



TECHNOLOGY SOLUTIONS FOR ENERGY TRANSITION

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DR. ROB CRANE
PROCESS INNOVATION & SCALE-UP MANAGER

In 2050 the world will be vastly different

More people, more prosperity, more energy with lower emissions ... yet more work is needed

2B more people on the planet in 2050, and the global economy doubles.

15% more energy is needed to support a growing population with rising living standards – many of whom live in the developing world.

>4x Increase of solar and wind in the total energy mix (generation grows 5X)

54% of the world's energy needs still met by oil and natural gas.

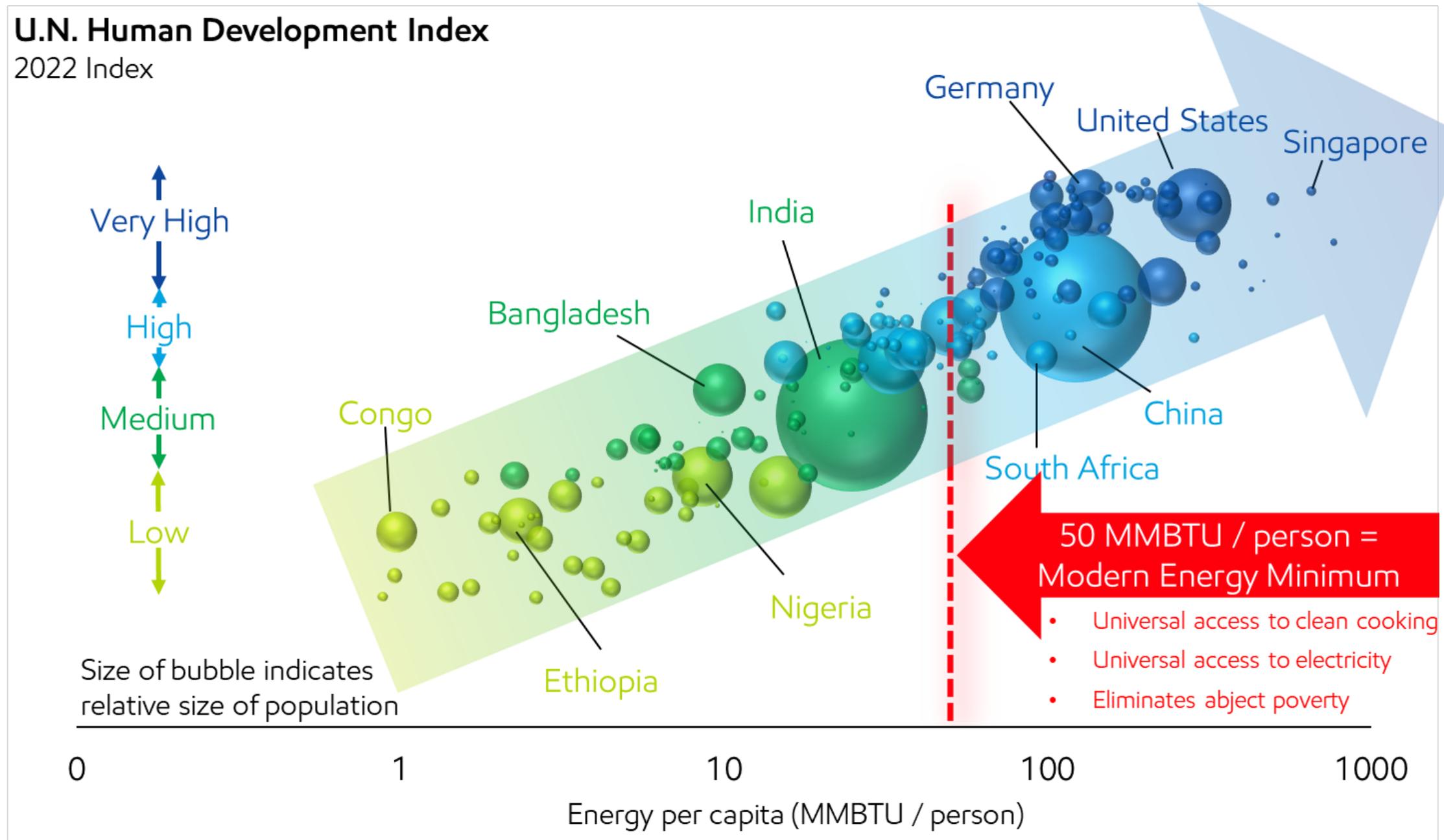
25% decline in emissions by 2050, but more needed to limit warming to below 2°C.

1/2 of society's emissions come from industrial and commercial transportation sectors where carbon capture, hydrogen and biofuels offer viable solutions.

3 key drivers will determine the pace of the energy transition: 1) policy, 2) technology, and 3) market-driven solutions.

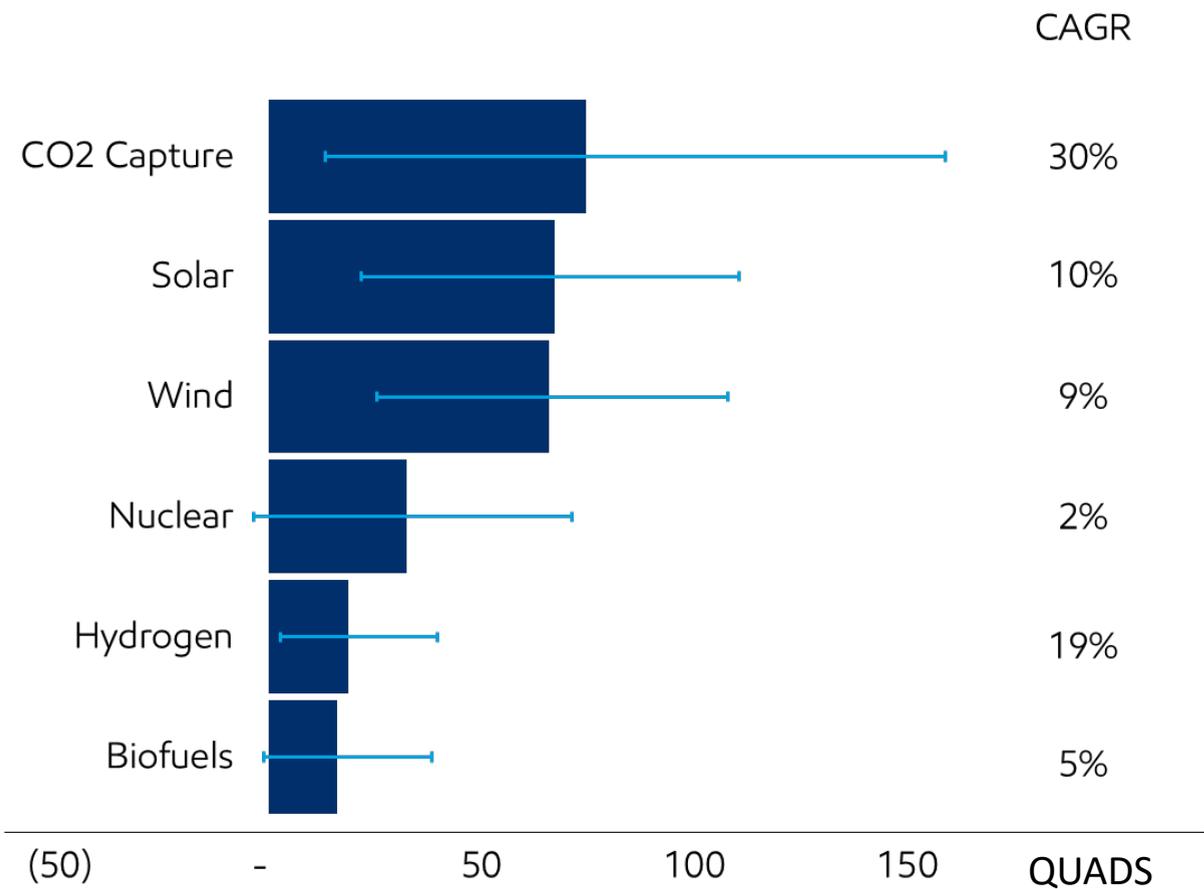
Energy improves quality of life

More than 4 billion people live below modern standards for life expectancy, education, and income



Innovative Solutions and Supportive Policies are Needed to Reach a Lower 2°C Pathway

Growth of lower-carbon solutions between 2020 and 2050 in Lower 2°C scenarios



Source: IPCC Sixth Assessment Report, ExxonMobil analysis
Error bars represent 10th percentile to 90th percentile scenario.

Leverage our strengths to lead energy transition

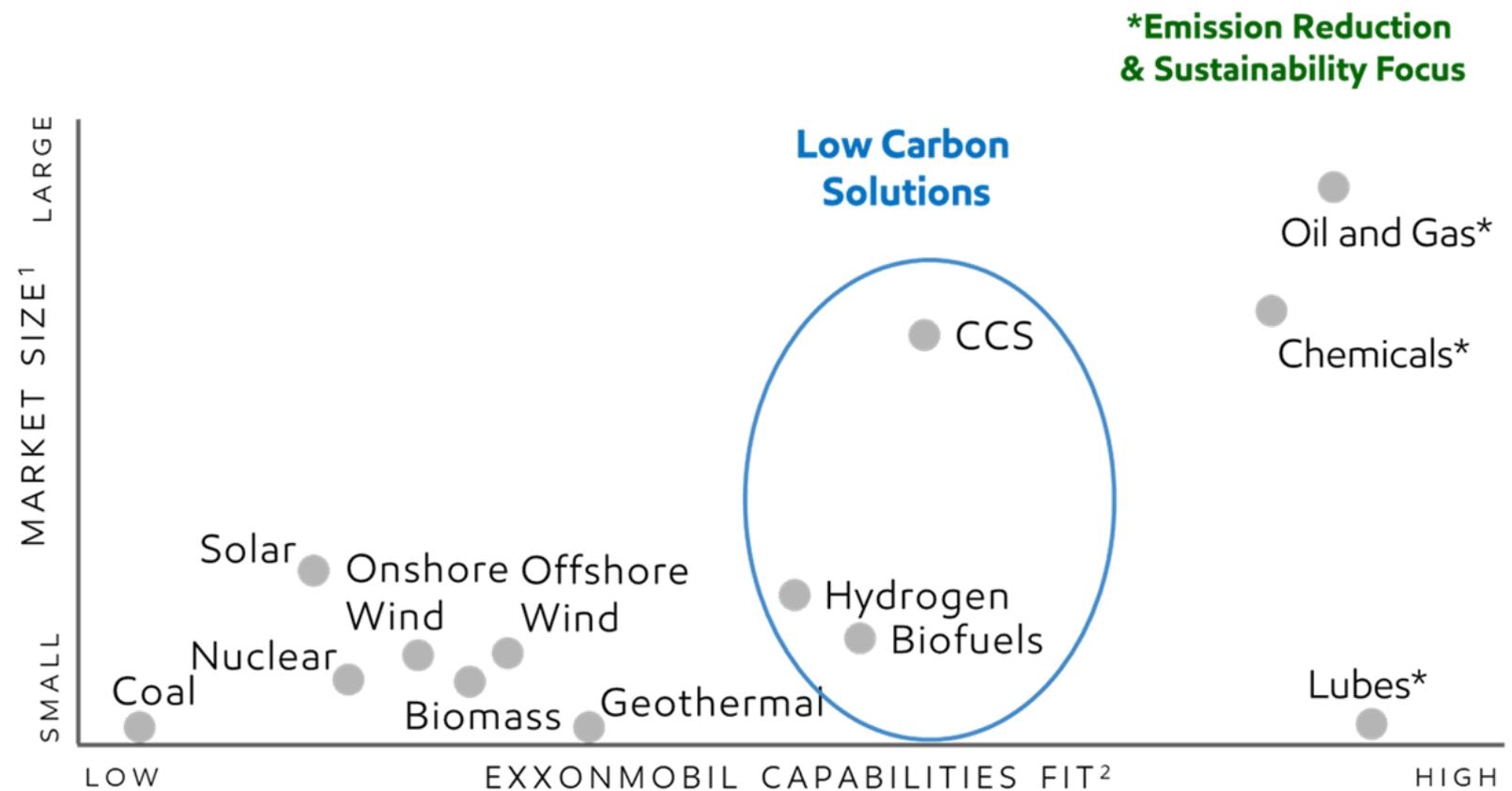


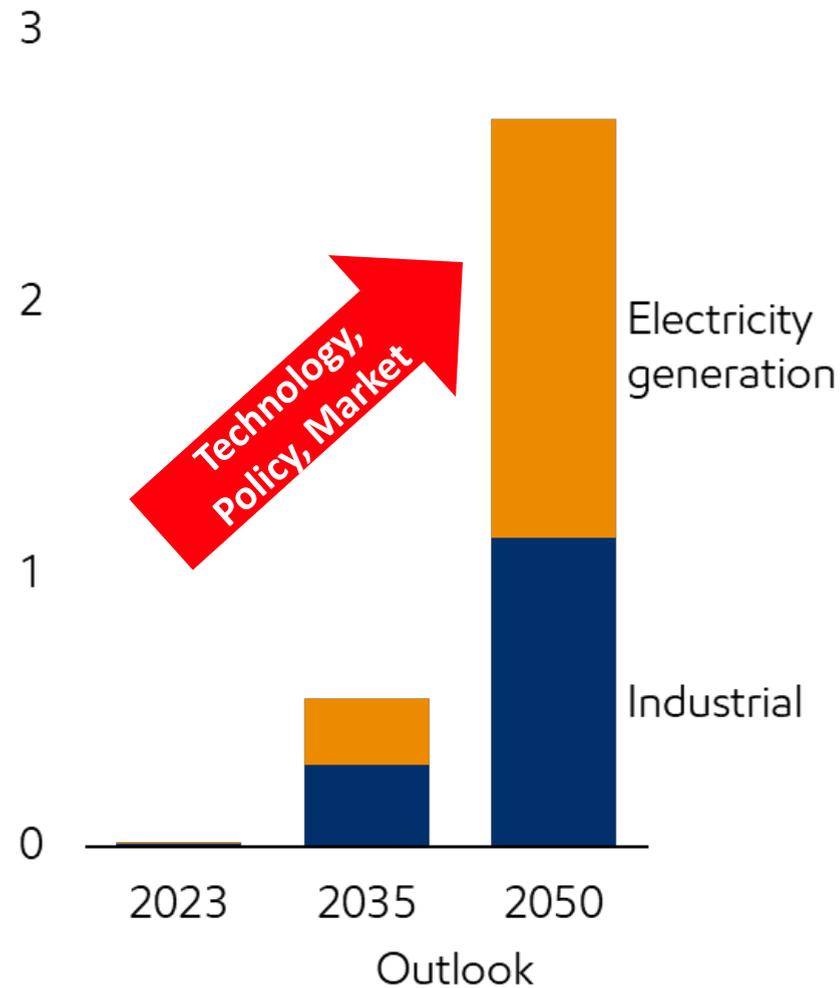
Chart source: ExxonMobil analysis of IPCC SR 1.5 scenario explorer data; and McKinsey & Company report, "The big choices for oil and gas in navigating the energy transition," March 10, 2021. See 2022 Investor Day supplemental Information for footnotes and definitions.

CCS and lower-emission fuels essential for hard-to-decarbonize sectors

Unlike for personal transportation, electrification is ill-suited for commercial transportation and industrial applications

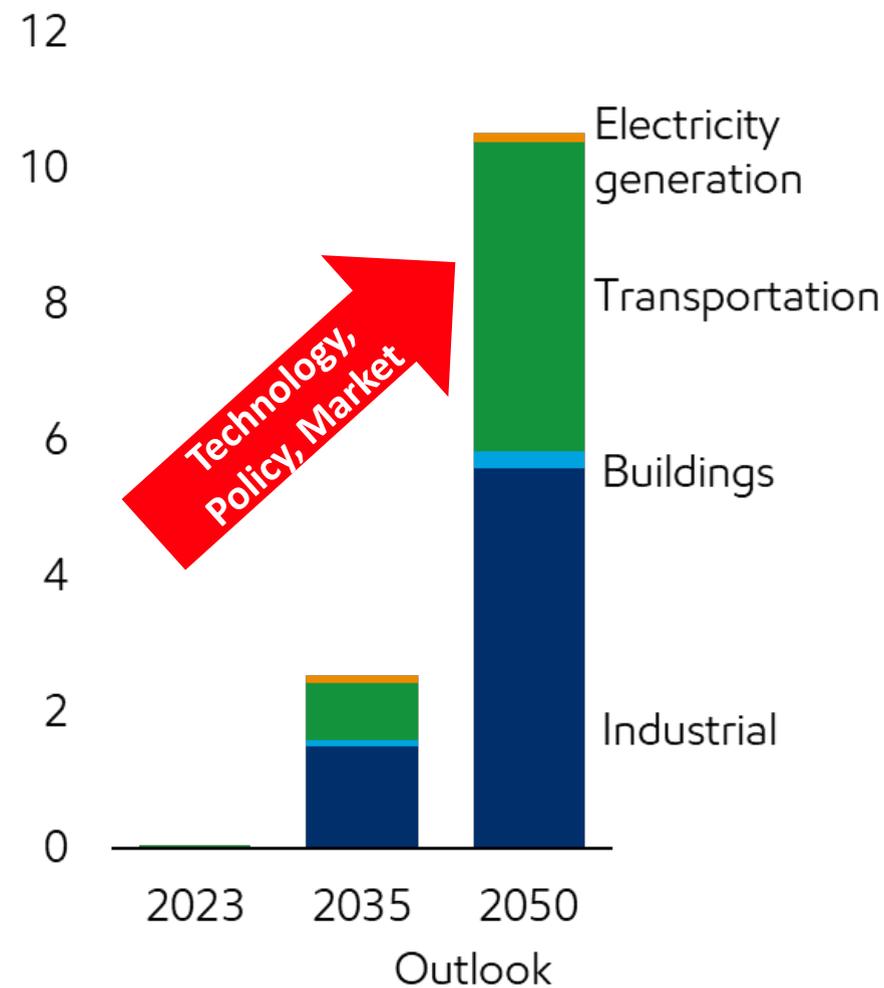
Carbon capture and storage

CO₂ Billion metric tons per year



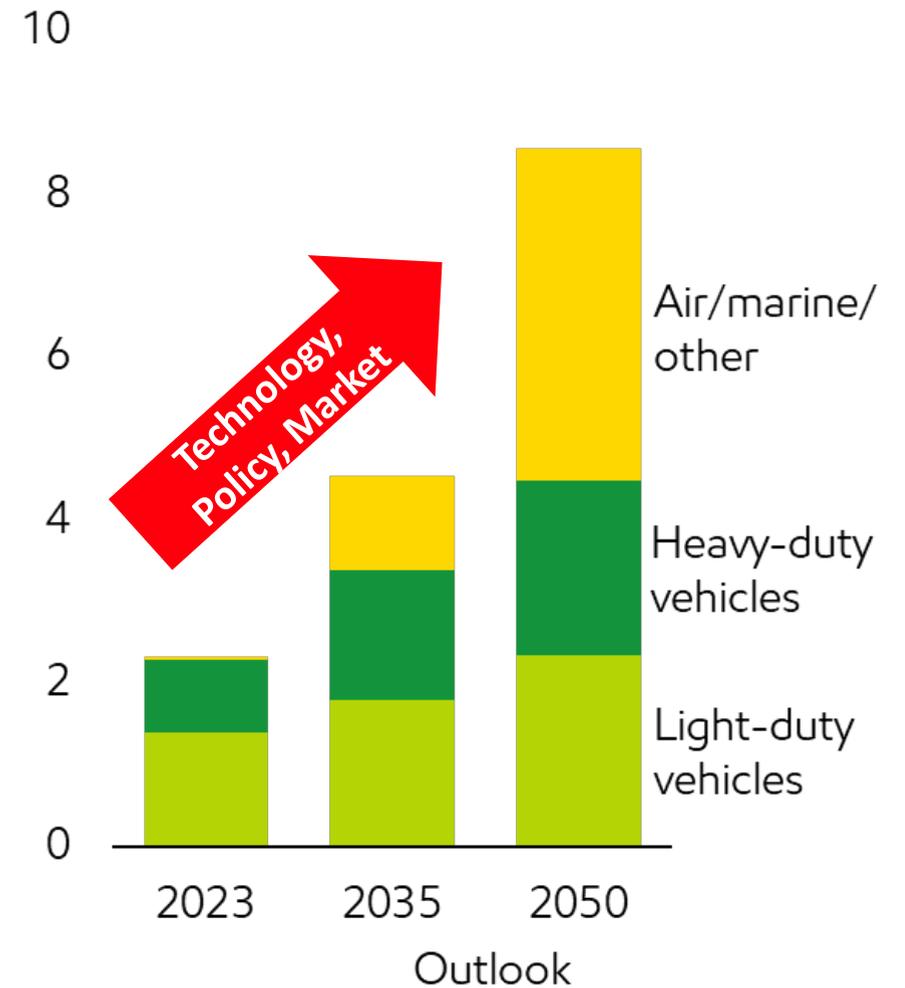
Hydrogen-based fuel use

Quadrillion Btu

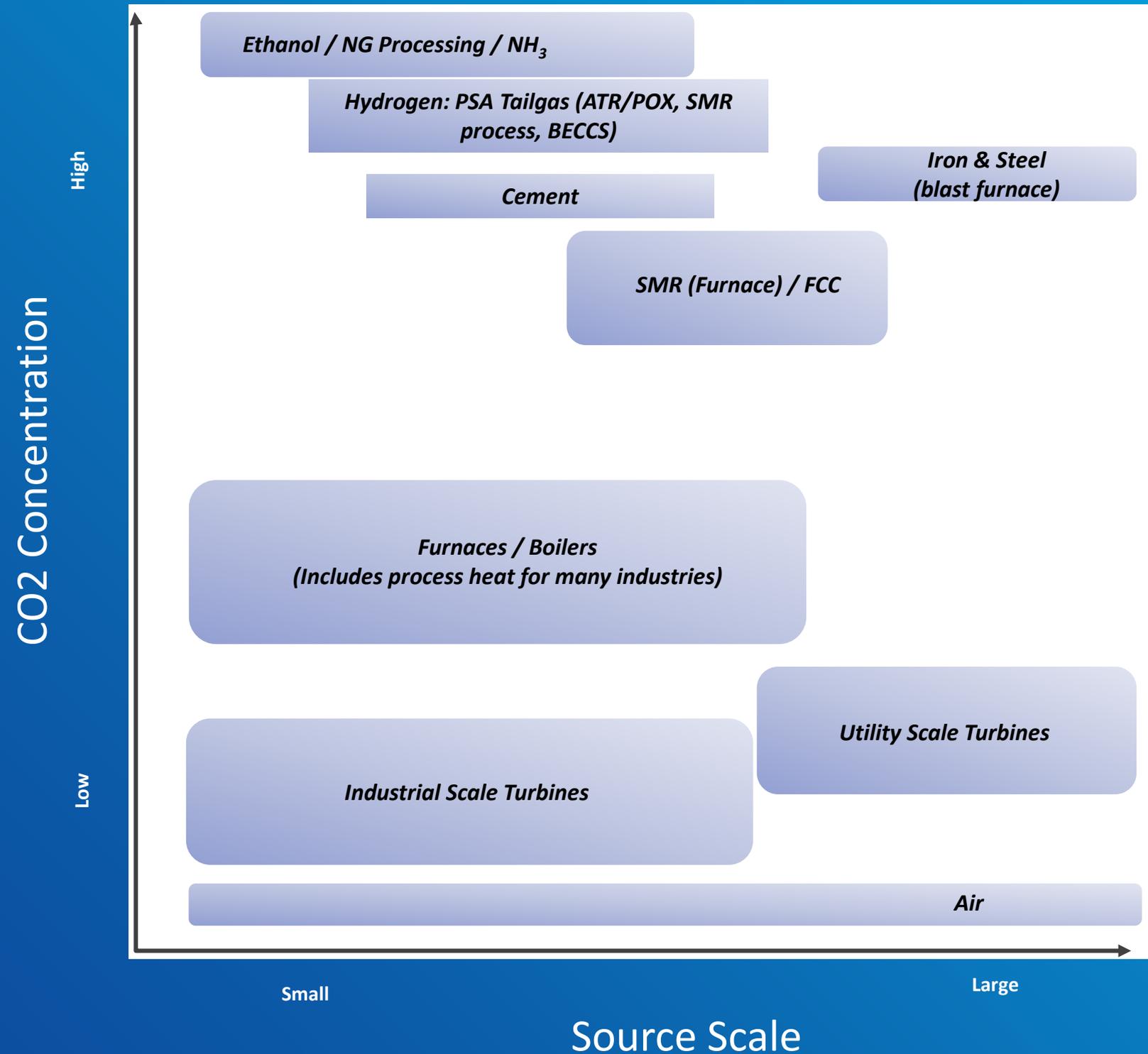


Biofuels use

Million barrels per day of oil equivalent

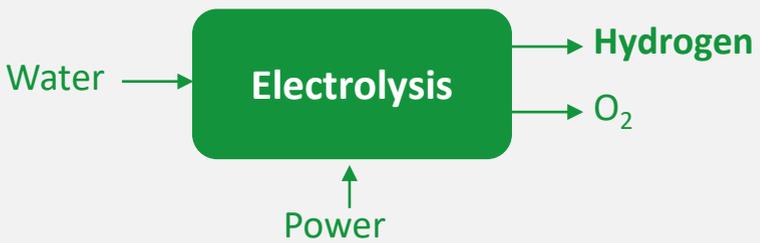


Carbon Capture: Multiple Solutions Needed



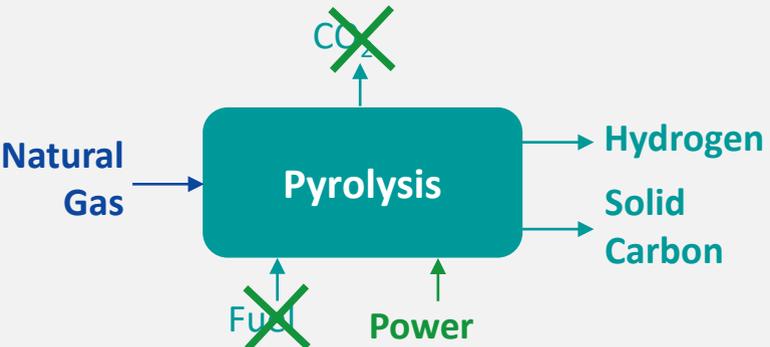
Clean Hydrogen: Multiple Pathways Needed

Green Hydrogen



✓ Harness Renewable Energy

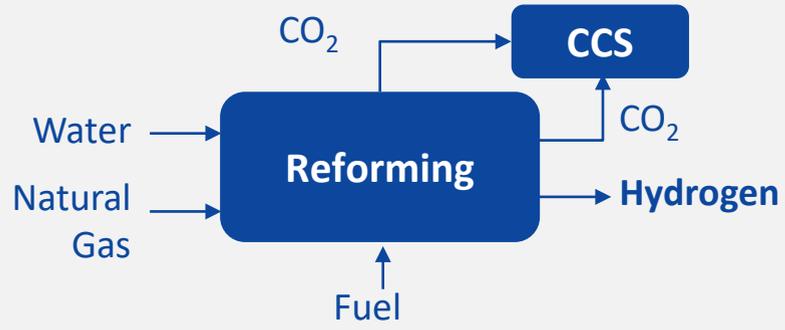
Turquoise Hydrogen



✓ Harness Renewable Energy

✓ Decarbonize Natural Gas

Blue Hydrogen



✓ Decarbonize Natural Gas

Planning to build the world's largest low-carbon hydrogen facility at Baytown, Texas

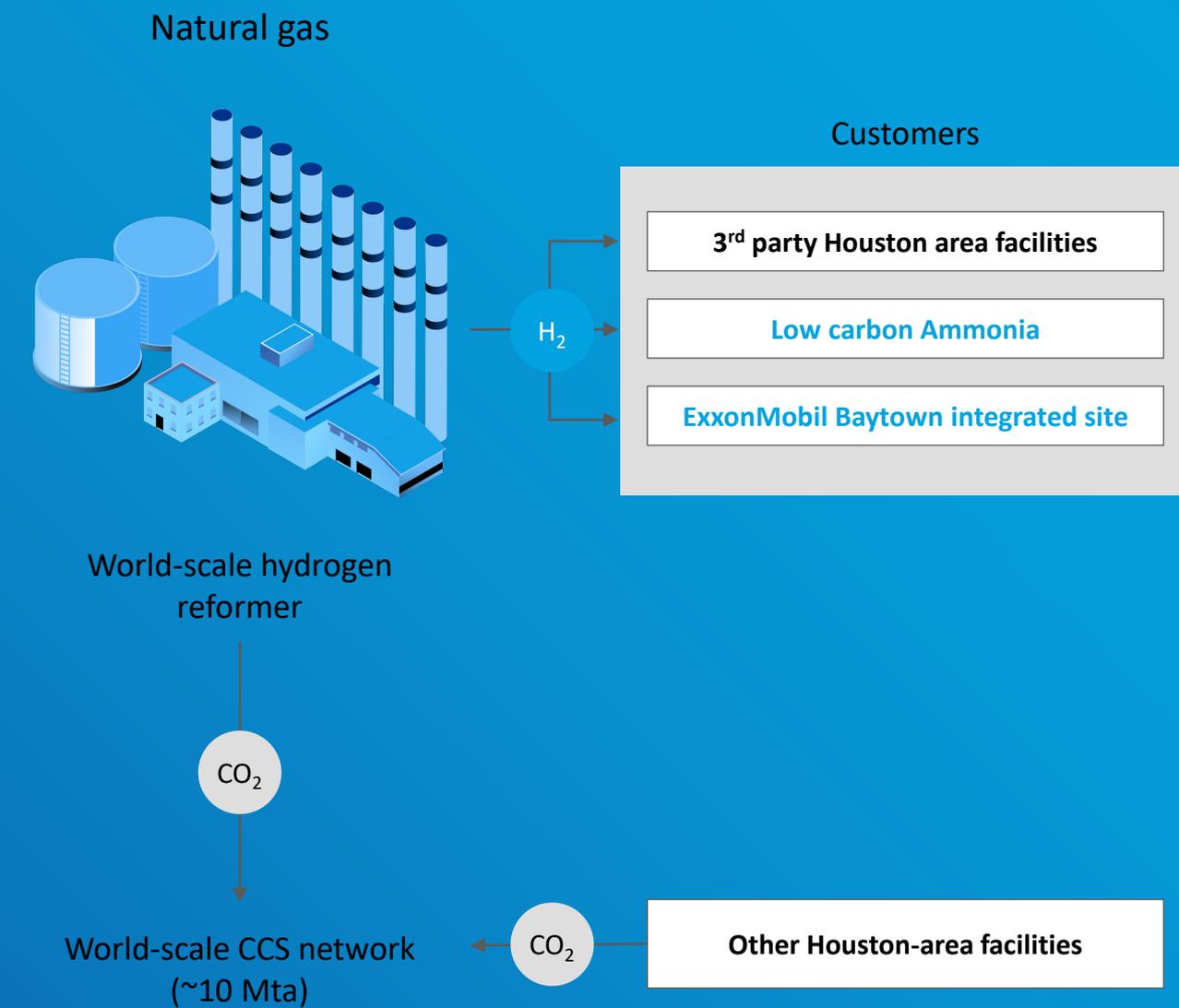


ExxonMobil Baytown Complex, Texas

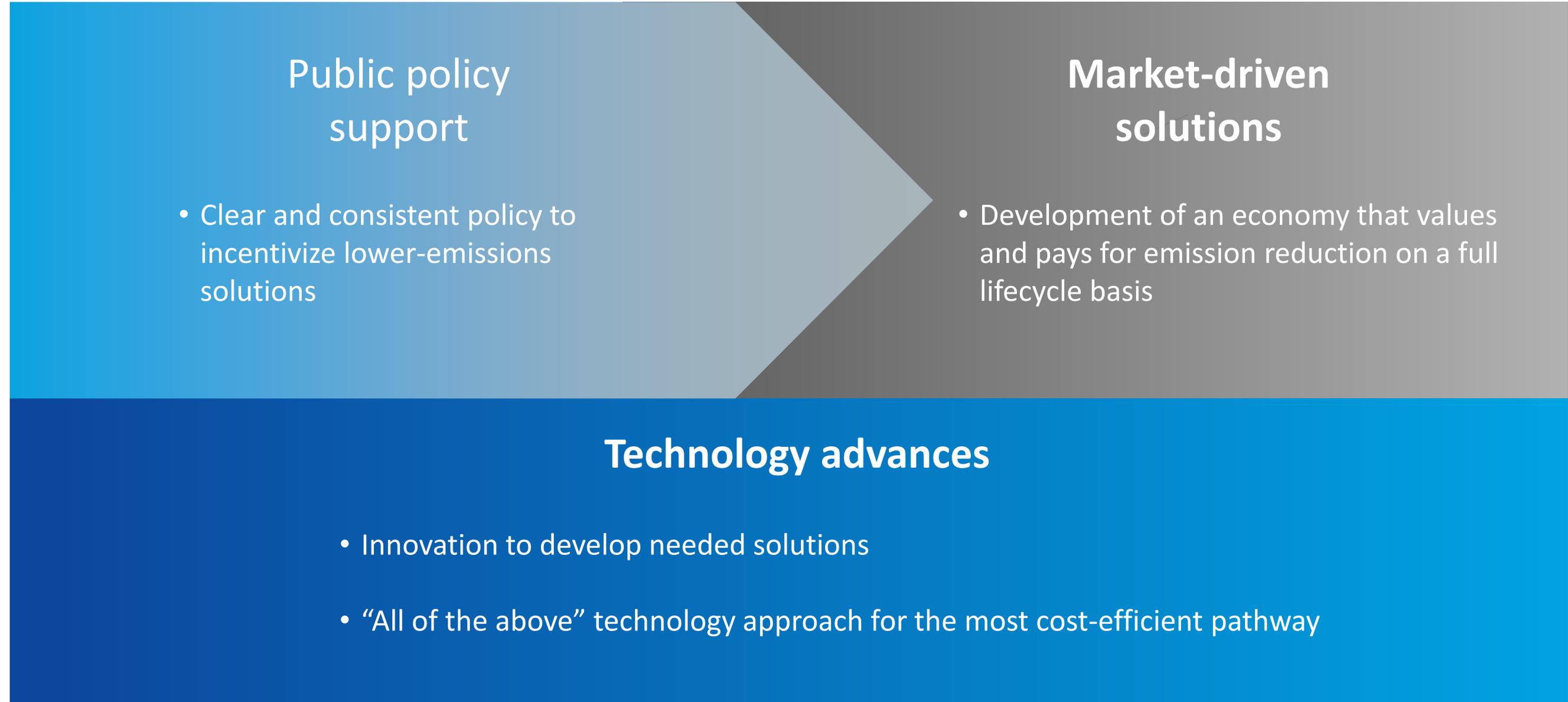
Image is illustrative of future facility

Includes projects at various stages of development that are included in corporate plan but may not yet be fully funded (FID).

The final investment decision will be subject to supportive government policy, necessary regulatory permits and market conditions.



Key enablers for a successful energy transition



Explore more



ExxonMobil
Global Outlook:
Our view to 2050

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Thank you

