

SULZER



Gas Solution for Associated Petroleum Gas (APG)

July 12. 2023





Disclaimer

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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.



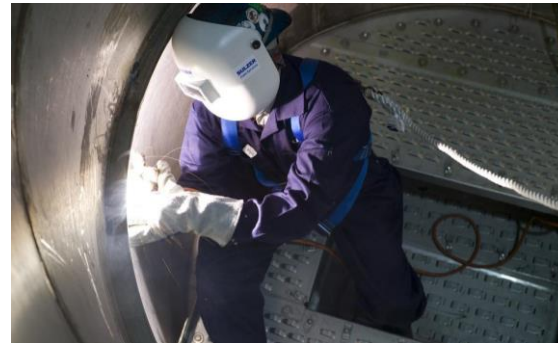
Chemtech

Separation Technology



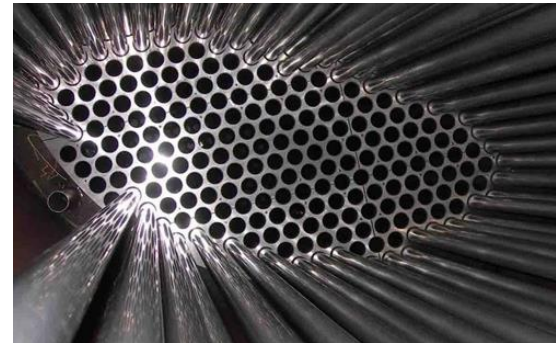
Mass transfer equipment with solutions for all types of separation, from distillation and absorption to phase separation, liquid-liquid extraction.

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

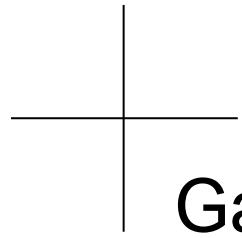


Innovative technologies for crystallization and high-quality polymers – market leader with its unique ring opening polymerization technology for polylactic acid (PLA).

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



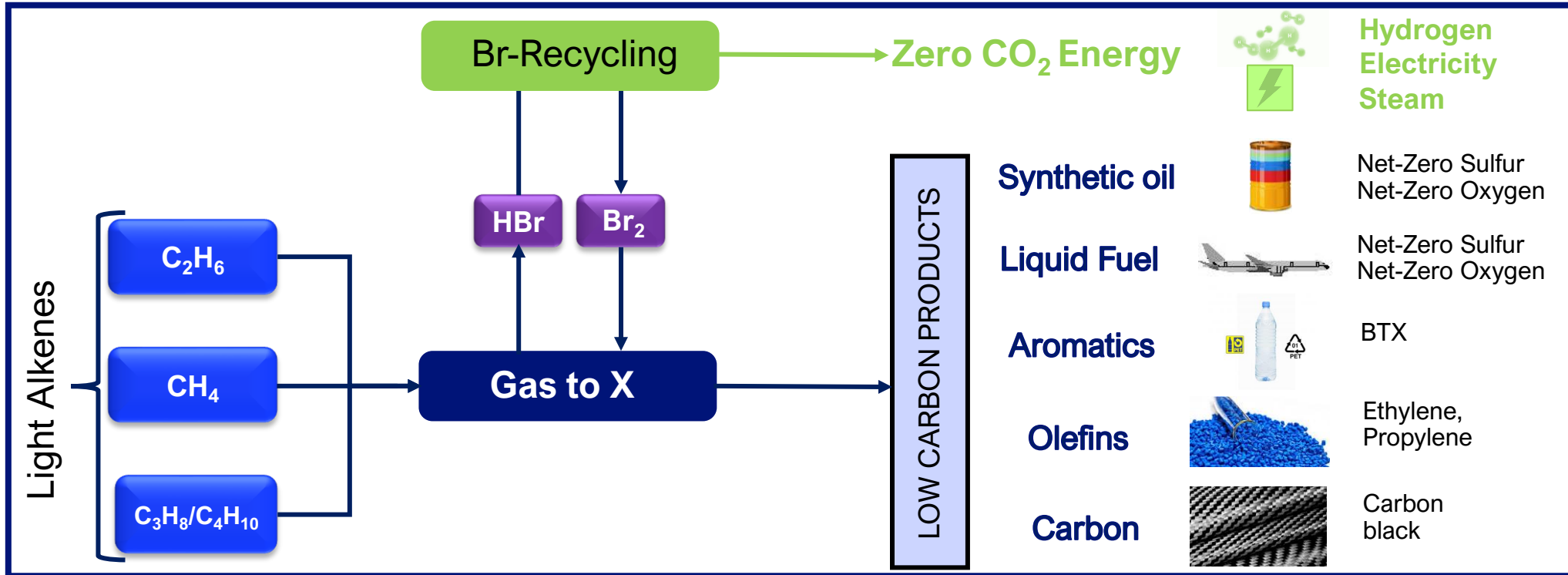
Propane to Propylene

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



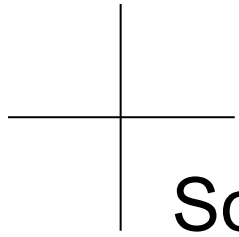
Realization in close cooperation with

- 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 Associated Petroleum Gas





Upgrading of associated petroleum gas (APG)

Monetization of value instead of flaring

Typical Composition of APG

Component	Mol%
CH ₄	81
C ₂ H ₆	5.5
C ₃ H ₈	6.6
C ₄ H ₁₀	4.0
C ₅ H ₁₂	1.4

Feed for G2X technologies and products

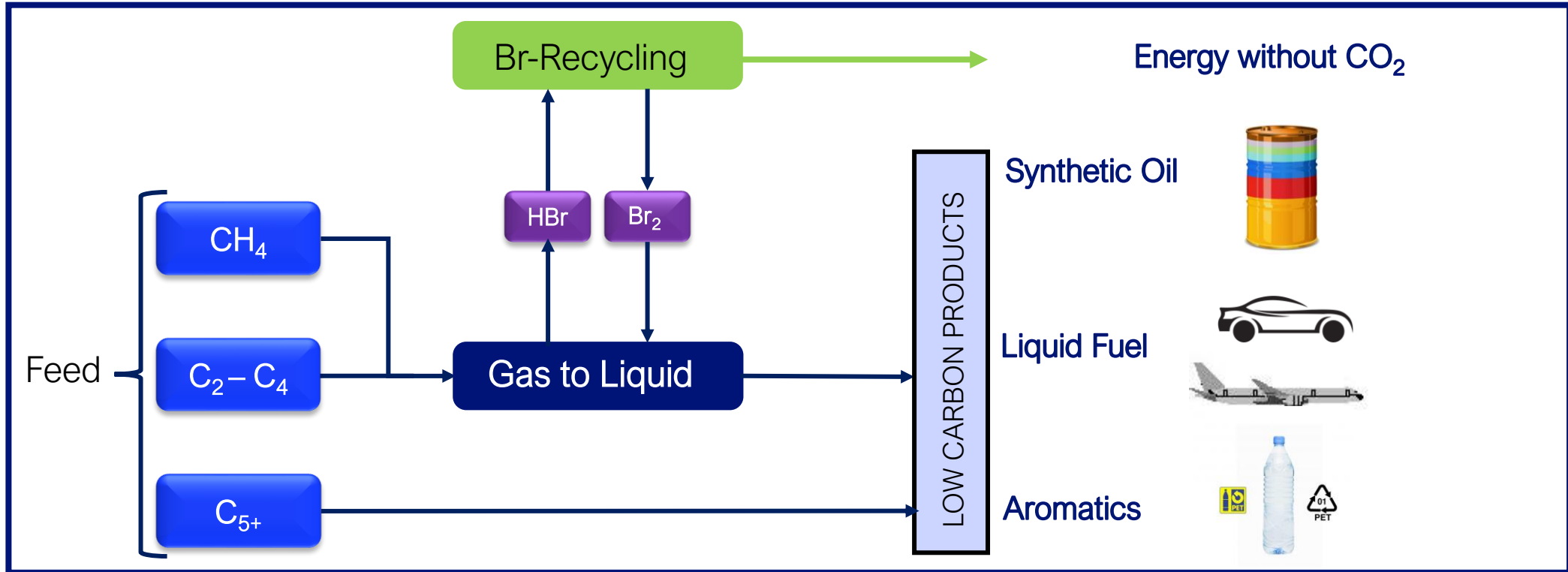
- CH₄ – C₅H₁₂ for Gas to Liquid
- CH₄ for Methane to Carbon
- any Sulphur for Sulphur to Energy





Gas to Liquid

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

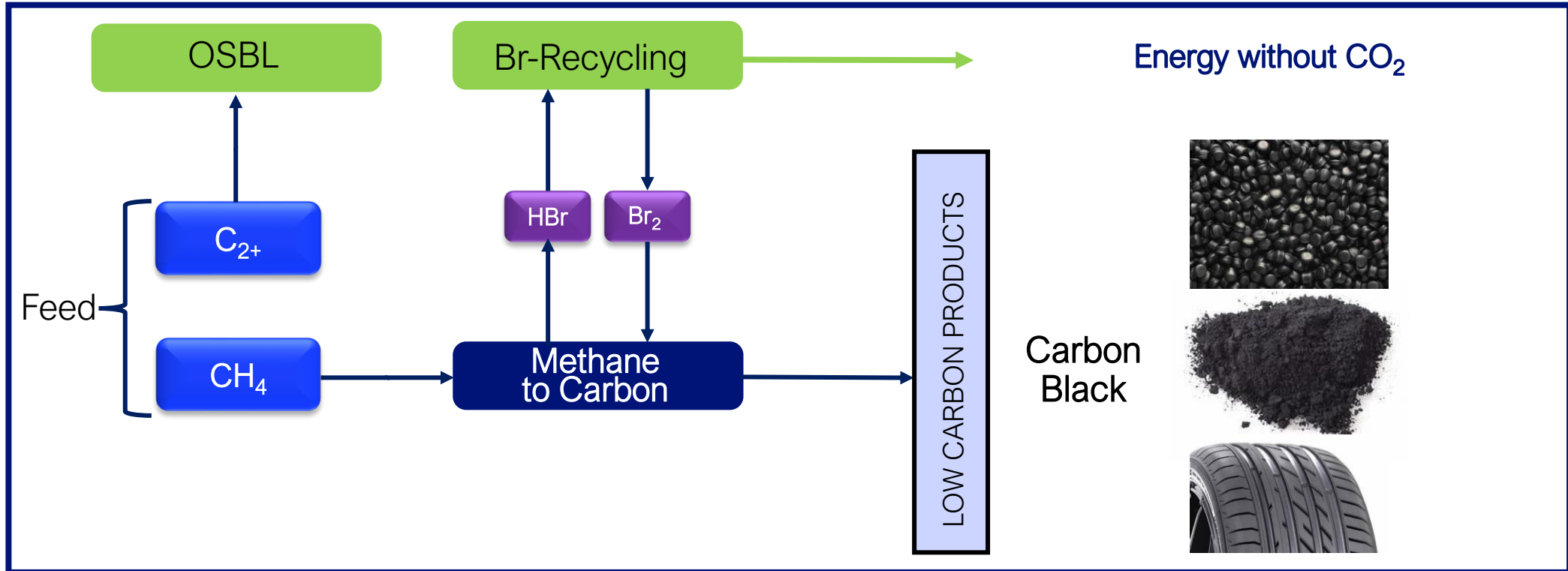


> Gas to Liquid – A universal technology for the monetization of light alkanes



Methane to Carbon

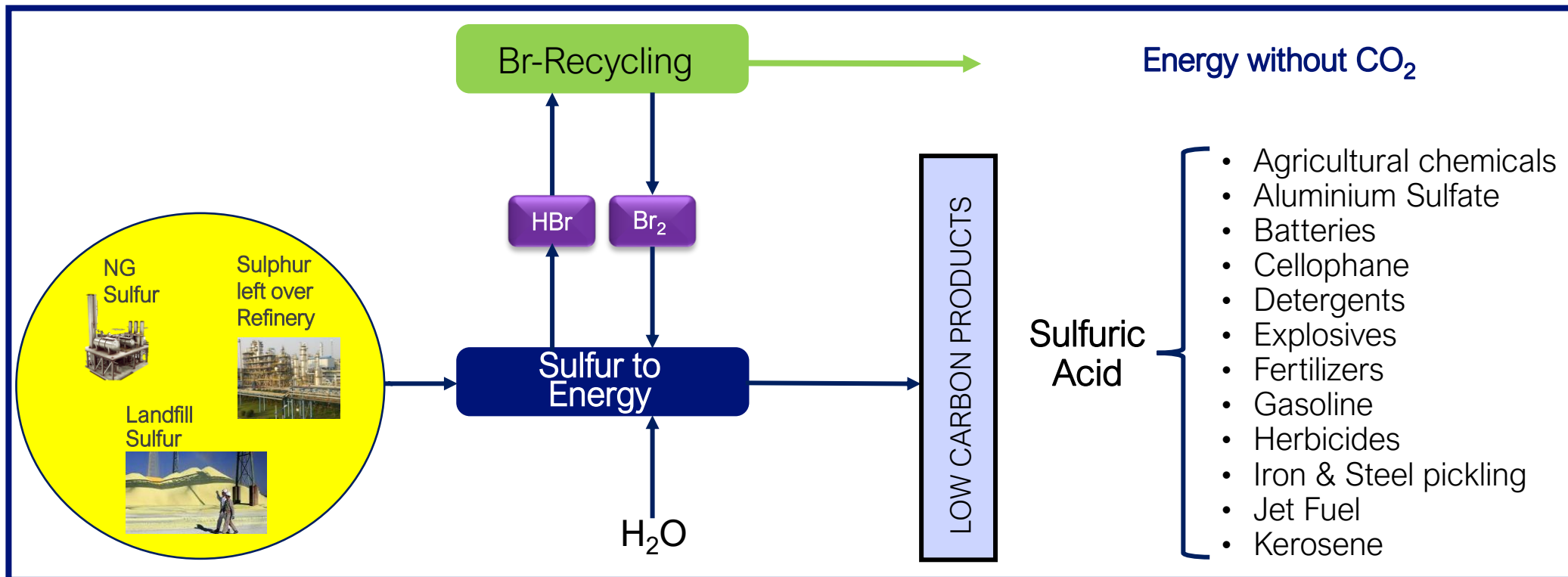
Monetization by decarbonization of methane



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

Sulphur to Energy

Monetization by use of sulfur-containing streams

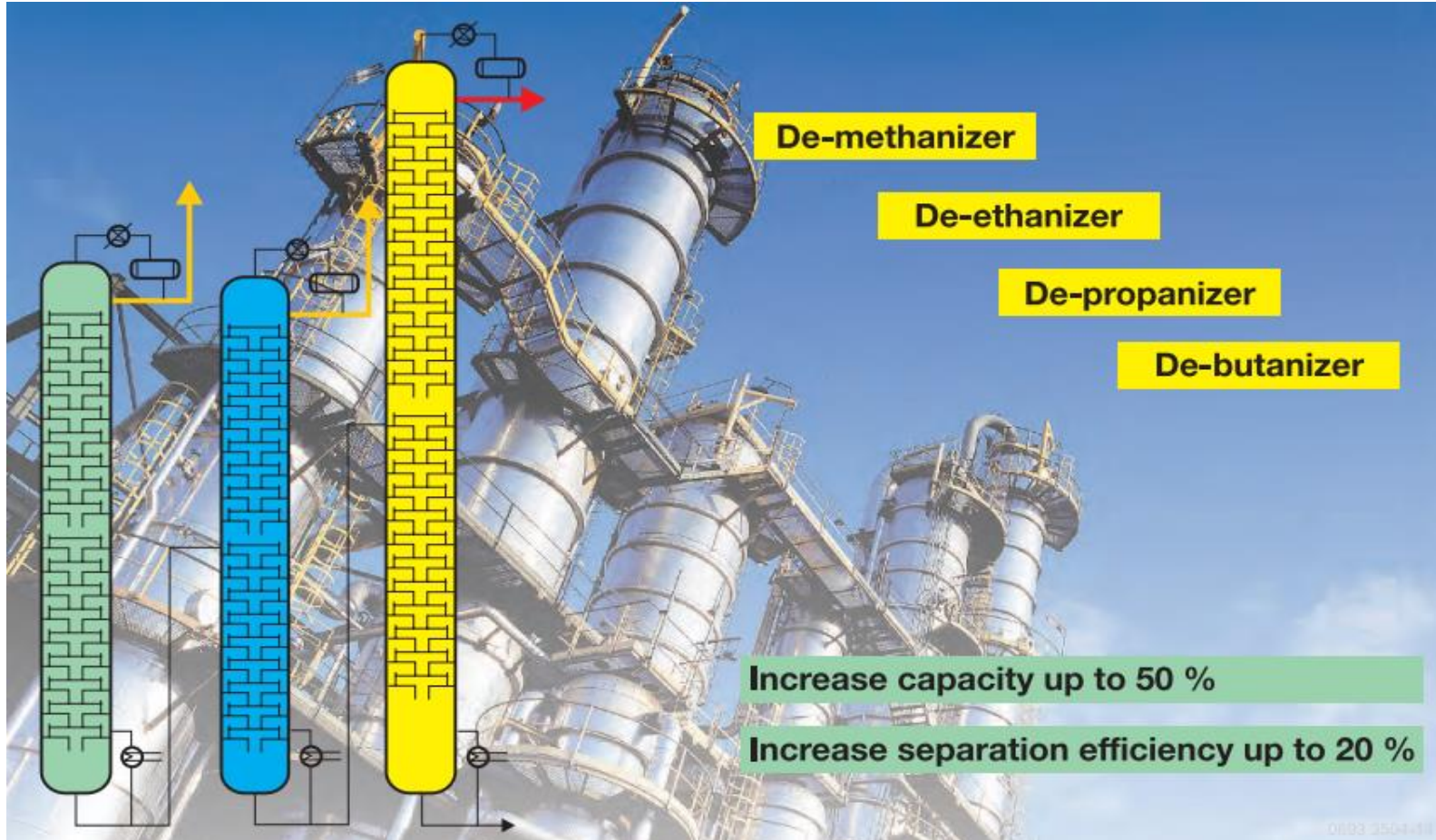


> Sulfur to Energy - A modern technology for profitable use of sulfur residues



Gas Processing

Gas Fractionation



Sulzer is the market leader with a vast experience and expertise providing:

- Process Engineering
- Proprietary Equipment
- Process License
- Process Guarantees

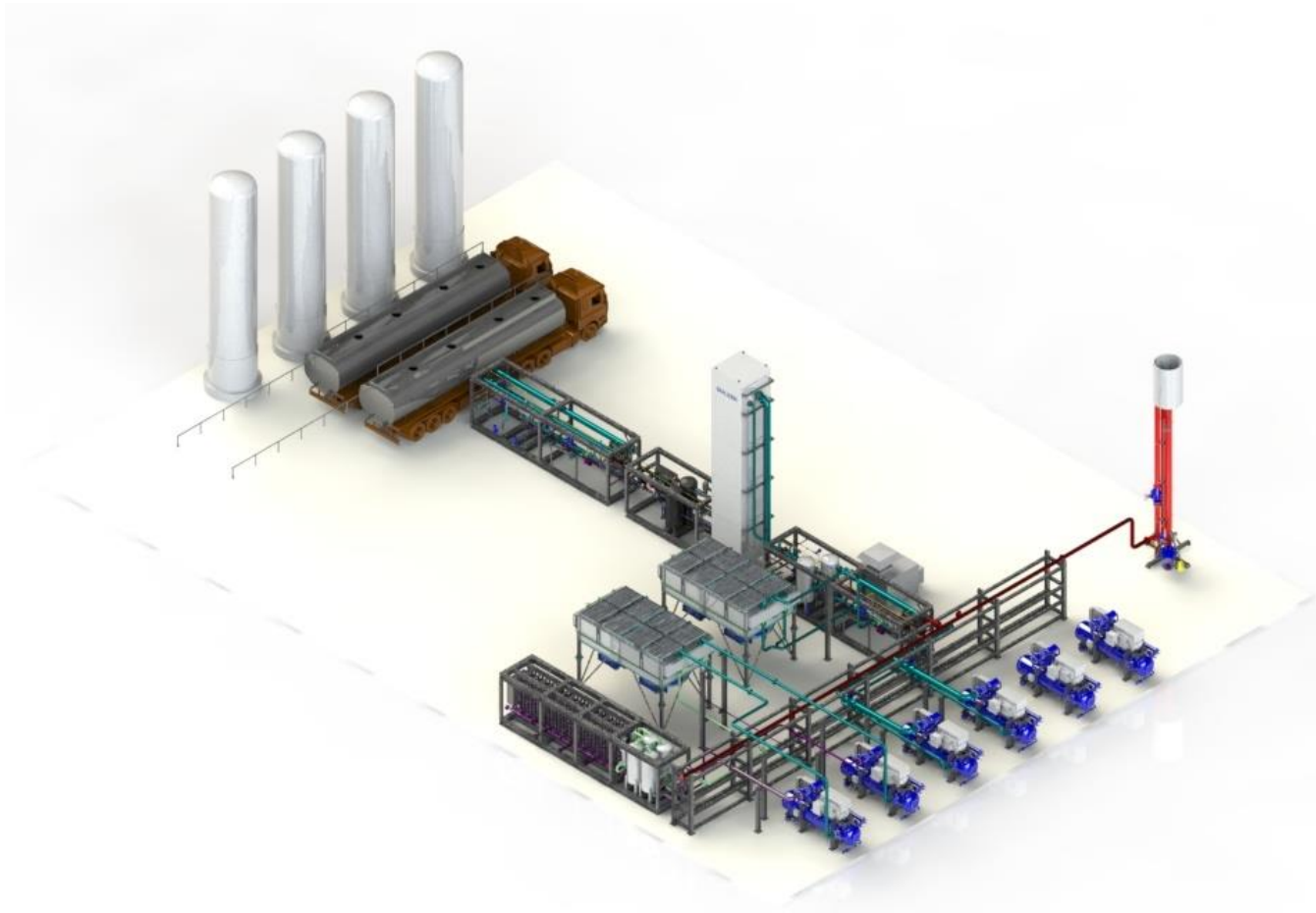
for tailormade gas fractionation according client's objectives.

Sulzer provides proprietary equipment up to modular skids containing engineered equipment.



Natural Gas Liquefaction

Skid Mounted LNG Plant from methane feed to tanker filling nozzle



- all intelligence on skids.
- no off-skid transmitters or valves.
- no transmitters or valves shipped loose or supplied by others.
- mechanical on-site construction limited to pre-fabricated spool pieces
- on-site control wiring limited to 5 ethernet connections.
- all skids including controls are FAT prior to shipping.

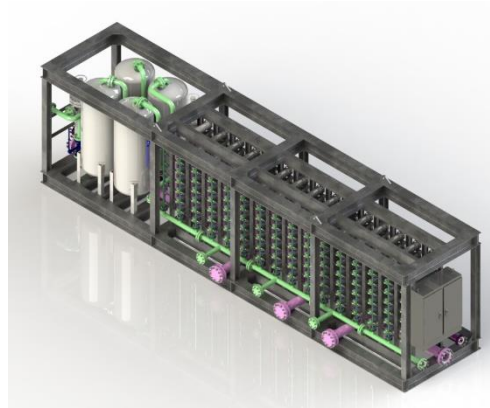


Modularity for LNG from 0,5 to 15t/h

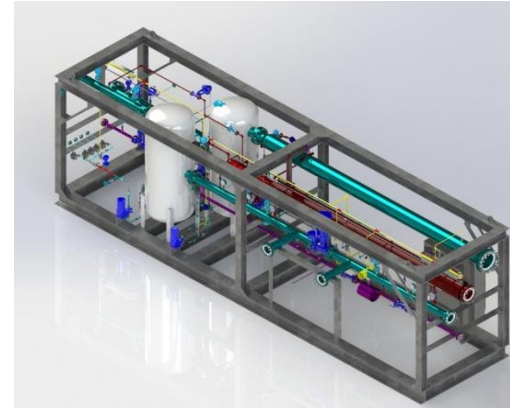
Scrubber for Amine or Glycol Treatment



Membrane Pre-Treatment



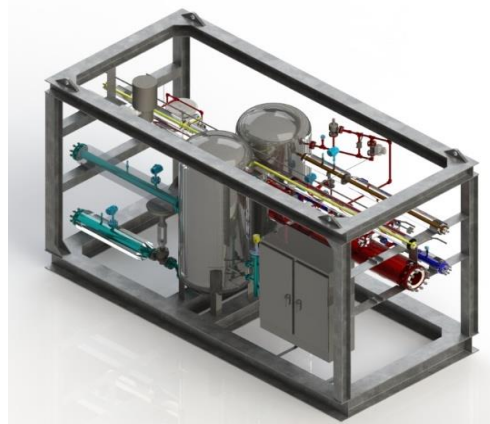
Refrigerant Auxiliary



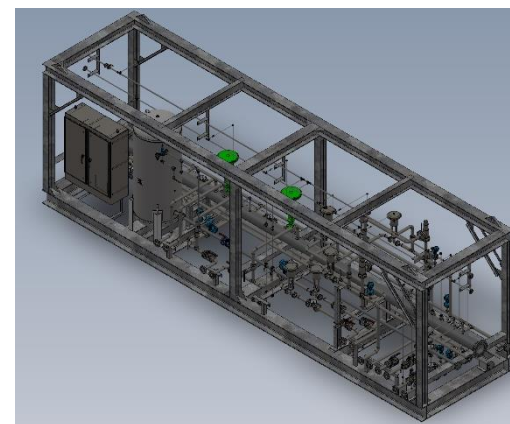
Cold Box



Cryogenic Skid



Product Management





Contact



Clean Fuels and Chemical Licensing



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