

Boosting Green Applications Through Enhanced Zeolites





AGENDA

- 01 — Zeopore Technology
- 02 — Sustainability Market
- 03 — Chemical Plastic Waste Recycling
- 04 — CO₂ Derived Products
- 05 — Biomass Conversion
- 06 — Current Status Zeopore



Company founded
in 2018



Located in the middle of
Europe's largest
petrochemical complex in
Belgium



Mesoporous zeolites for
refining petrochemical &
renewable applications



Production capacity ranging
from g-scale to ton-scale.

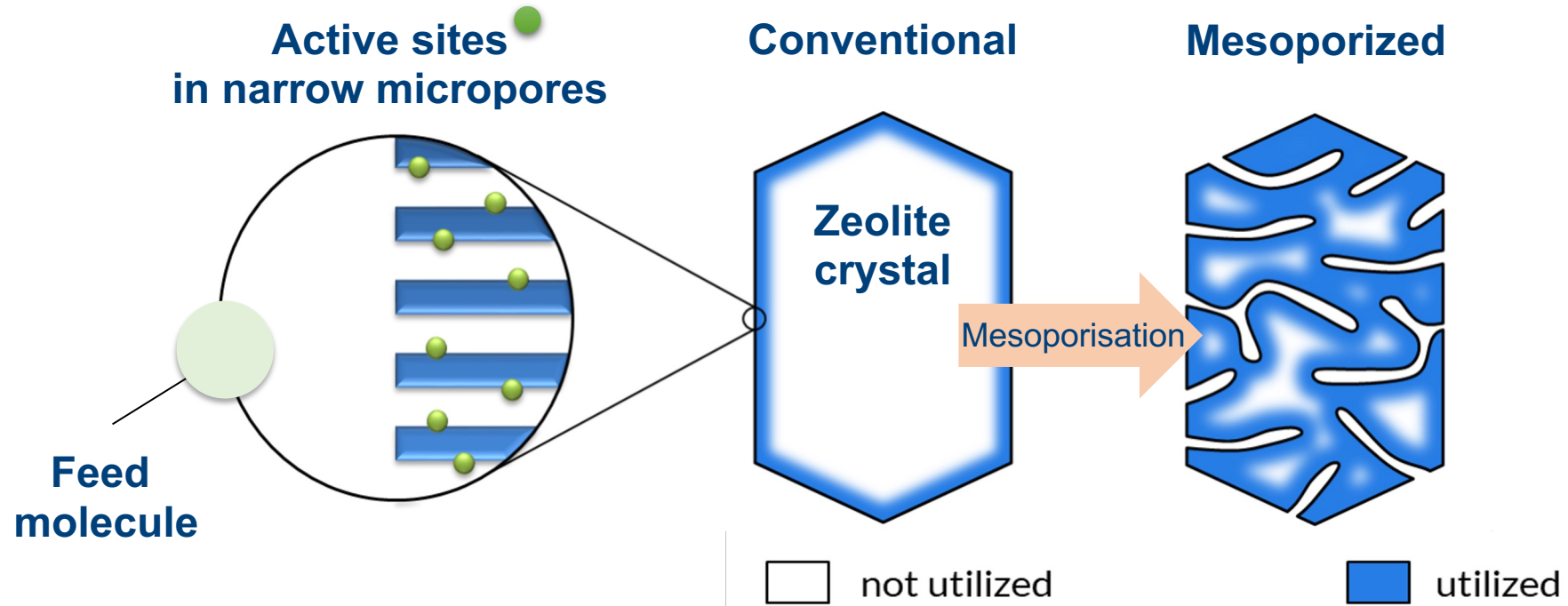
Technology



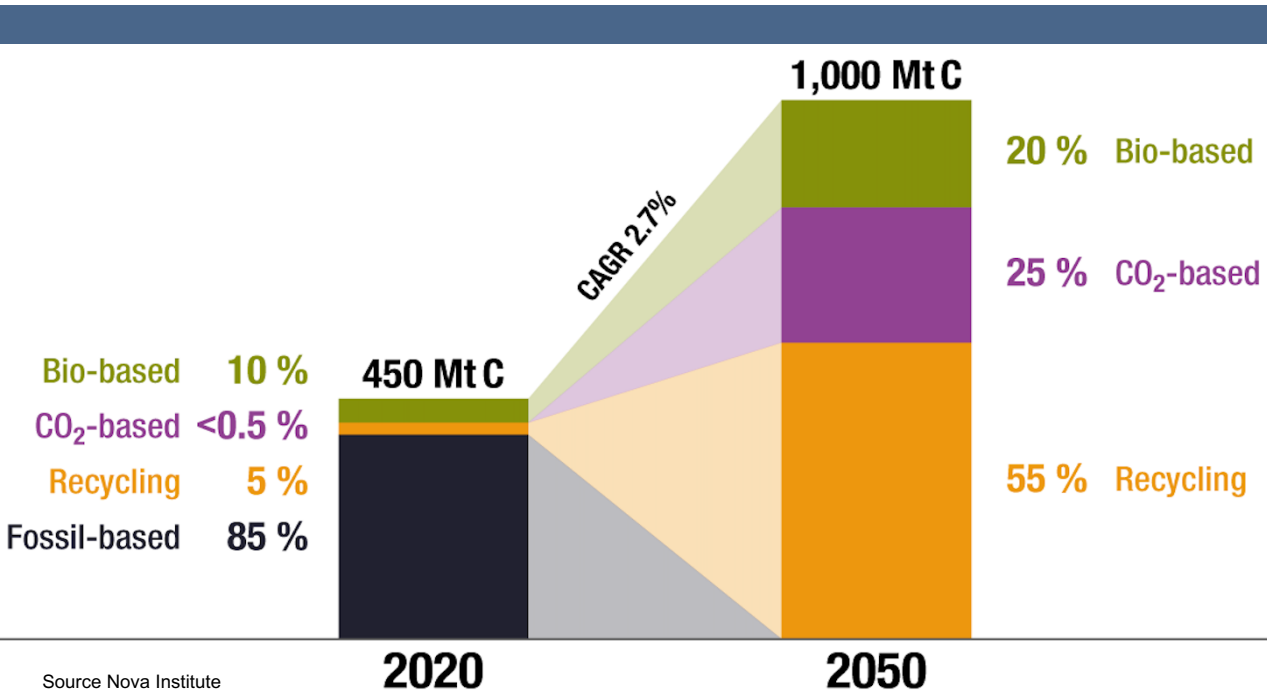
Controlled zeolite pore modification



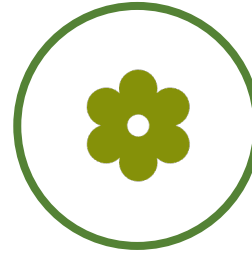
Enhance catalytic performances



Sustainability Market Status



Global Carbon demand



Biomass

The most advanced Feedstock :
Plants, woods and organic waste
High level Oxygen



CO₂ derived Products

Under development
Intensive CAPEX, energy intensive,
green energy and green H₂, scalability



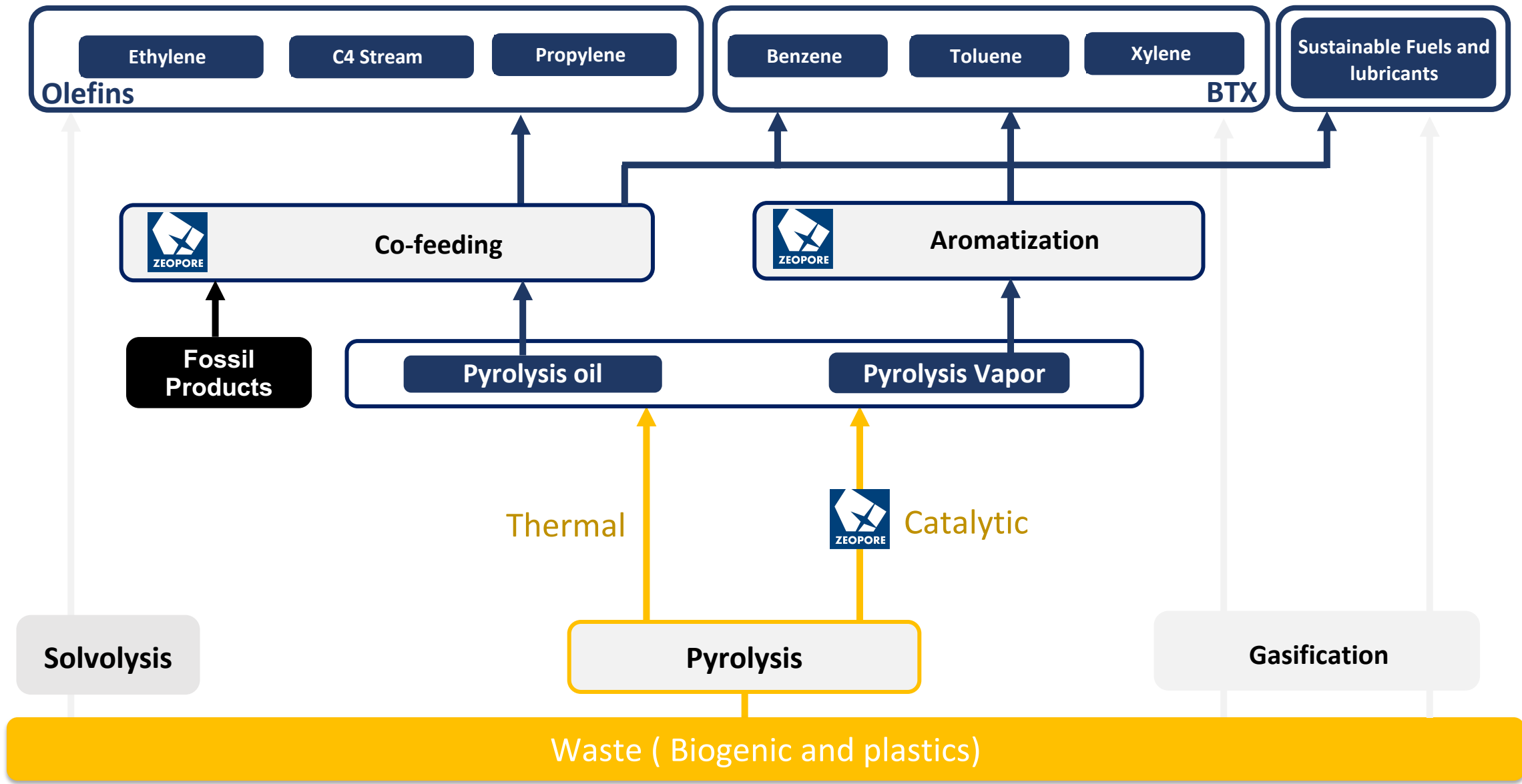
Waste recycling

Methane, Plastics thermal pyrolysis,
gasification
Feedstock access, oil purification



Chemical Plastic Waste Recycling

The Renewable Path



Chemical plastic waste recycling

A

Catalytic
Pyrolysis

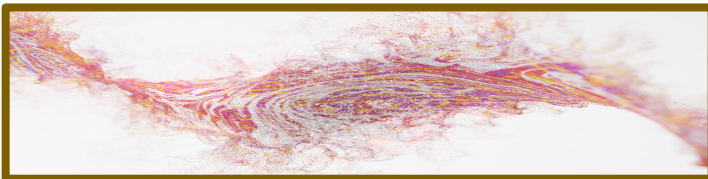


Challenges

Contact feedstock with catalyst
Contaminants

Selected Zeolites &
Excepted benefits

USY
Activity
Lifetime



B

FCC
Co-Feeding



Challenges

Stability of Py-oil
Contaminants

Selected Zeolites &
Excepted benefits

USY and ZSM-5
Selectivity



C

Vapor Gases
to BTX



Challenges

Gas and coke
Activity

Selected Zeolites &
Excepted benefits

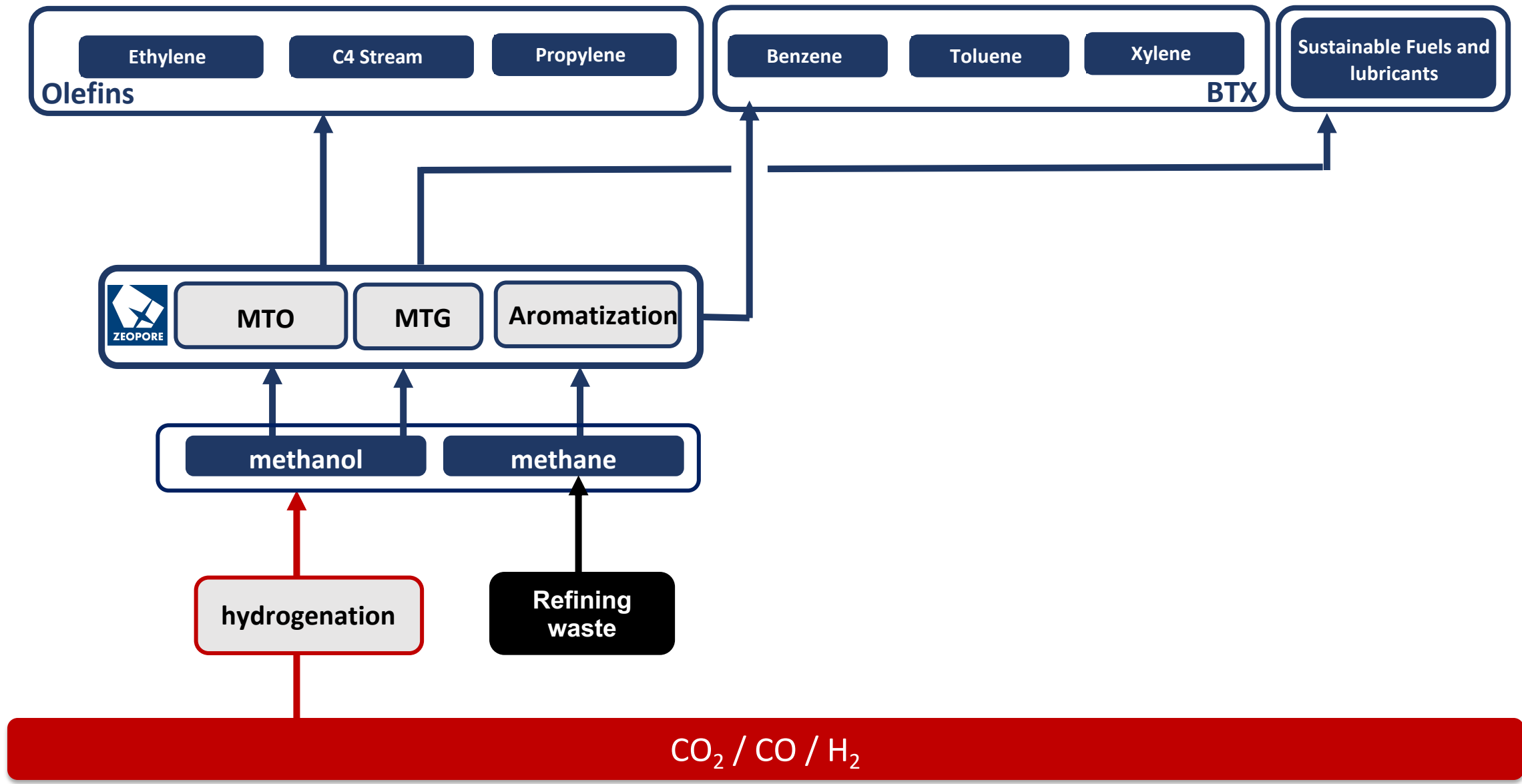
Zn and Ga/ ZSM-5
Activity
Selectivity



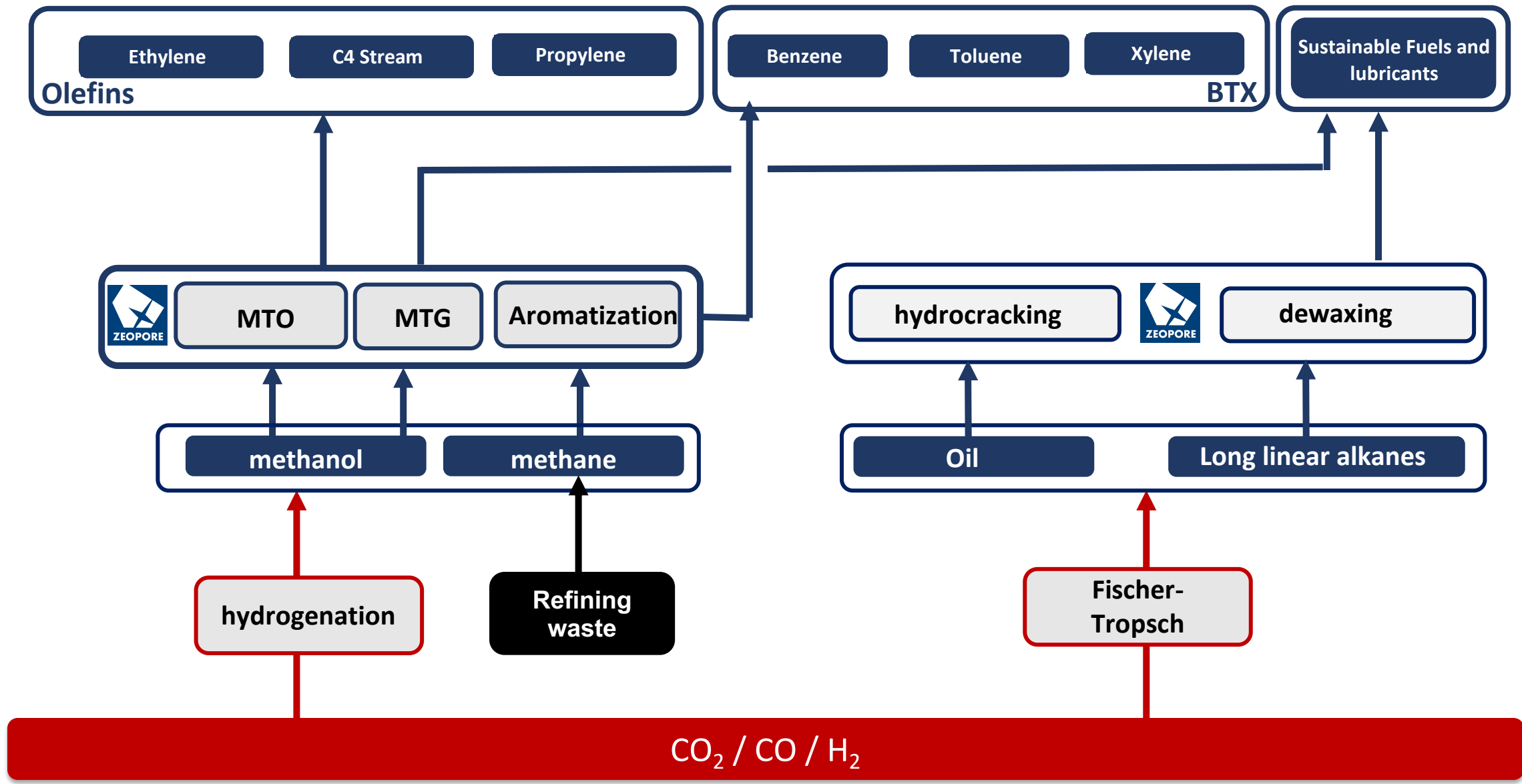
The background is split vertically. The left side is dark green with several iridescent bubbles of various sizes, some containing a reflection of a landscape. The right side is plain white. The text is centered across the split.

CO₂ Derived Products

The Renewable Path



The Renewable Path



CO₂ derived products

A

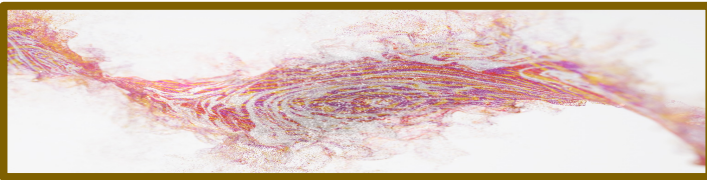
Methanol to Olefins

Challenges

Deactivation by coking
Cost of SAPOs

Selected Zeolites & Excepted benefits

SAPO-34 + lower cost zeolite
Selectivity
Lifetime



B

Methanol to Gasoline

Challenges

Deactivation by coking

Selected Zeolites & Excepted benefits

Zn/Mg ZSM-5
Selectivity
Lifetime



C

FT Oil Upgrading

Challenges

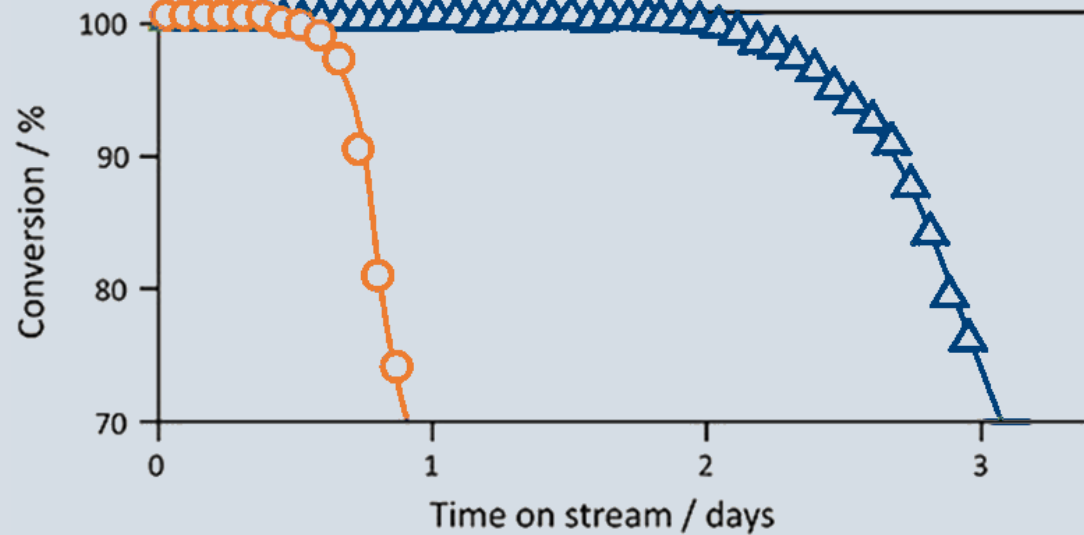
Selectivity
Product quality

Selected Zeolites & Excepted benefits

USY
Selectivity
Activity

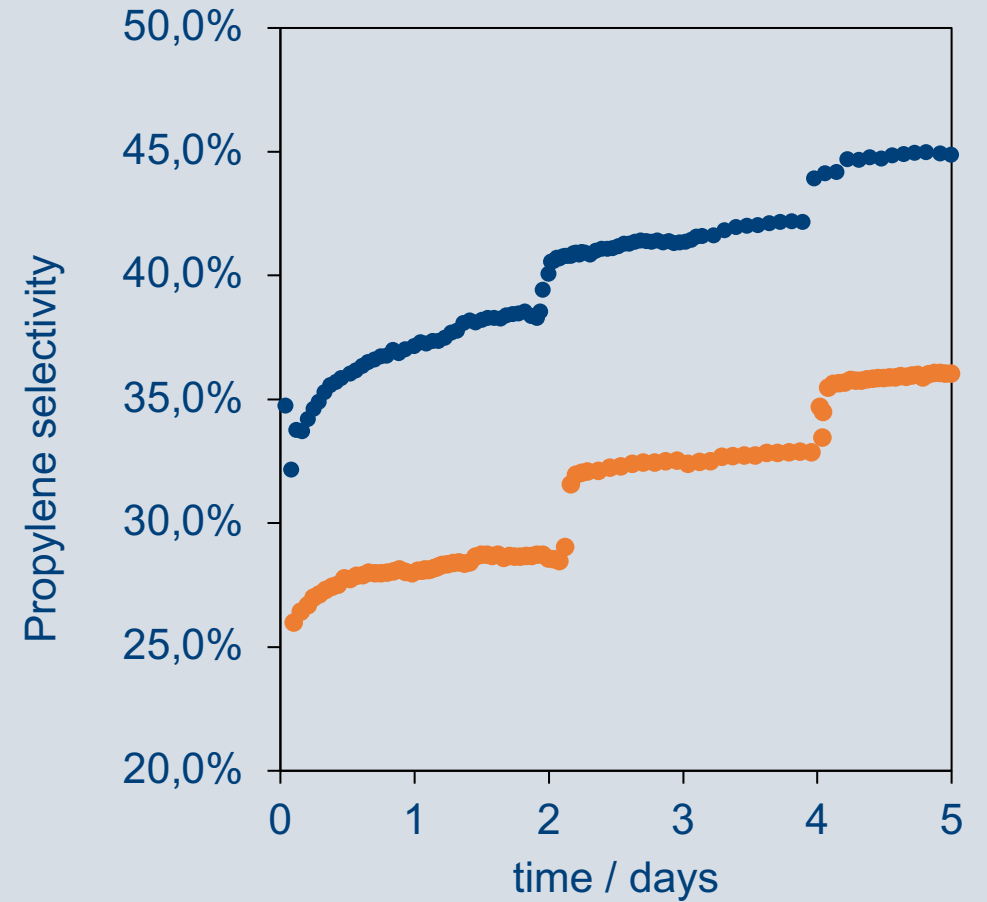


Case study 1 : Methanol Conversion

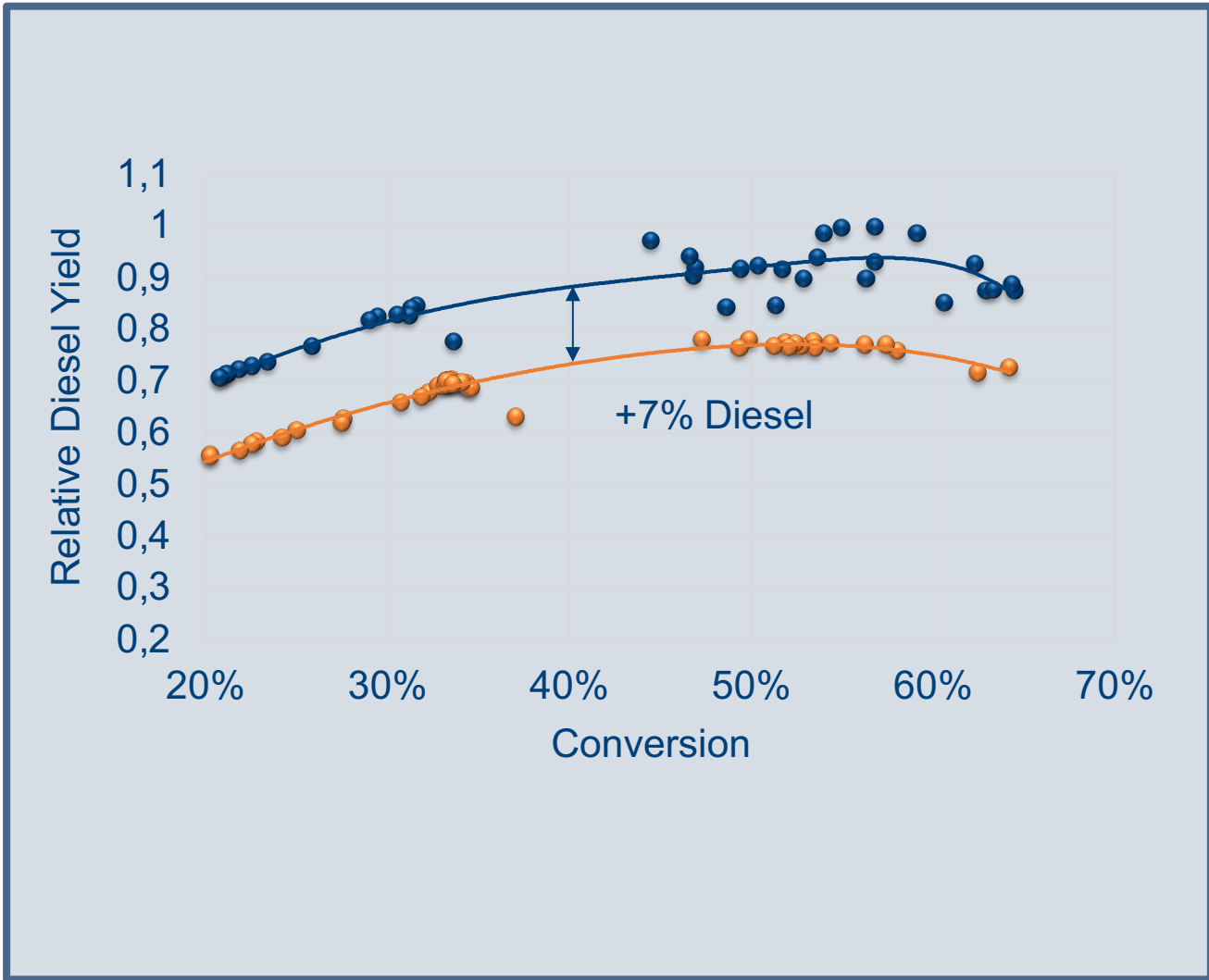
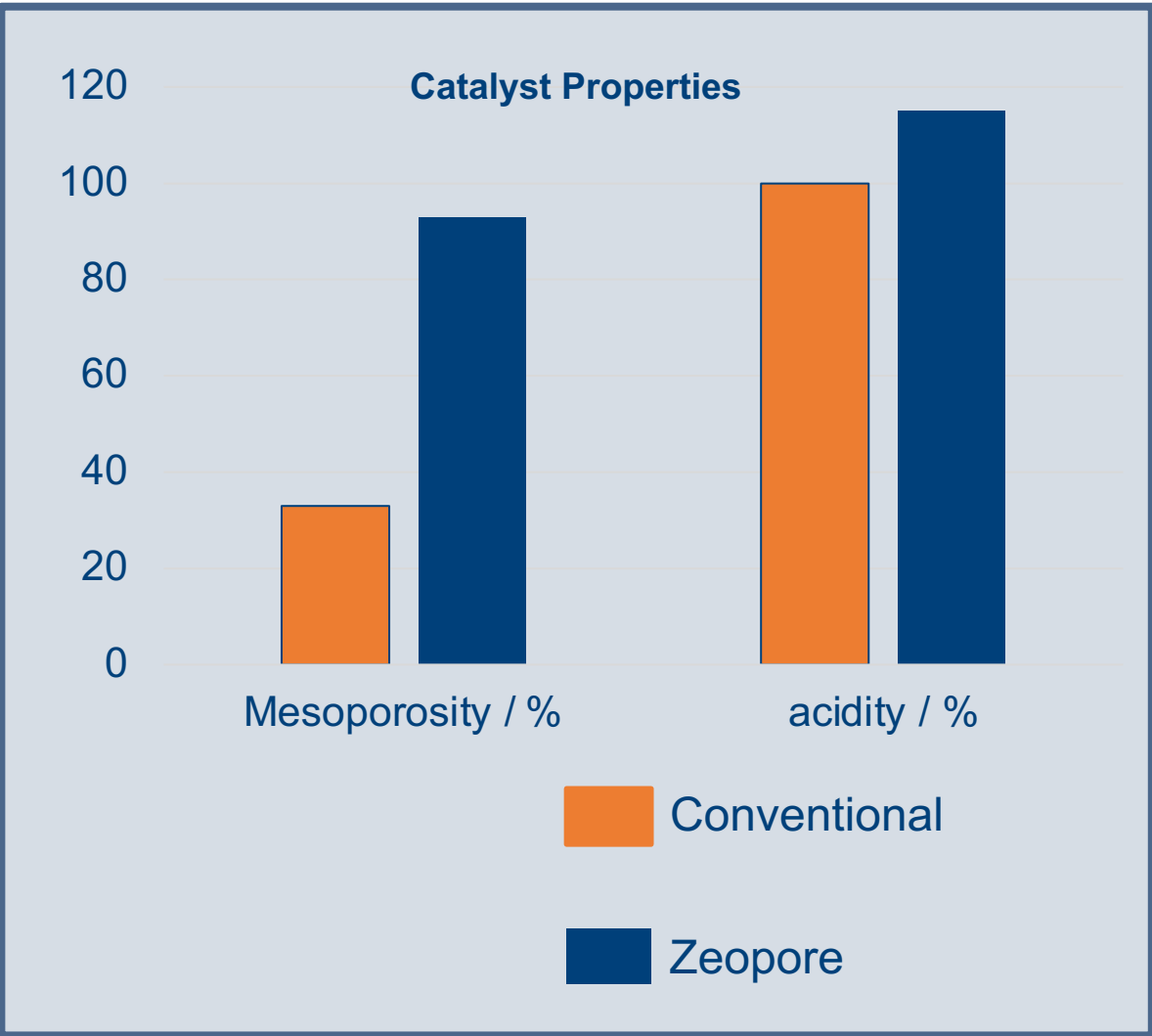


Conventional

Zeopore



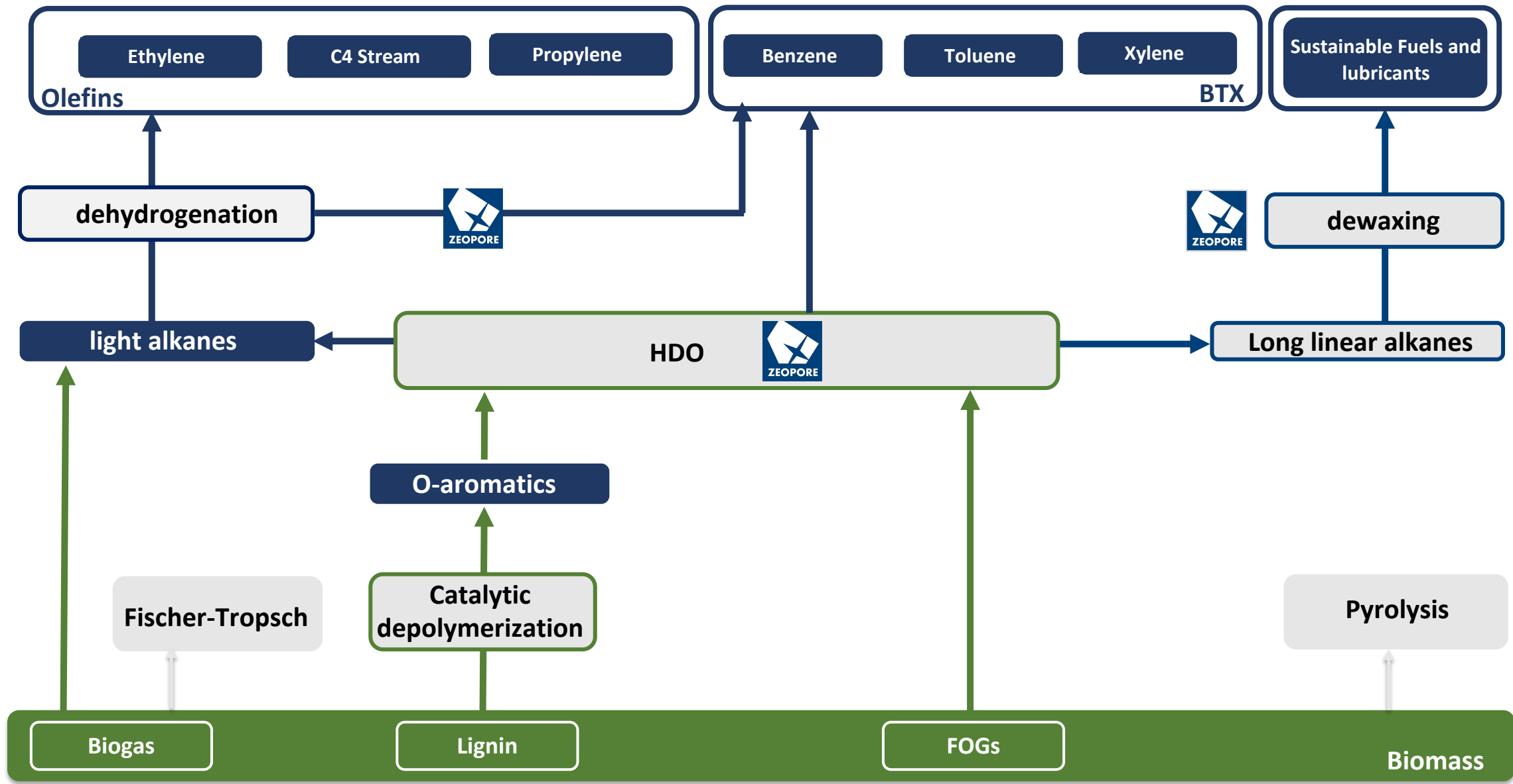
Case study 2 : FT-oil upgrading via hydrocracking





Biomass conversion

The Renewable Path



Biomass Conversion

A

**Light Alkanes
Valorization**

Challenges

Energy demand
Coking

**Selected Zeolites &
Excepted benefits**

Mo or Fe ZSM-5
Selectivity
Lifetime



B

HDO

Challenges

Selectivity, availability
Diversified feedstocks

**Selected Zeolites &
Excepted benefits**

Ni/ZSM-5
Selectivity
Product quality



C

Dewaxing

Challenges

Selectivity
Product quality

**Selected Zeolites &
Excepted benefits**

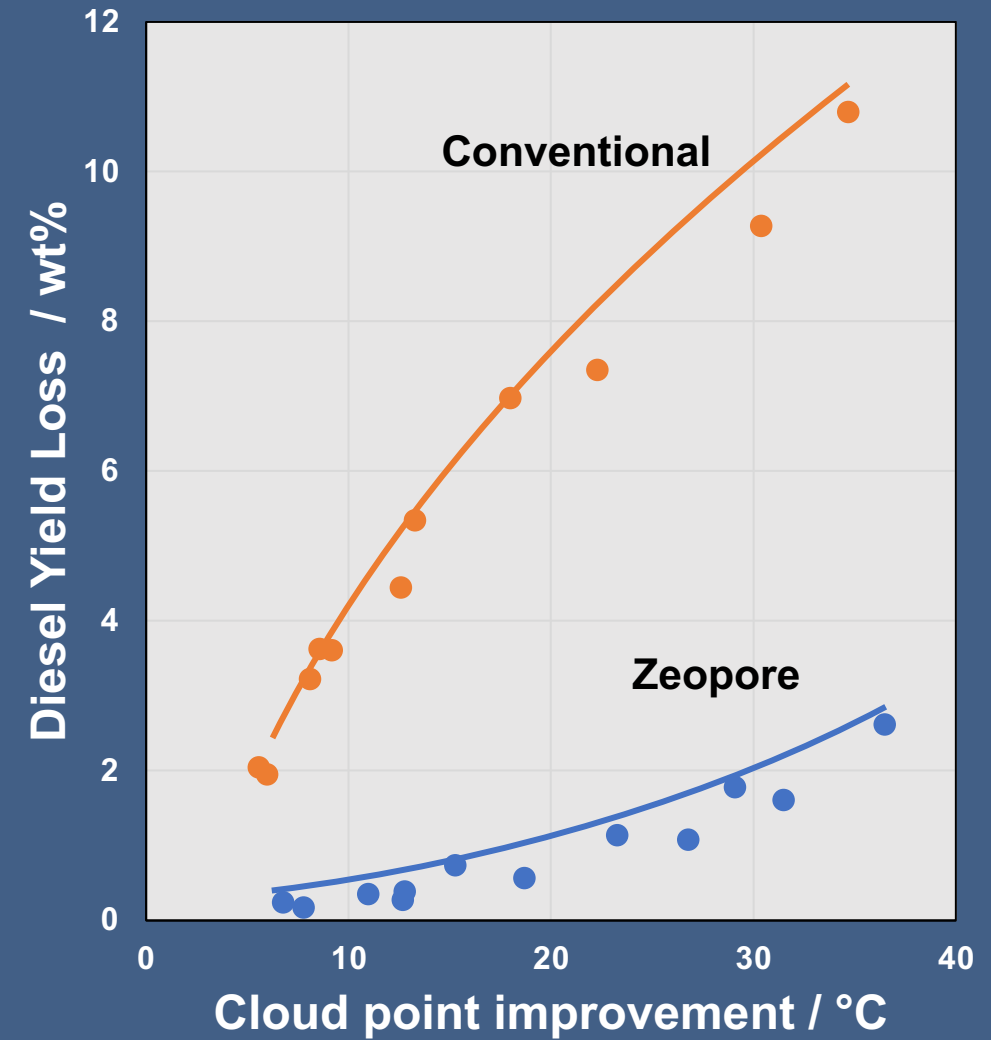
Mg ZSM-23
Selectivity
Product quality



Case study 3 : Oil Dewaxing

Improved diesel retention

Reduction of light fractions

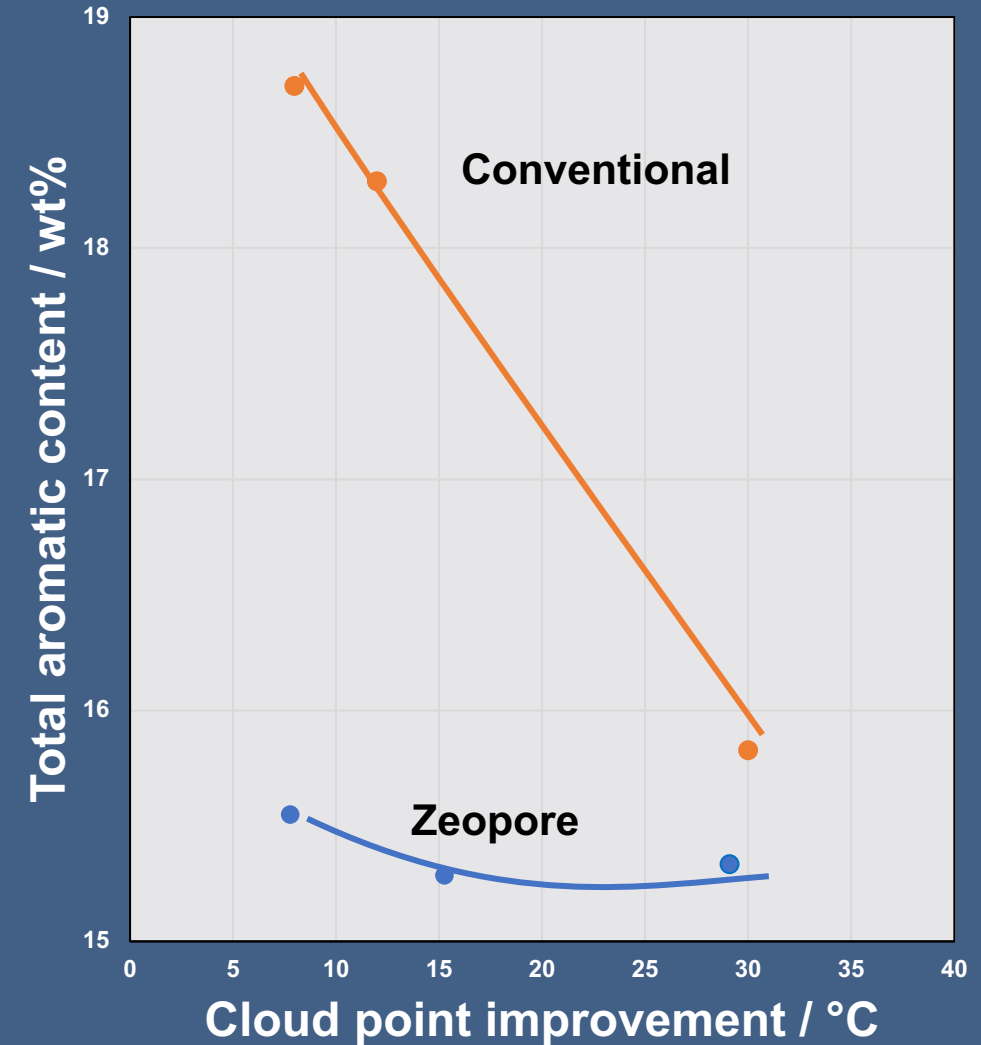


Case study 3 : Oil Dewaxing

Improved diesel retention

Reduction of light fractions

Superior product quality via improved aromatics saturation



A reliable Partner



Customer Validation

Proven Benefits Scalability

Financials

Commercial Capital Consortium



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