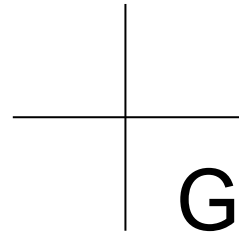


SULZER



Gas Solution for Crude Oil Refinery

July 12. 2023





Disclaimer

This presentation may contain forward-looking statements, including but not limited to, projections of financial developments, market activities or future performance of products and solutions, containing risks and uncertainties.

These forward-looking statements are subject to change based on known or unknown risks and various other factors, which could cause the actual results or performance to differ materially from the statements made herein.

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About SULZER

Together with our customers for a better world

Sulzer is a global industry leader, with two centuries of experience developing innovative products and services that drive sustainable progress — and help our customers build a better world.

3.2

Billion sales
(CHF) 2022

12'900

Employees

40

Production
locations

140

Service centers

100

Countries with
Sulzer presence



Chemtech

We make chemistry happen



Our mission

When superior chemical processing and separation technologies matter most, we enable our customers to operate world-class plants and produce high value products.

Who we are

The Chemtech division is the global market leader in innovative mass transfer, static mixing and polymer solutions for chemicals, petrochemicals, refining and LNG. We are steering the way in ecological solutions such as bio-based chemicals, polymers and fuels, recycling technologies for textiles and plastic as well as carbon capture and utilization/storage, contributing to a circular and sustainable economy. Our product offering ranges from process components to complete process plants and technology licensing.



Chemtech

Separation Technology



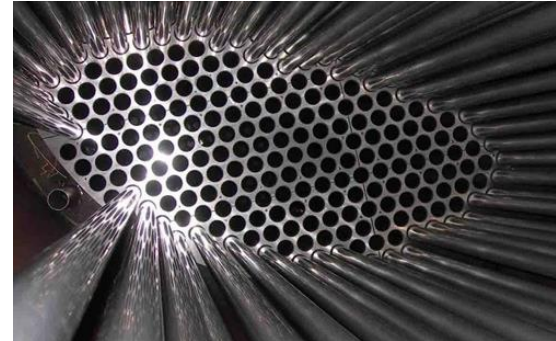
Mass transfer equipment with solutions for all types of separation, from distillation and absorption to phase separation, liquid-liquid extraction.

Tower Field Services



Installation and upgrade services for key equipment such as separation units, mass transfer components and automated weld overlay waste to energy boilers for the refining, chemical processing and power industries.

Polymer and Fractional Crystallization

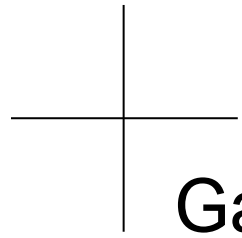


Innovative technologies for crystallization and high-quality polymers – market leader with its unique ring opening polymerization technology for polylactic acid (PLA).

Clean Fuels and Chemical Licensing



Global licensor for process technologies and mass transfer solutions for the refining, chemical, petrochemical and gas processing industries to optimize efficiency and capacity, reduce costs and minimize environmental impact.



Gas Solution





Gas to X - technology portfolio

Value adding with side products and minimizing carbon footprint

Methane to Carbon

Decarbonization of methane to produce high value carbon with either energy self-sufficiency or energy efficient co-production of hydrogen with no impact on regional water security



Gas to Liquid

A low-carbon, economical pathway for converting gas into a liquid to be used as synthetic oil, liquid fuel or aromatics, eliminating the need for gas flaring



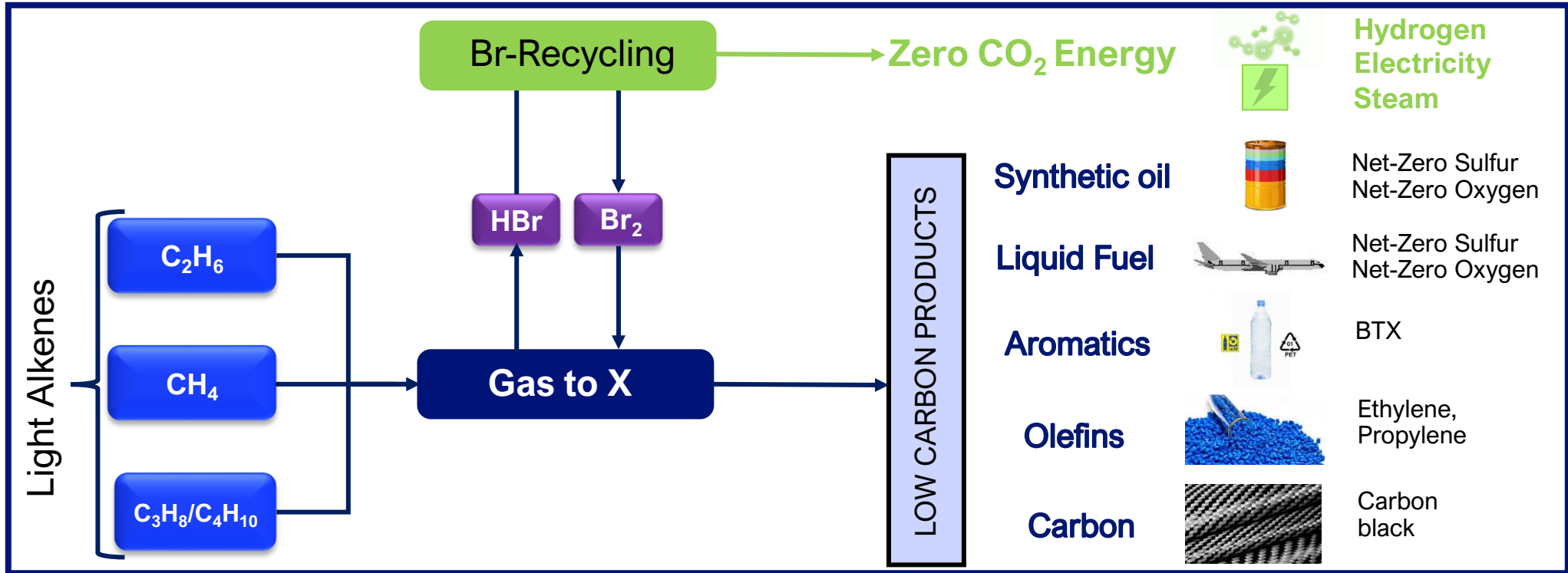
Propane to Propylene

A low-carbon pathway for the production of propylene from propane that is attractive for all feed volumes but especially for small and medium feedstock sources





Gas to X in a nutshell



> Gas to X – A universal technology portfolio for the monetization of light alkanes



Global Technology Partner

Optimized SULZER process and design packages



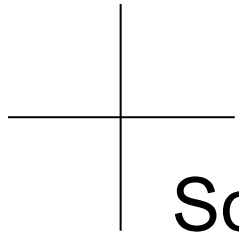
Realization in close cooperation with

- regional EPC's
- regional equipment suppliers

We provide

- Process Design Package
- Services supporting EPC
- Operators Training
- Proprietary Equipment *
- Process License with Process Performance Guarantee *

* subject to separate contractual agreements



Solutions for Crude Oil Refinery

Upgrading of side products



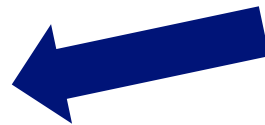


Focus on lights stream

Added value with byproducts

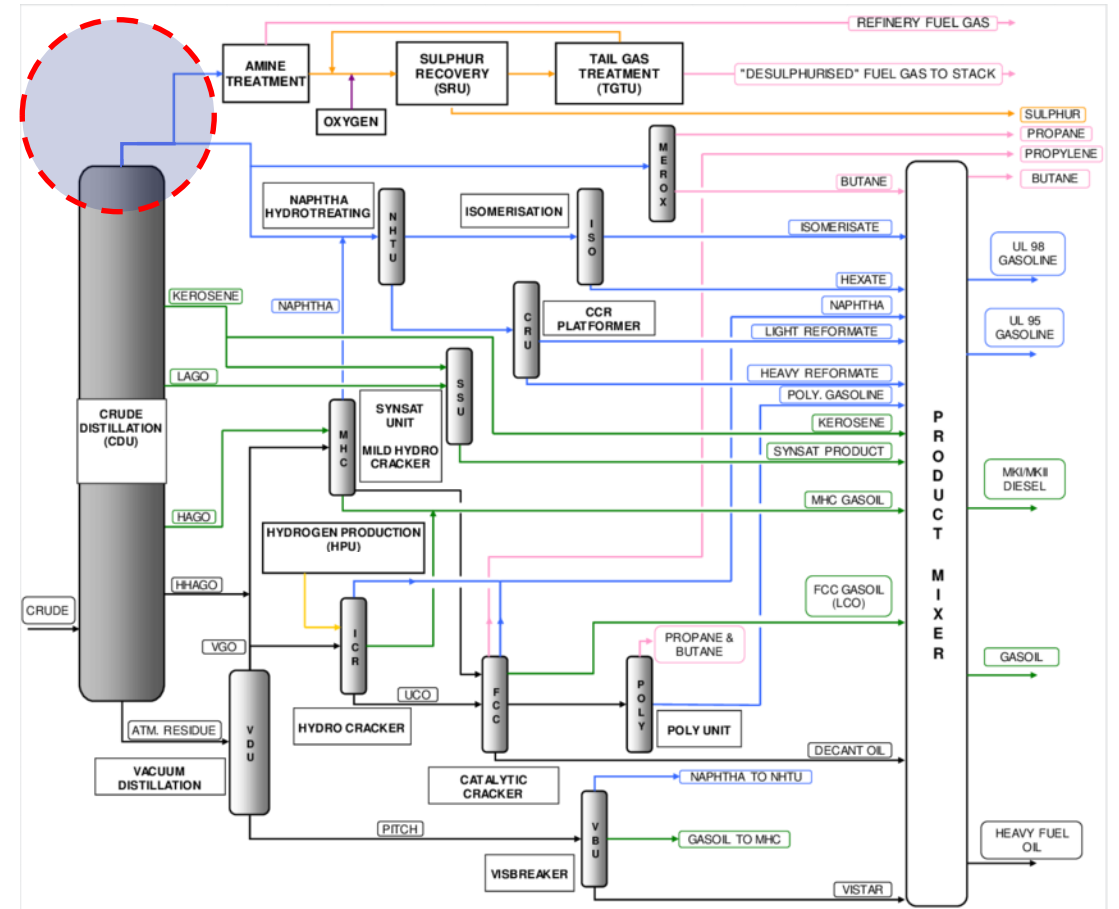
Typical Composition of Refinery Fuel Gas

Component	Mol%
H ₂	20
CH ₄	45
C ₂ H ₆	10
C ₃ H ₈	10
C ₄ +	15



Feed for G2X technologies and products

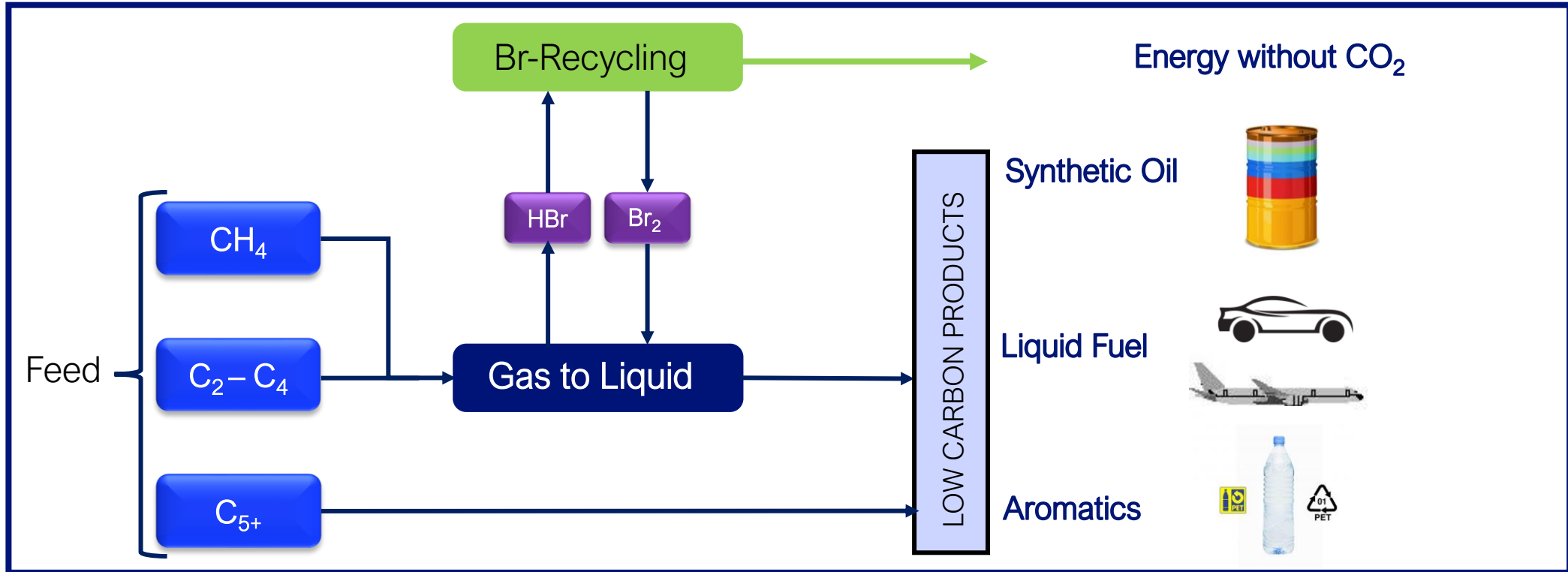
- CH₄ – C₄H₁₀ for Gas to Liquid - GTL
- C₃H₈ for Propane to Propylene – P2P
- CH₄ for Methane to Carbon – M2C
- any Sulphur for Sulphur to Energy – S2E





Gas to Liquid

Monetization of non-condensables by conversion to a C5+ liquid

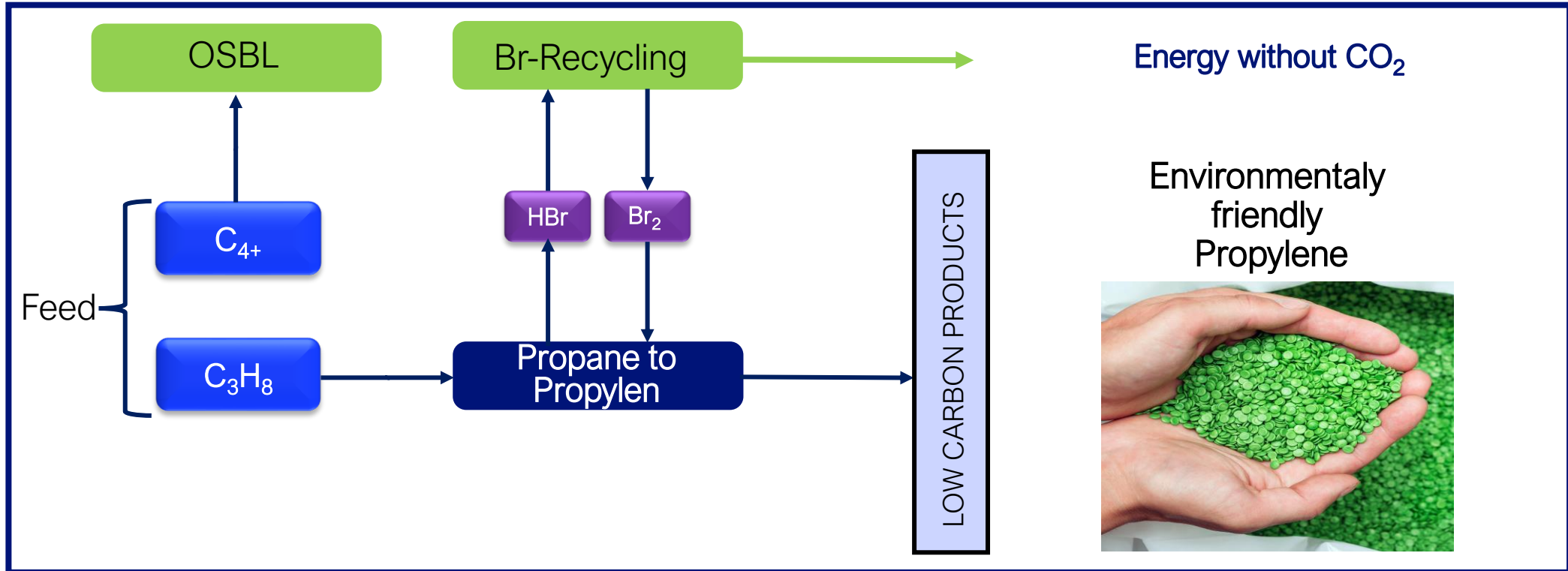


> Gas to Liquid – A universal technology portfolio for the monetization of light alkanes



Propane to Propylene

Monetization by value enhancing of propane

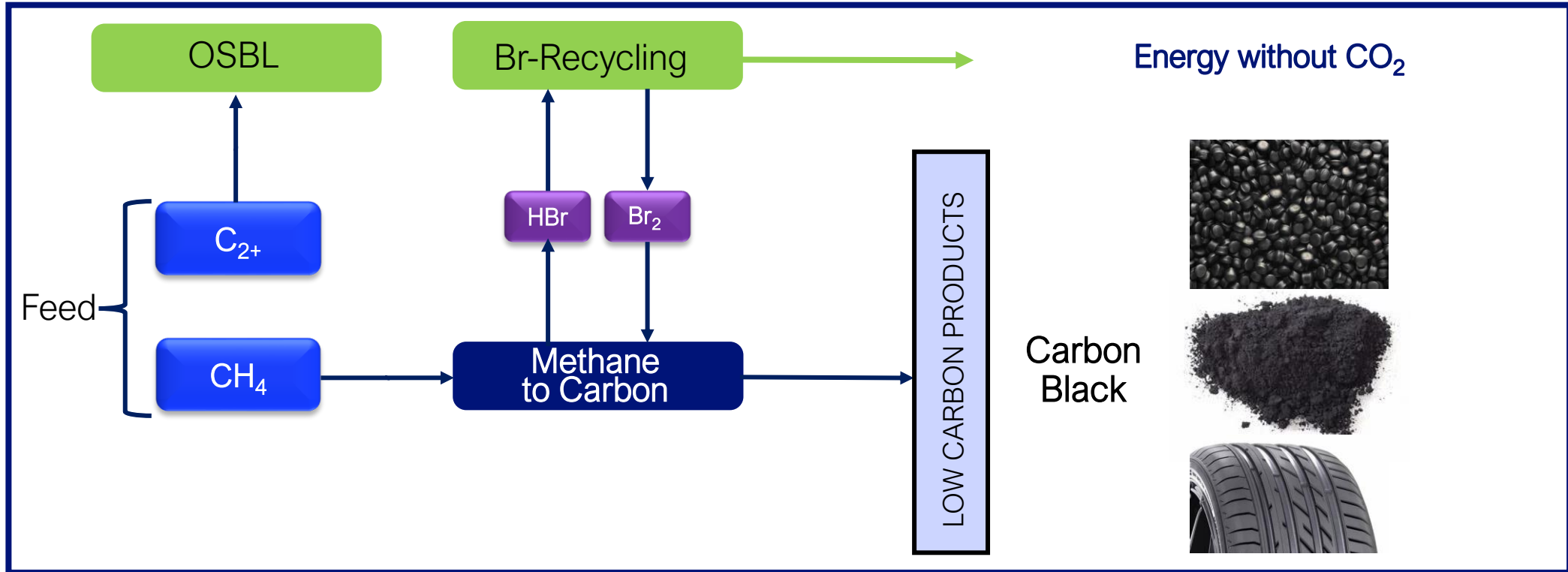


> Propane to Propylene – A technology for significant value enhancement of refinery propane



Methane to Carbon

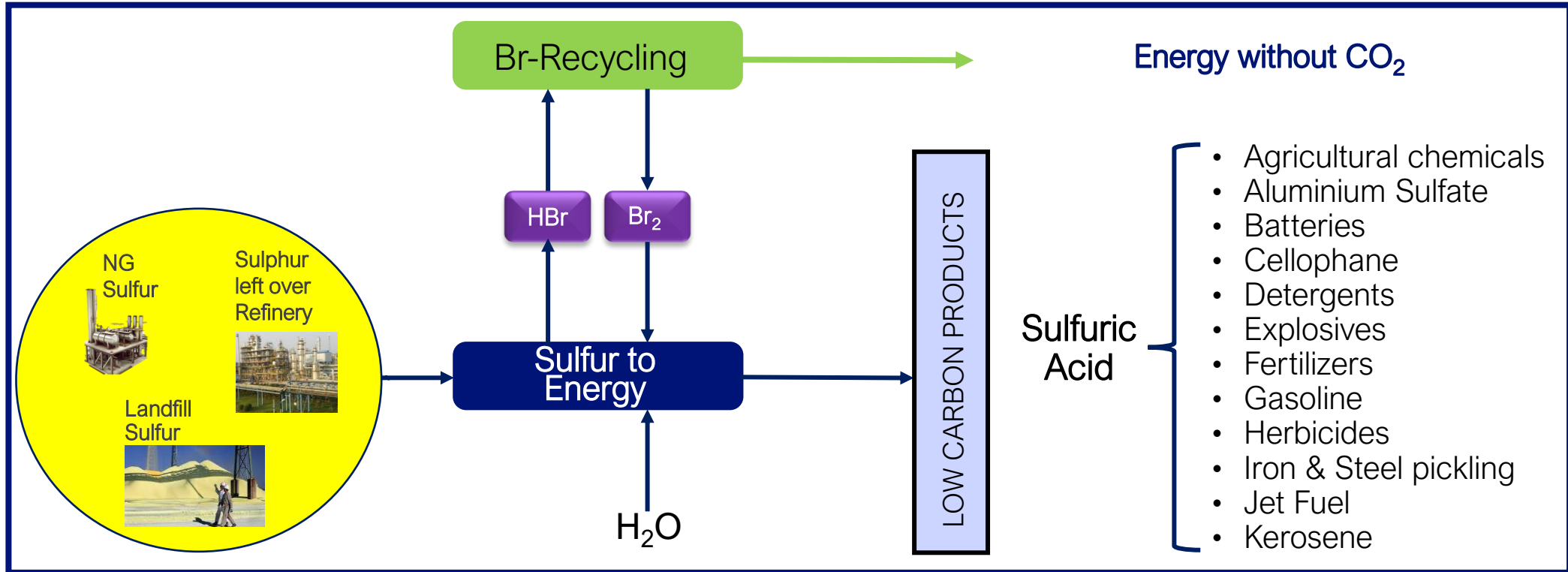
Monetization by decarbonization of methane



> Methane to Carbon – A modern technology for profitable gas decarbonization

Sulphur to Energy

Monetization by use of sulfur-containing streams



> Sulfur to Energy - A modern technology for profitable use of sulfur residues



Contact



Clean Fuels and Chemical Licensing



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