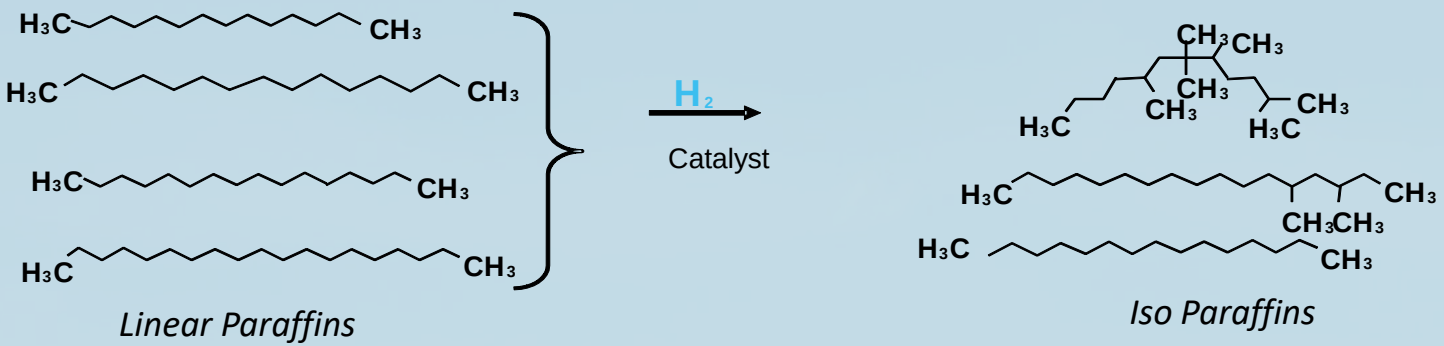
Ecofining stage 1- Hydrotreating Stage: deoxygenation and decarboxylation



Vegetable oils mainly consist of triglycerides with typically 1-2% free fatty acid content

In the stage 1 Deoxygenation and Decarboxylation reactions of vegetable oil involves, producing linear paraffins but also gaseous byproducts including biopropane (C3H8), carbon dioxide (CO2), in varying degrees depending on the source feedstock

Ecofining stage 2- Isomerization/ Cracking Stage



In the stage 2 cracks the linear paraffins to smaller, highly branched molecules

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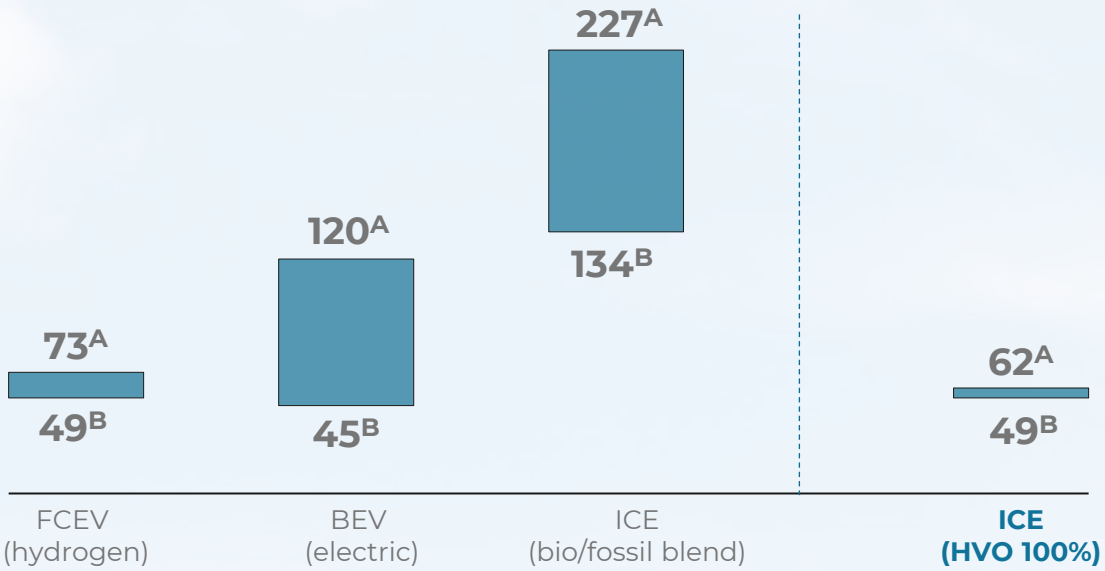
Emissivity: Life Cycle Assessment (LCA)

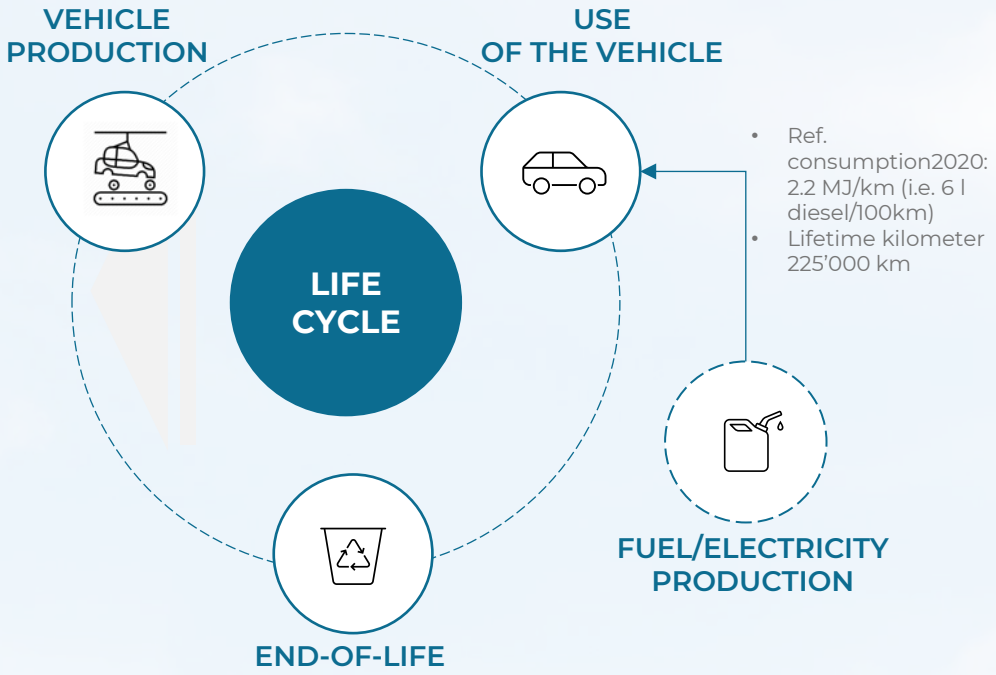
The calculation of emissions over the entire life cycle shows that even in the long term, a 100% HVO vehicle is comparable to an electric or hydrogen car.

EMISSIONS

gCO_2e/km [A 2020] [B 2050]



MAIN EMISSION SOURCES IN LCA PERSPECTIVE



On the basis of the Ricardo study, the Commission stated that the ICE engine is more polluting than the BEV/FCEV engines; this evaluation assumes the use of a blend of fossil diesel and alternative fuels with low 'GHG savings'

Using the same evaluation framework as Ricardo, but considering an ICE car powered by 100% HVO the emissivity values would be in line with BEV / FCEV engines, both in the short and long term

SOURCE: Ricardo Energy&Environment, Determining the environmental impacts of conventional and alternatively fueled vehicles through LCA, Final Report for the European Commission, DG Climate Action (2020)
FCEV = Fuel Cell Engine Vehicle; BEV = Battery Electric Vehicle; ICE = Internal Combustion Engine.; LCA = Life Cycle Assessment; HVO estimate based on ENI's elaboration on Ricardo's data.

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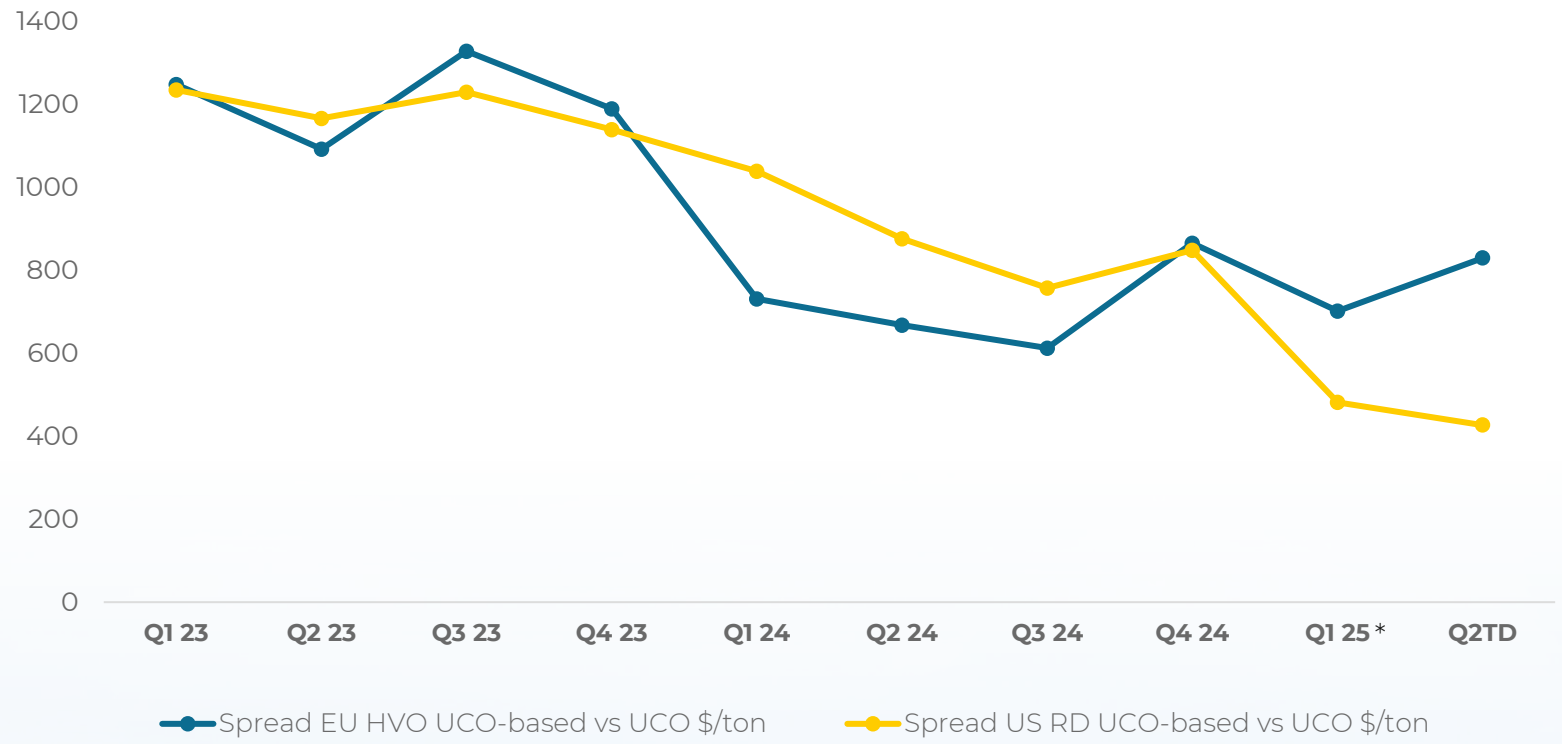
Market Markers

SPREAD VS UCO

EU HVO & US RD (UCO-based)*

$/ton



Source: Argus. 2Q to date as per 10 June 2025.

As of 2025, US West Coast RD prices do not include the Blender Tax Credit (BTC) which expired at the end of 2024. BTC was eligible irrespective of type of feedstock and granted also to the blenders, equivalent to 1$/gal (or >300 $/ton). The new PTC (Production Tax Credit or 45Z) is eligible only to producers and its value varies according to feedstock type. According to the guidelines issued in January, UCO PTC is equal to 0.68 $/gal (or >200 $/ton). Currently the values underlying PTC are being reviewed by the US Administration and a decision has not been finalized yet. Argus pricing assessment *does not* include PTC.

Biofuel markets hit a low in 2024
due to an oversupplied market

Q2TD EU spread
at the highest level since end of 2023

A gradual rebalance is expected both in Europe and US from 2H2025

In EU more stringent targets under RED III **should boost prices**

In US, despite the uncertainty in policy, **prices are set to increase** buoyed by an expected rise in the RVO and new LCFS targets by the EPA
lending support to RINS D4