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Refinery Transformation to Biorefinery

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enilive

ENILIVE

A GLOBAL PLAYER IN SUSTAINABLE MOBILITY

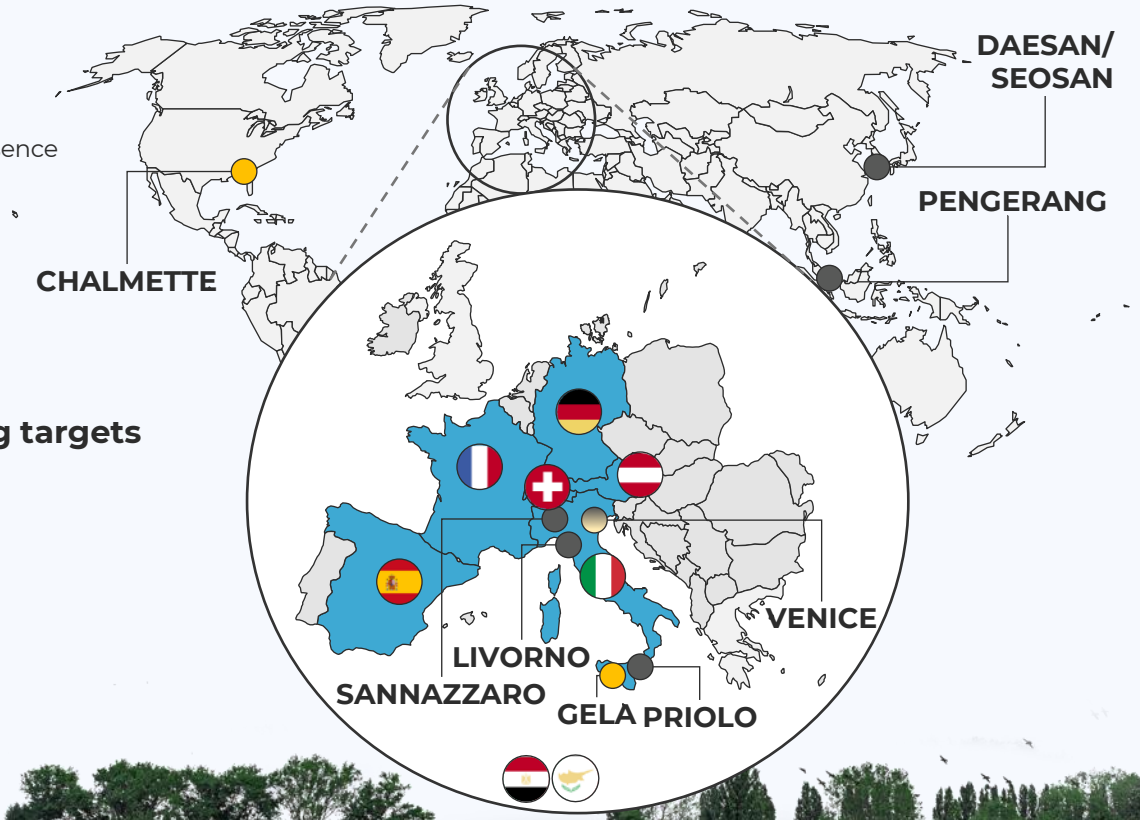
ENILIVE GLOBAL FOOTPRINT FROM BIOREFINERIES TO SERVICE STATIONS

BIOREFINERIES

- Operational
- In execution

RETAIL

- Country presence



~5,300
Total number of stations

>1,700
service stations distributing HVO in 2026

Biorefining targets (MTPA)

2.1 @2026

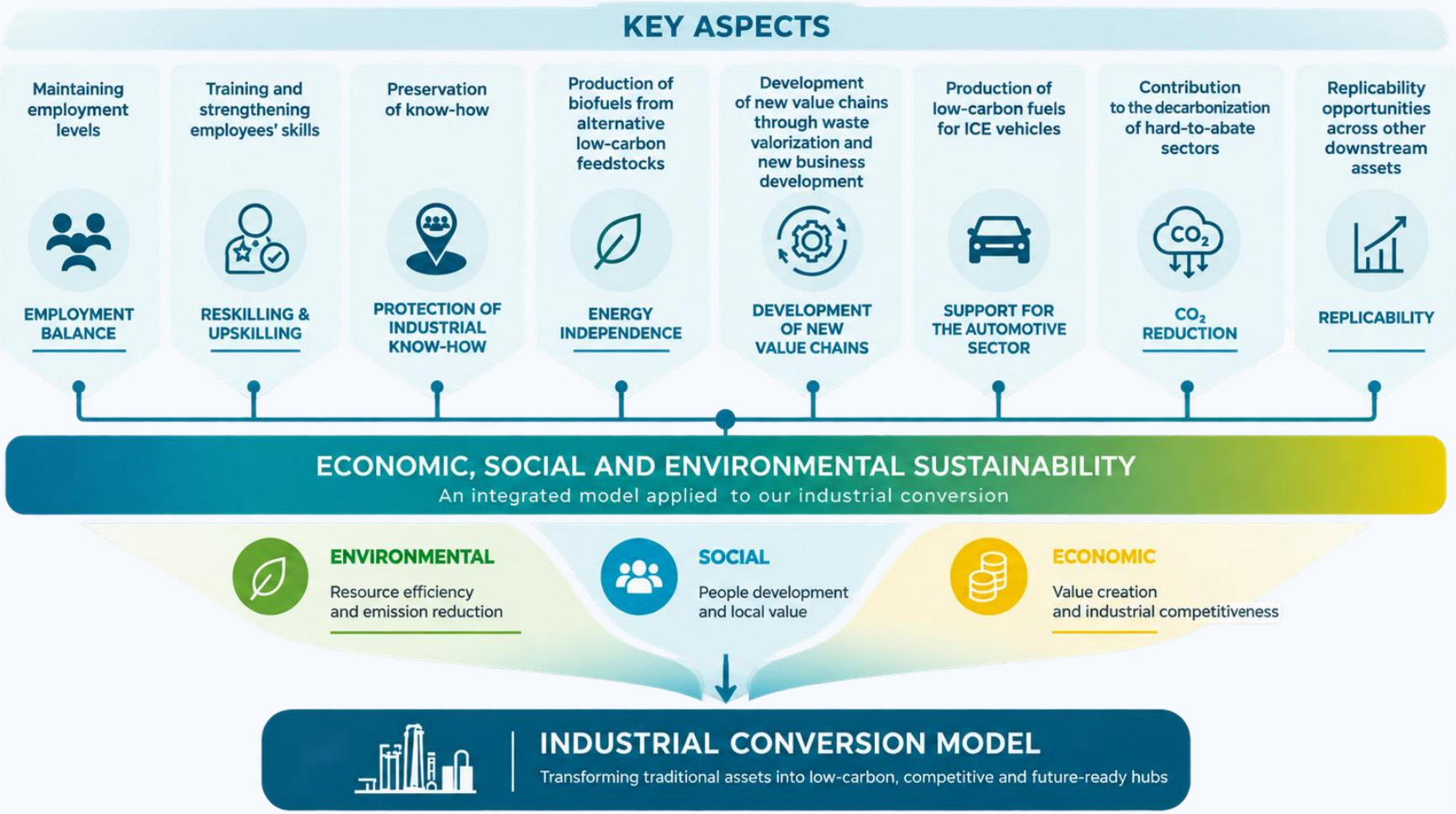
>3 @2028

5 @2030

- **Established in 2023** as Eni's company dedicated to products and services for **sustainable, innovative and evolving mobility**
- **Vertically integrated across the value chain:** from sustainable feedstocks, through biorefining, to fuel distribution and retail
- **2nd largest operator in EU for biorefining capacity**
- **1st fuel retailer in Italy**, with more than **21% market share** and an extensive service station network
- Leading provider of **integrated mobility services**, including car sharing (Enjoy) and services supporting people on the move (e.g. food and hosting service hubs)

INDUSTRIAL TRANSFORMATION

OUR INTEGRATED SUSTAINABILITY MODEL



LEGACY INDUSTRIAL BASE

Converting traditional refineries while retaining strategic optionality around remaining capacity

Focusing on asset integrity & operational efficiency by offering a wide set of industrial services

CONVERSION & REPURPOSING

Redirecting industrial capabilities toward higher-value, lower-carbon configurations

Progressing on conversion plan of Traditional Refining



VENICE & GELA | BROWNFIELD BIOREFINERIES

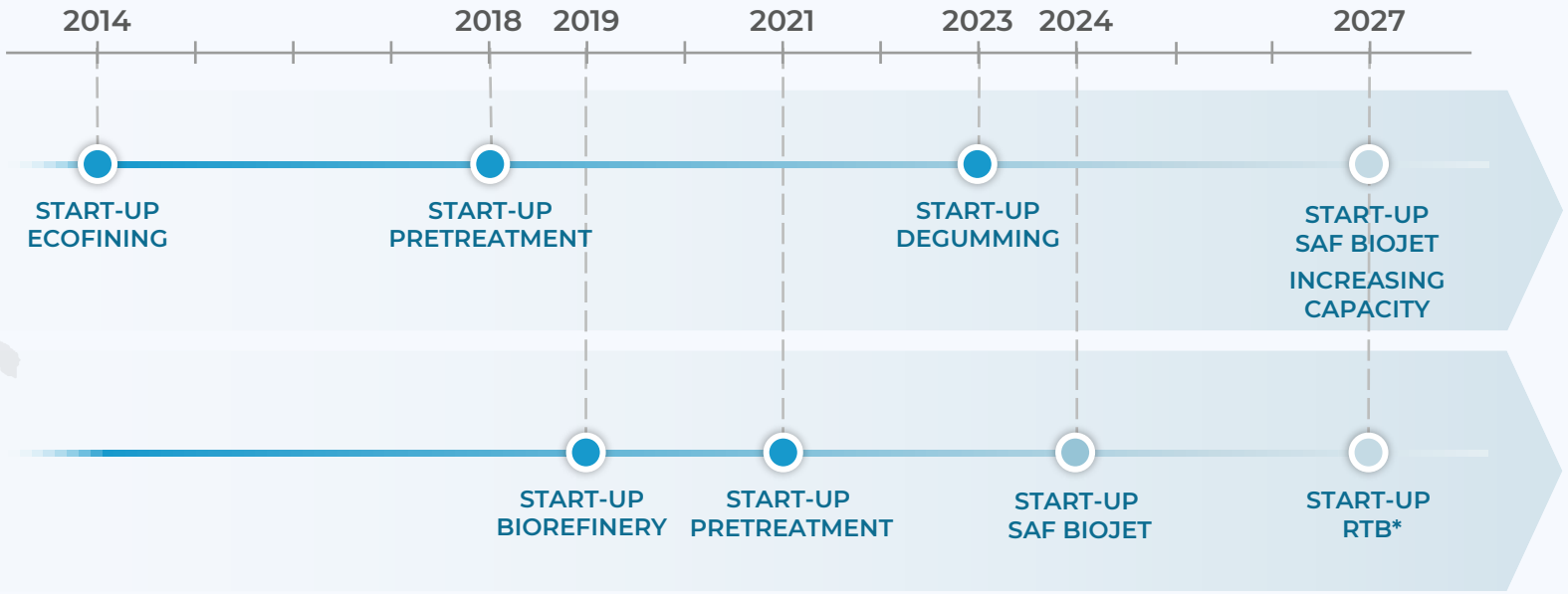
FROM REFINERY TO BIOREFINERY: A SUCCESSFUL TRANSFORMATION MODEL



VENICE



GELA





SUCCESSFUL TRANSFORMATION MODEL

- World's first transformation of traditional refineries into biorefineries, with a rapid time to market
- Employment securitization
- Maximizing the recovery of existing assets and reducing emissions
- Continuous technological transformation and improvement

Biomass pre-treatment improvement

New products (eg. SAF)

Biorefining capacity increase

... which continues with further projects/investments to strengthen the sites



*RTB = Bleaching hearths regeneration plant

NEAR-FUTURE DEVELOPMENT PROJECTS

OUR GROWTH PLAN IN BIOREFINING: EXPANDING ENILIVE GLOBAL FOOTPRINT



LIVORNO



PENGERANG



DAESAN/ SEOSAN



VENICE EXPANSION



PRIOLO



SANNAZZARO

	LIVORNO	PENGERANG	DAESAN/ SEOSAN	VENICE EXPANSION	PRIOLO	SANNAZZARO
FID	Taken in Jany 2024	Taken in July 2024	Taken in July 2024	Taken in Feb 2026	Taken in Jan 2026	Taken in Jan 2026
START-UP	Dec 2026	2028	2027	2027	2028	2028
TOT CAPACITY	**~500 kton**	**650 kton**	**400 kton**	**up to 600 kton**	**500 kton**	**550 kton**
OWNER-SHIP	100% Enilive	JV with PETRONAS & Euglena	JV with LG Chem	100% Enilive	JV with Q8 Italia	100% Enilive

ECOFINING TECHNOLOGY & ADVANCED PRETREATMENT

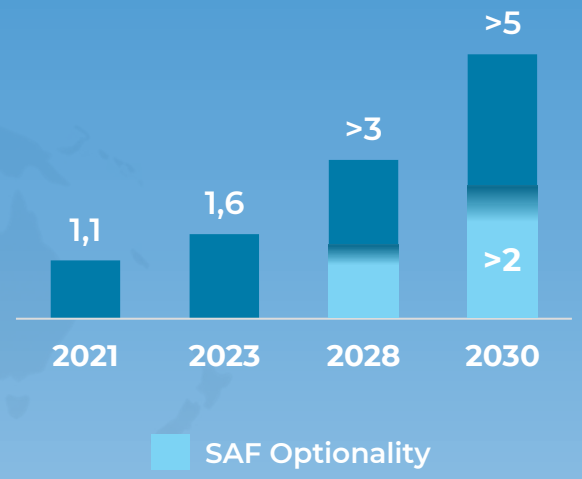
DINAMIC EXPANSION

Synergies with existing facilities, cost optimisation opportunities

Partnering with leading local players

Enhancing product mix and capacity de-bottlenecking in Venice

EVOLUTION OF BIOREFINING CAPACITY | MTPA



BIOREFINING VALUE CHAIN

ENHANCING VALUE ACROSS PROCESSES

BIOFEEDSTOCKS

- WASTE OIL AND RESIDUES
- VEGETABLE OILS
- ANIMAL FATS

BIOREFINERY

- PRE-TREATMENT
- HYDROGEN PRODUCTION
- ECOFINING™

CO-DEVELOPED WITH HONEYWELL-UOP

BIOFUELS

- HVO LPG
- HVO-NAPHTHA
- BIO JET (HEFA(*))

UTILIZATION IN BLENDING UP TO 50% IN CONVENTIONAL PLANES

- HVO DIESEL

60-90% GHG SAVING VS FOSSIL DIESEL

UTILIZATION IN ICE(**) UP TO 100%

HVOLUTION
DIESEL 100% RINNOVABILE

(*) Hydroprocessed Esters and Fatty Acids
(**) Internal Combustion Engine

A WIDE PORTFOLIO OF FEEDSTOCKS

ECOFINING™ TECHNOLOGY: FLEXIBILITY IN PROCESSING BIO-FEEDSTOCKS

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

Enilive biorefineries: Palm Oil free

Significant role of waste & residue

Relevant potential of 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



In 2025 we processed around **9% vegoil** and **91% of "waste and residue"** in our biorefineries, with an average annual GHG saving of 80.5%*

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

ENILIVE BIOREFINERY (1/2)

BIOMASS PRE-TREATMENT PROCESSES

PRE-TREATMENT STAGE 1
DEGUMMING

PRE-TREATMENT STAGE 2
BLEACHING



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

ENILIVE BIOREFINERY (2/2)

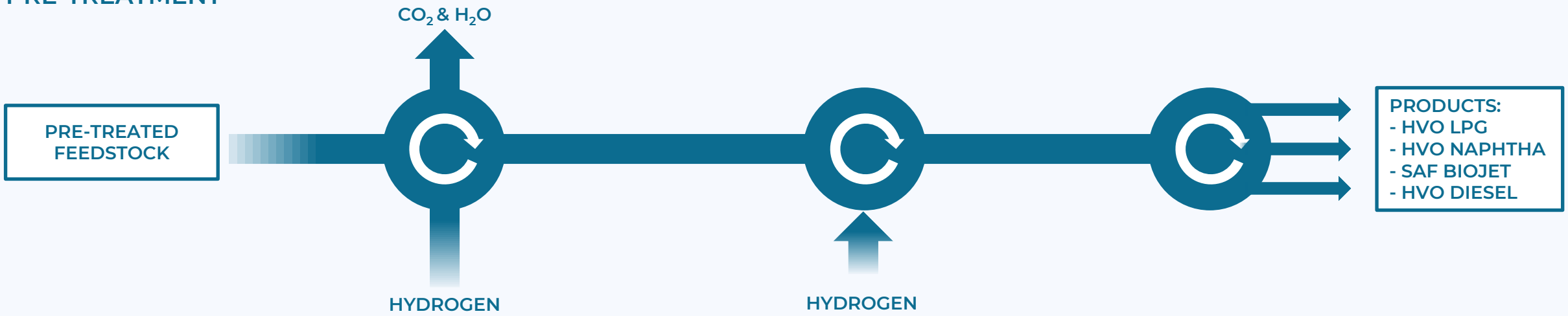
ECOFINING™ PROCESS

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

ENILIVE

DISTINCTIVE ELEMENTS DRIVING GROWTH

FIRST MOVER INTO BIOREFINERY CONVERSION

1st player among energy majors and 2nd in Europe by biorefining capacity
10+ years of successful biorefining operations & conversion track record

1.65 Mton
biorefining capacity in 2025

STRONG TECHNOLOGY INNOVATION CAPABILITIES

Co-developer for innovative Ecofining™ process
Continuous improvement through ongoing joint collaboration with UOP. SAF production boost. Supply flexibility (pre-treatment enhancements)

~30%
Ecofining mkt share
in HEFA Global capacity

GLOBAL FOOTPRINT ON BIOFUEL MARKET

Global presence with distinctive supply, extensive trading and commercial capabilities

Further biorefining capacity expansion worldwide. Supply & trading team across four continents

AGRI-HUBS VERTICAL INTEGRATION

Upstream vertical integration with equity feedstock through Agri-hubs and W&R providing higher control vs market through direct access to derisked, traceable feedstock

Leading position
in non-food crops, with degraded land feedstock potential and **first-mover** in agricultural residues

VERTICAL INTEGRATION WITH DOWNSTREAM

Downstream vertical integration leveraging on wholesale/retail as captive outlets for bioproducts

~5,300 station network
with increasing offering of mobility solutions of which HVO 100%



Thanks for your attention!

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