



— Industrially Proven Technologies,
EU Mass Balance Ready for
**Large Scale Deployment of
Plastic Pyrolysis**
towards PPWR 2030

Stéphane FEDOU



Axens
Powering integrated solutions

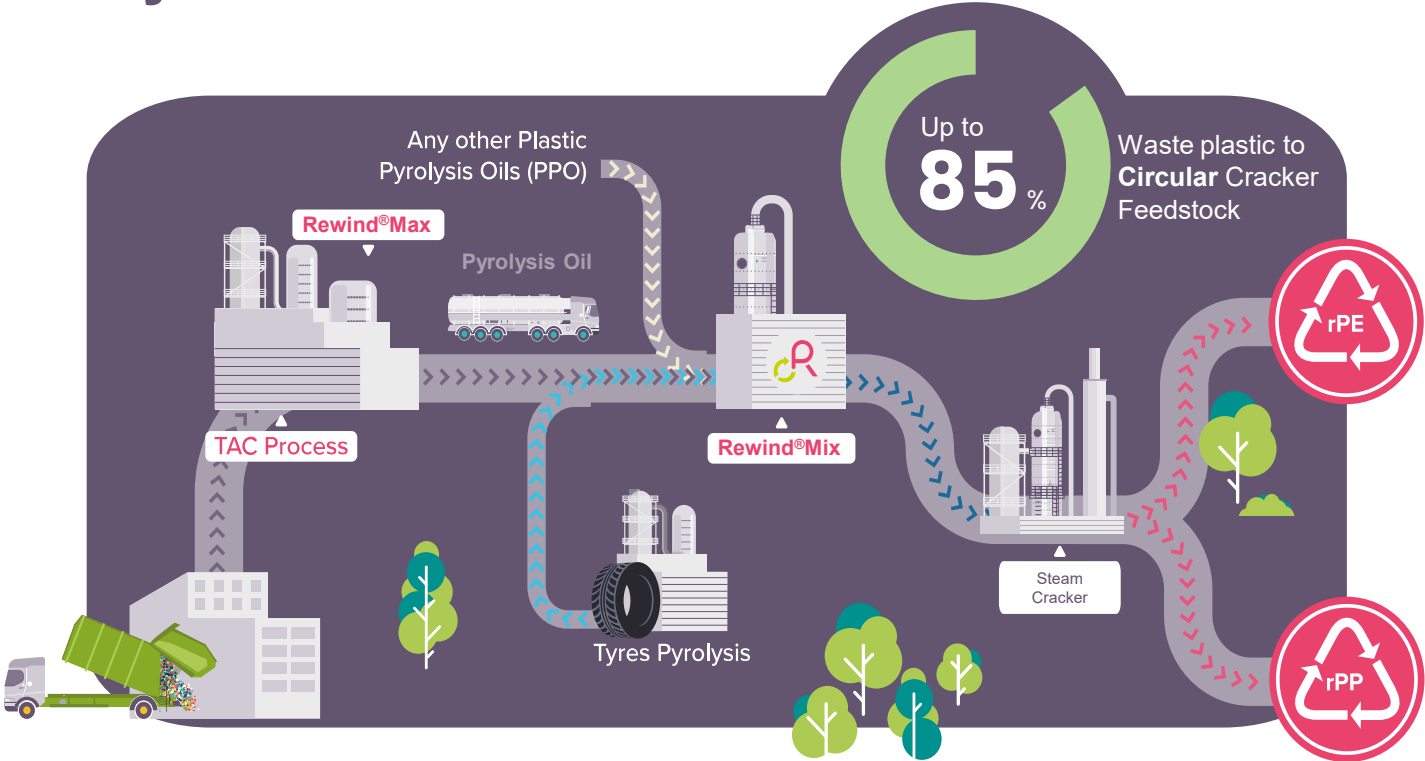
Pyrolysis Pathway

TAC PROCESS



Rewind^{MAX}

Rewind^{MIX}



Waste Plastic Pyrolysis : An EU Industrial Reality

4 kta



Almeria SPAIN
2016

4 kta



Sevilla SPAIN
2017

COMMERCIAL
SCALE

RELIABLE
QUALITY

10 YEARS OF
INDUSTRIAL EXP.

سابك
sabic

Started up
Q3 2025



Amsterdam

Netherlands

Geleen

20 kta



15 kta



Paris

Grandpuits

France

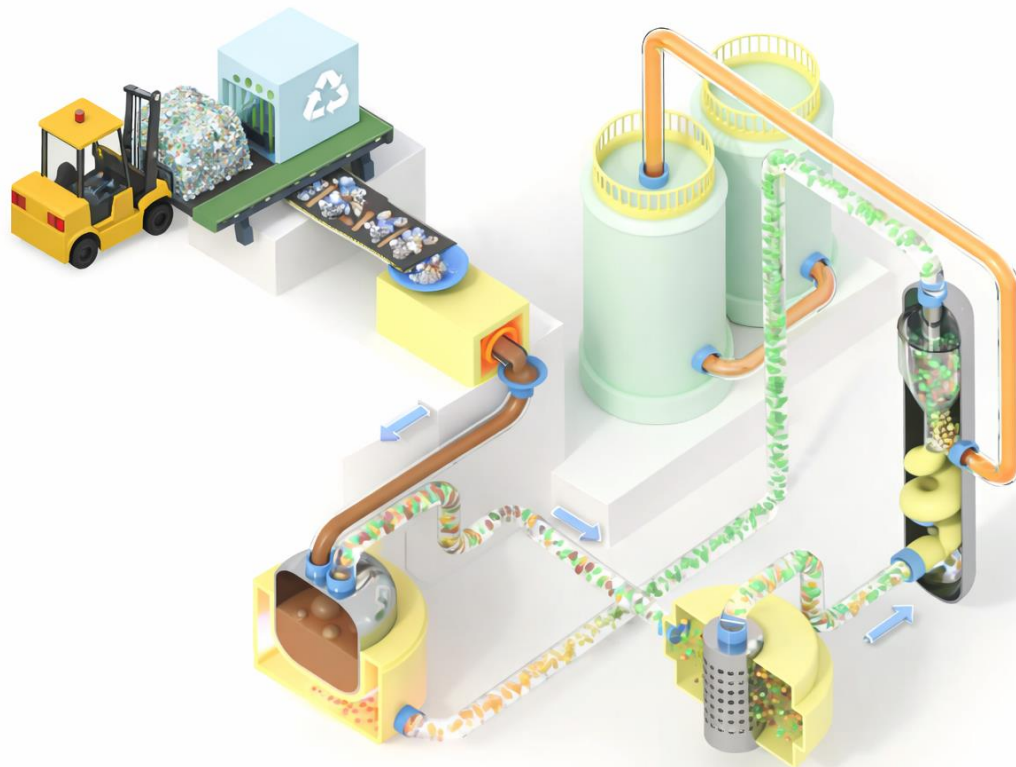


TotalEnergies

Started up
Q4 2025

Industrial Feedback : Challenges

Feedstock
Preparation &
Conveying



Industrial Feedback

Agglomerates with
Automated Feeding System



- ✓ High density
- ✓ Automatic feeding system
- ✓ Higher extruder efficiency
- ✓ Better local environmental impact (dusts ...)



eTAC and R-Max : Efficient Scale-Up for High Capacity

Grandpuits & Geleen
Design (2019 / 2020)



20 kta

Up to
70 %

Waste plastic to
Pyrolysis Oil

NEW 
Optimized

20 kta



Up to
85 %

Waste plastic to
Circular Naphtha

Already designed and proposed by Axens

EU Mass Balance Regulation Ready



**Waste Plastic
Pyrolysis Oil**



Naphtha
to Steam Cracker

- Metals
- Nitrogen
- Oxygenates
- Chlorine
- Silicon
- Diolefins

Distillate
to Fuel



Up to
100 wt%
Yield

- Metals, Nitrogen, Chlorine & Silicon removal
- Diolefins & Olefins saturation
- **Hydro-cracking**



**Circular Naphtha
& LPG**
to Steam Cracker

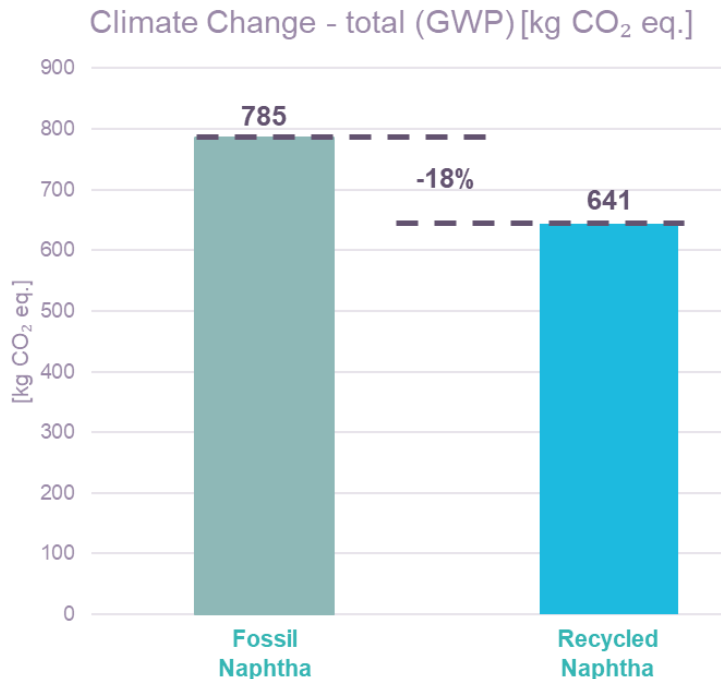
Circular Naphtha – Life Cycle Analysis

Virgin Eq.
Circular
Naphtha



1 ton of
circular
naphtha

50/50 Ref. SMR + EU Mix



Waste
Plastics

TAC PROCESS



Rewind[™]
MAX

Rewind[™]
MIX

Without End-of-Life Avoidance

0.14

ton CO₂ eq. savings
compared to status quo (fossil
naphtha) w/o EOL Avoidance

2.63

ton CO₂ eq. savings
from Avoided Incineration
with Energy Recovery

2.77

ton CO₂ eq. savings ⁽¹⁾
compared to status quo (fossil
naphtha) with EOL avoidance

(1) 2.77 ton CO₂ eq. savings per ton of circular naphtha with EOL avoidance (waste plastic incineration with energy recovery).
LCA done by an independent 3rd party (September 2025).

Conclusion

Industrially proven technology



20 kta

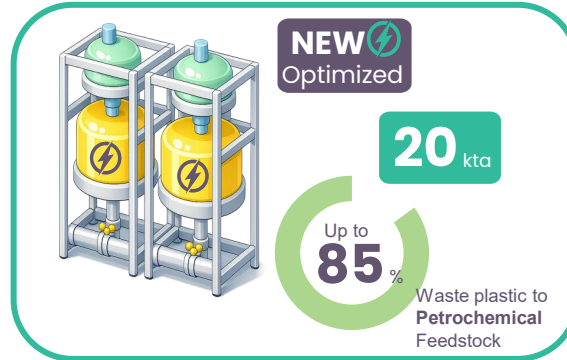
TECHNOLOGY PROVEN

15 kta

سابك
sabic

TotalEnergies

Optimized Scale-Up for High Capacity



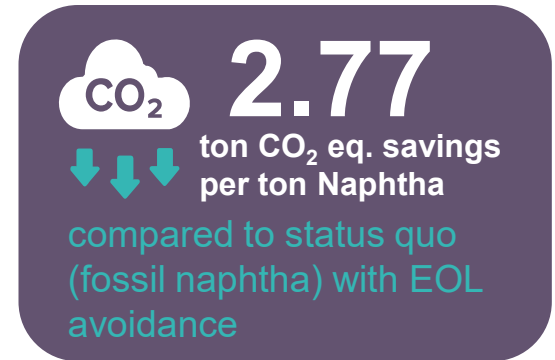
NEW Optimized

20 kta

Up to 85%

Waste plastic to Petrochemical Feedstock

Higher Yield and Improved LCA



CO₂ 2.77

ton CO₂ eq. savings per ton Naphtha

compared to status quo (fossil naphtha) with EOL avoidance



Started Basic Design for EU

250 kta

Integrated Project for Cracker-Grade Recycled Naphtha



Guarantees by Axens

Axens
Powering integrated solutions



axens.net



Thank you

Axens.net
a new digital
journey