

CHEMISTRY THAT MATTERS™



CO₂ CAPTURE AND UTILIZATION AT SABIC

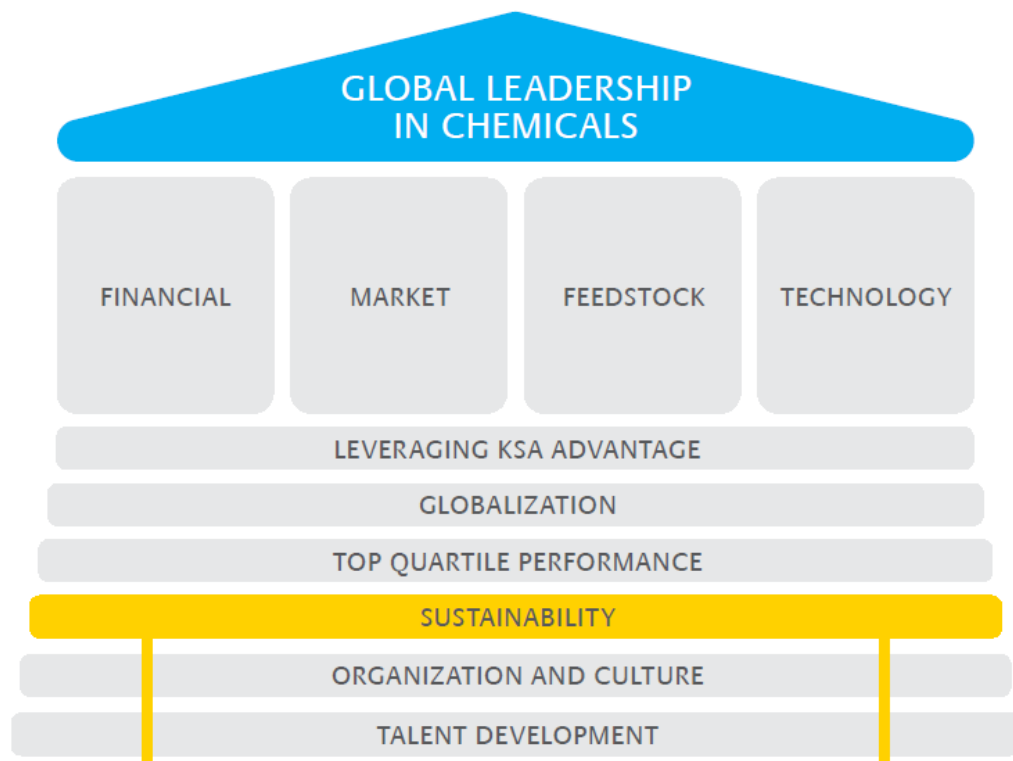
UPDATE ON 2015 CSLF RECOGNIZED PROJECT: CO₂ NETWORK PROJECT

Pieter Smeets

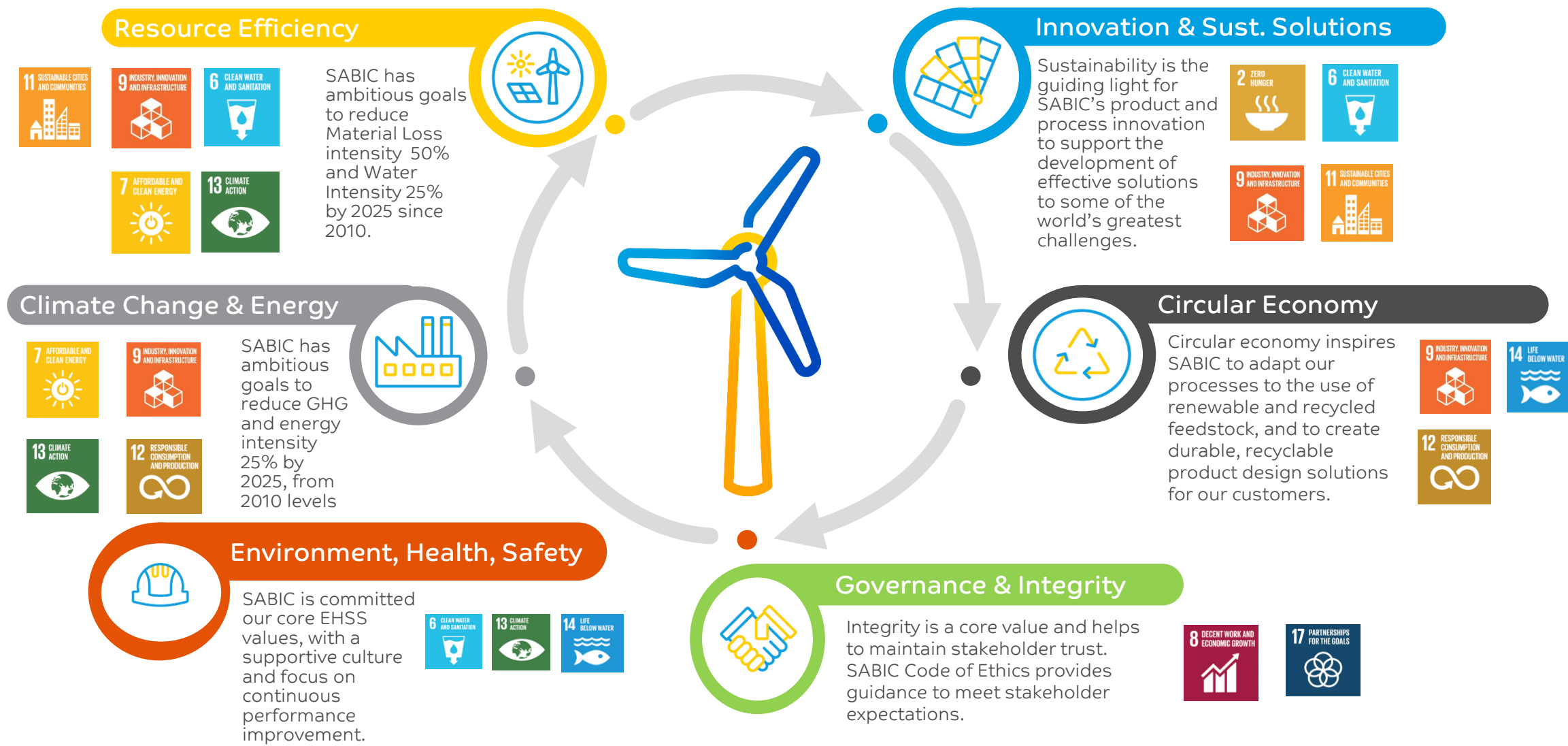
CSLF Technical Group meeting, Riyadh, Saudi Arabia, September 30, 2020



SABIC 2025 STRATEGY & SUSTAINABILITY GOVERNANCE



SABIC SUSTAINABILITY PRIORITIES



* Baseline is year 2010 / Retain intensity targets 2010-2025 based on external Sales

OUR SUSTAINABILITY STRATEGY: MAIN FOCUS AREAS AND ACHIEVEMENTS IN 2019



Innovation and Sustainability Solutions



88

Total Sustainability Solutions

EHSS and Product Safety



↑ 33%

Total Recordable Incident Rate

Resource and Energy Efficiency*

↓ 13.57%

GHG Emissions Intensity

↓ 9.45%

Energy Intensity

Human Capital Development



15,000+

Training program participants

Supply Chain



93%_{solids} 100%_{liquids}

Safety and Quality Assessment System (SQAS)

↓ 41.54%

Material-loss Intensity

↓ 47.83%

Reduction in Flaring Emissions

↓ 12.62%

Water Intensity

↑ 3.44 million MT

Total Current CO₂ Utilization



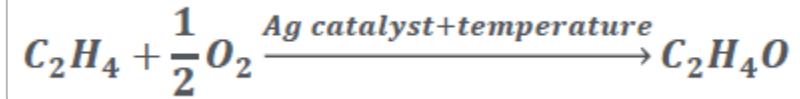
Sustainability Report 2019

Learn more about SABIC's sustainability facts and figures.

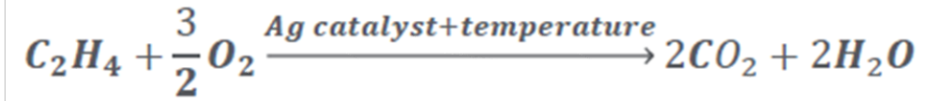
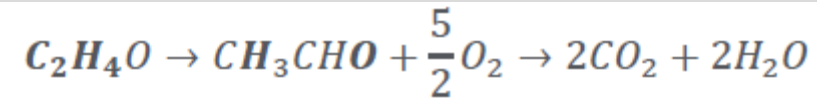
▶ [Access Report here](#)

CO₂ UTILIZATION, AN OPPORTUNITY FOR CO₂ FROM EO

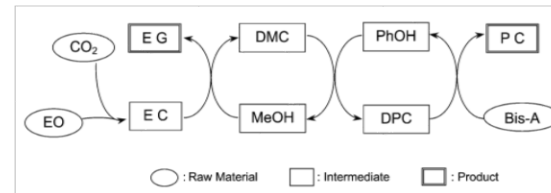
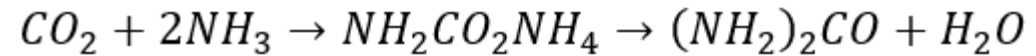
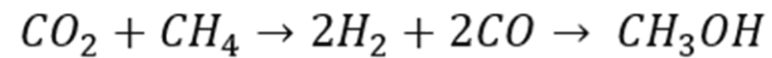
Ethylene oxide reaction:



Unwanted side reactions:



Converting waste CO₂ into valuable products:



CO₂ CAPTURE AND PURIFICATION PLANT

CO₂ capture plant



UNITED, Jubail, Saudi Arabia

- Drying
- Compression
- Contaminants removal
- Distribution to integrated CO₂ network

WORLD'S LARGEST CO₂ PURIFICATION AND LIQUEFACTION PLANT

BUILT AT SABIC'S AFFILIATE, UNITED

Supplying CO₂ for converting into valuable chemicals

- Urea
- Methanol
- Oxo-alcohol

For applications in the food and beverage industry

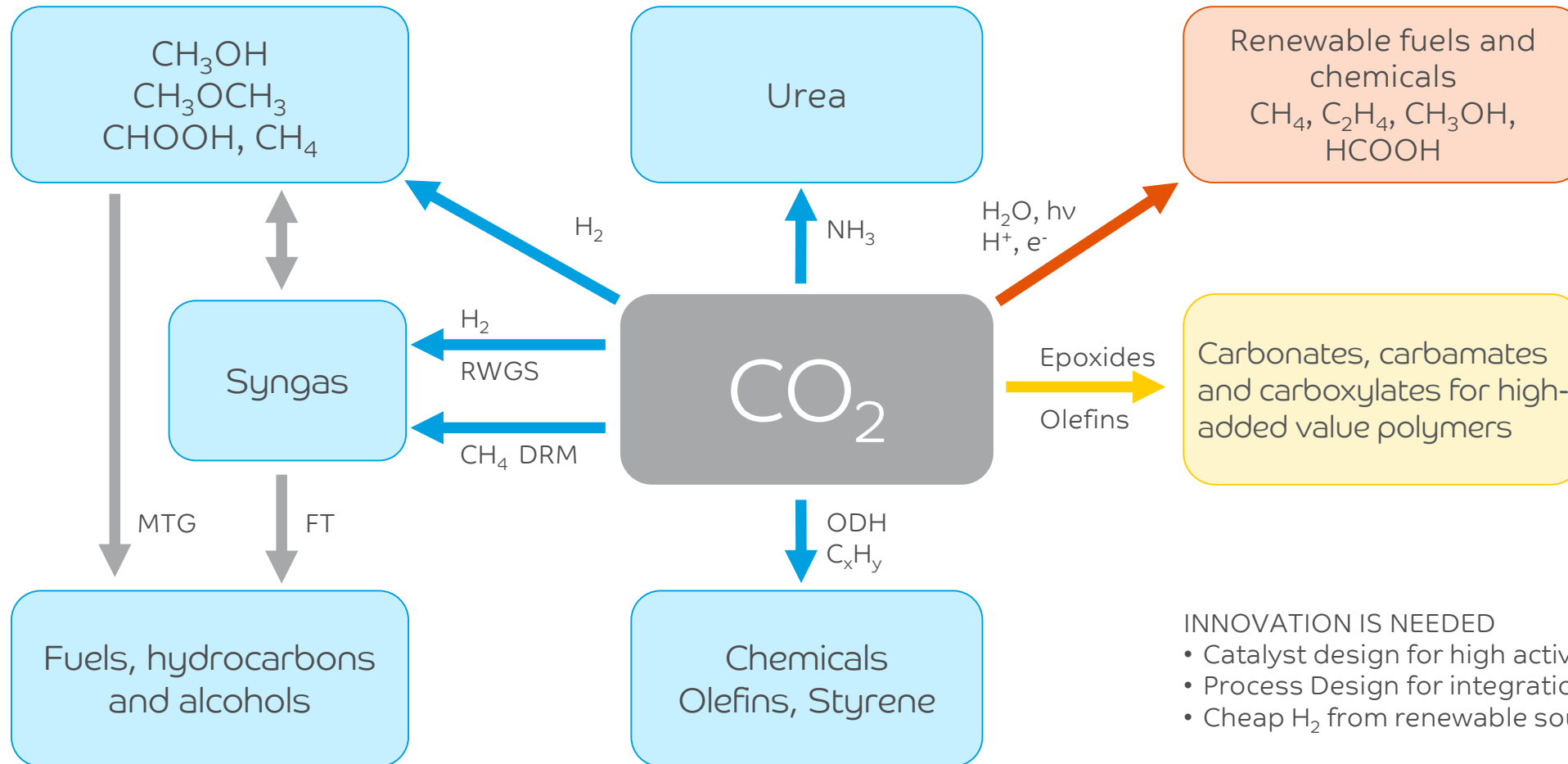
500,000 MT

annually of CO₂ can be purified



➤ Continues to recover more CO₂ as feedstock for valuable products such as urea, methanol and liquid CO₂ for the food industry

CO₂ REACTION PATHWAYS FOR CHEMICAL INDUSTRY



INNOVATION IS NEEDED

- Catalyst design for high activity and stability
- Process Design for integration in existing processes
- Cheap H₂ from renewable source



THANK YOU

