A large offshore oil rig is illuminated by its own lights against a sunset sky. The rig's complex structure of steel beams, platforms, and pipes is visible. In the lower right, a small support vessel is seen on the dark ocean surface.

Chevron Deepwater Strategy and The Energy Transition

Patrick Toomey

**the
human
energy
company™**



DeepStar® Consortium

31 Years of Industry Excellence

2022/2023 Core Members



DeepStar® Technical Subcommittees:

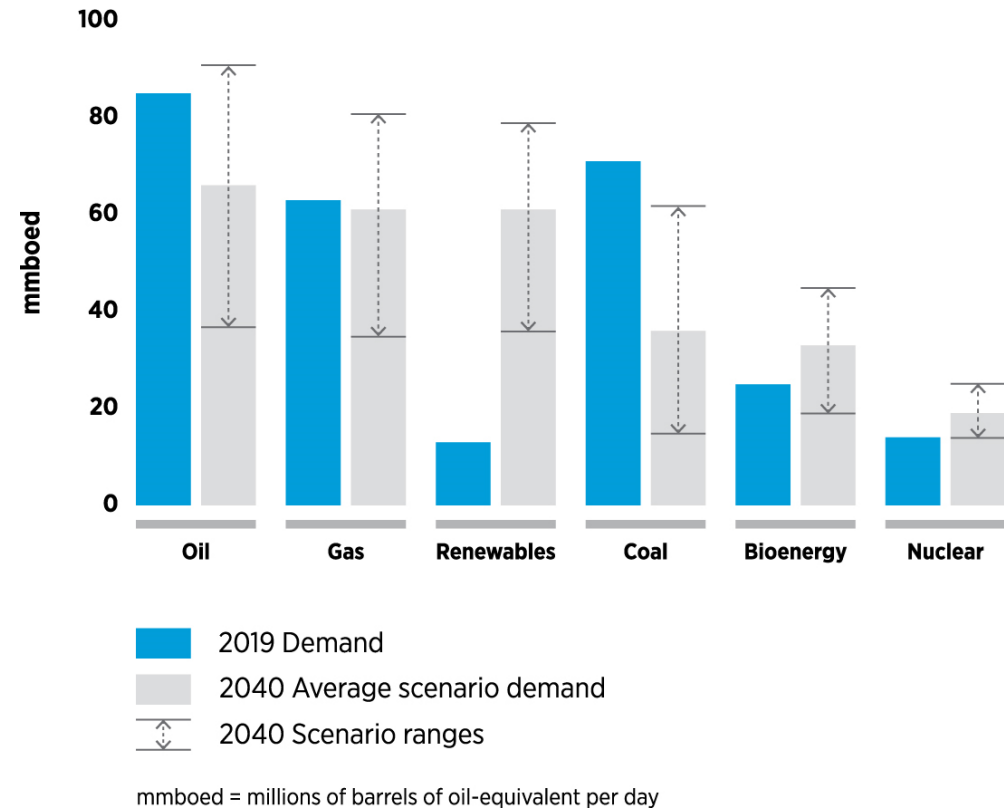
- Drilling, Completion and Intervention
- Flow Assurance
- Subsea Systems Engineering
- Floating Systems & Met-Ocean
- Autonomous Operations
- Green House Gas Emissions / Carbon Abatement / Hydrogen Related Technologies

How we approach the future energy mix

Oil & Gas will still be needed in 20 years.

Renewables have greatest growth.

Economics, policy, and technology influence pace.



Sources: IEA, *World Energy Outlook 2020*; IHS Markit 2020 Scenarios; Wood Mackenzie, *Energy Transition Outlook 2020: Highlights*; IEA, *Net Zero by 2050*.

Deepwater Facilities Technology Strategy & Focus Areas

Long Distance Tiebacks:

Actively developing new technologies for long distance tiebacks. Focus is on lowering costs and increasing reliability. The following is a partial list of ongoing work:

- Subsea Long-Distance Power & Communication
- All Electric Subsea Systems
- Normally Unattended Facilities (NUF)
- Smart Riser & Pipeline Systems
- Flow Assurance (e.g. – Hydrates, Asphaltenes, etc.)
- Super insulated pipelines
- Fiber Optics
- Robotics

??? km – Future

190 km – Chevron Gorgon

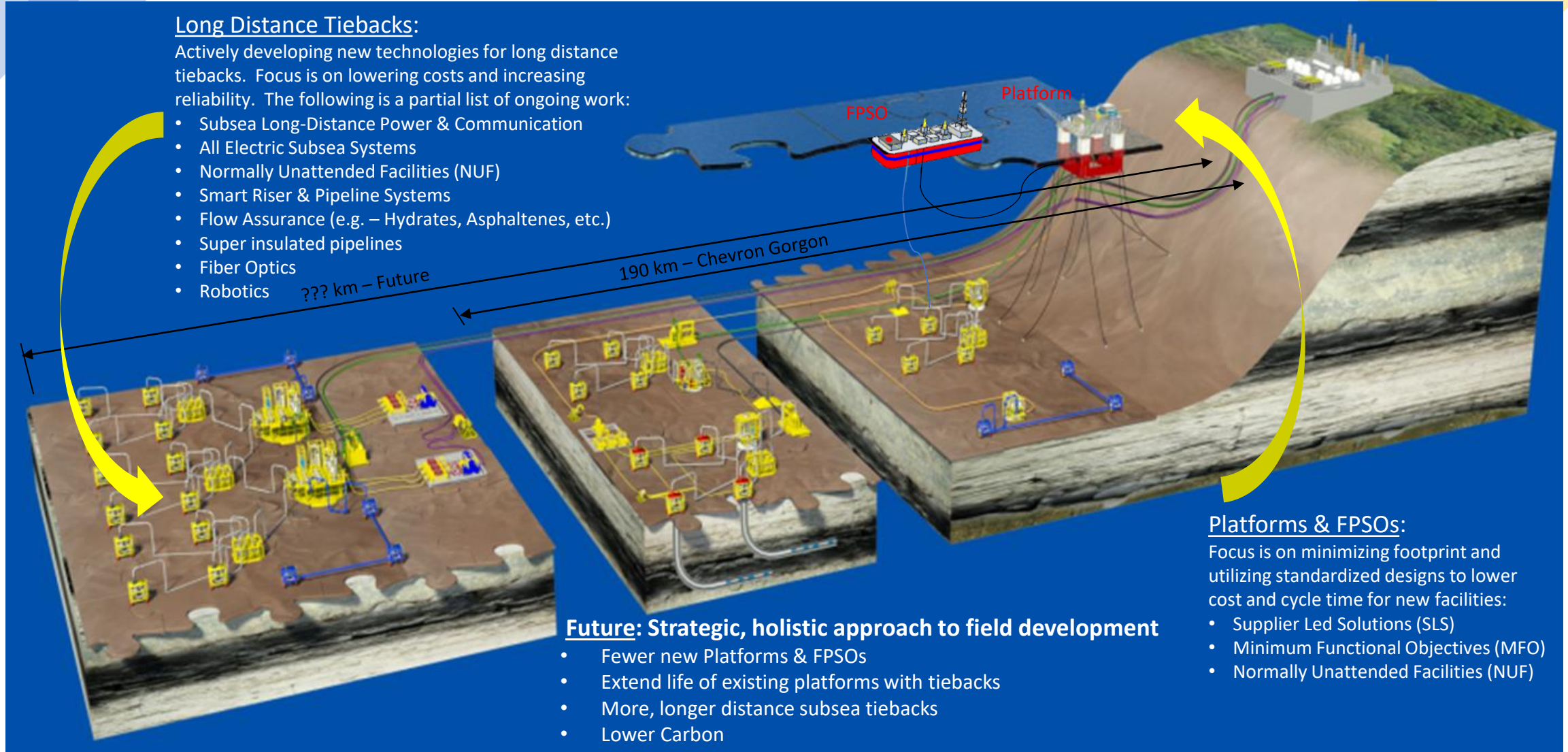
Future: Strategic, holistic approach to field development

- Fewer new Platforms & FPSOs
- Extend life of existing platforms with tiebacks
- More, longer distance subsea tiebacks
- Lower Carbon

Platforms & FPSOs:

Focus is on minimizing footprint and utilizing standardized designs to lower cost and cycle time for new facilities:

- Supplier Led Solutions (SLS)
- Minimum Functional Objectives (MFO)
- Normally Unattended Facilities (NUF)



Energy Transition

advancing a lower carbon future

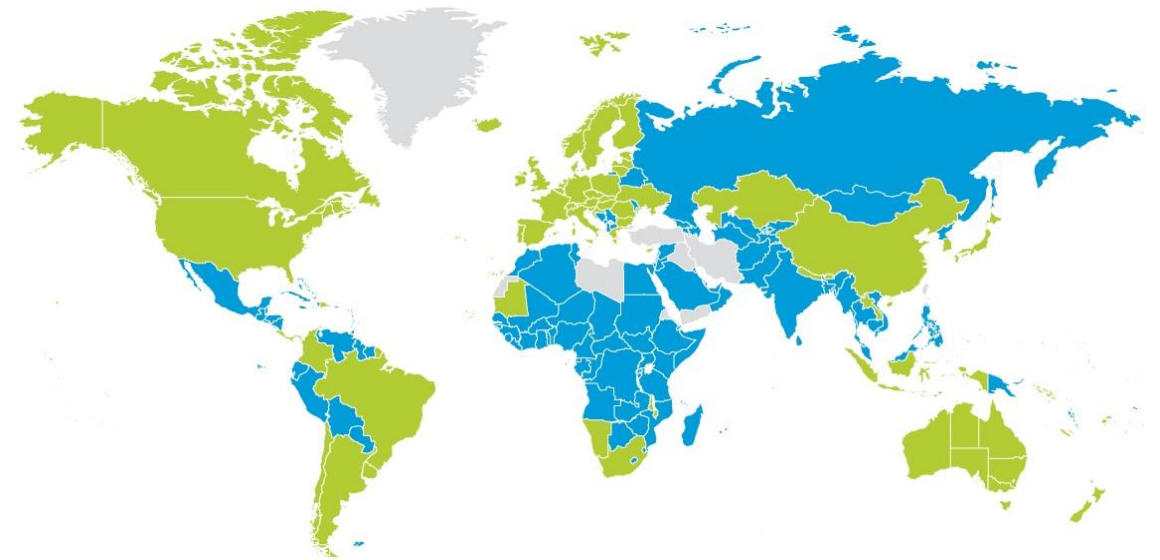


The future is lower carbon

**Economic
macrotrends**

**Policy
advancement**

**Technology
and innovation**



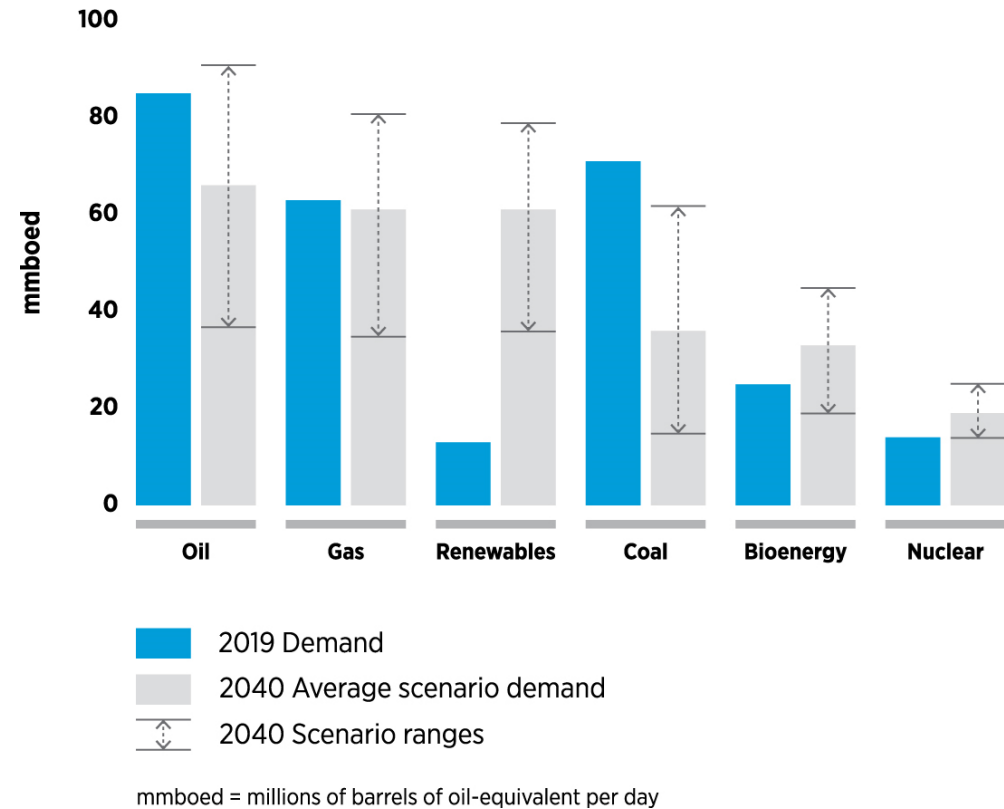
- Ratified Paris Agreement
- Ratified Paris Agreement and government support for net zero

How we approach the future energy mix

All forms of energy are needed.

Renewables have greatest growth.

Economics, policy, and technology influence pace.



Sources: IEA, *World Energy Outlook 2020*; IHS Markit 2020 Scenarios; Wood Mackenzie, *Energy Transition Outlook 2020: Highlights*; IEA, *Net Zero by 2050*.

Our strategy



“Our strategy is clear:
Leverage our strengths
to safely deliver lower carbon energy
to a growing world.”

Mike Wirth
Chairman of the Board
and CEO of Chevron

Our Energy Transition strategy

Advance a lower carbon future

Lower carbon intensity of our operations

Target

35% carbon reduction in Upstream by 2028

Maintain

1st quartile performance in oil and gas GHG intensity

Focus

on methane, flaring and energy management

Aim

2050 net zero aspiration* for upstream
Scope 1 & 2 emissions

Grow lower carbon businesses



Renewable fuels
& products



Hydrogen**



Carbon capture,
utilization & storage



Offsets & emerging lower
carbon opportunities

Chevron expects to triple our lower carbon capital versus prior guidance to over \$10 billion between now and 2028:
\$2B in carbon reduction projects and **\$8B in low carbon investments**

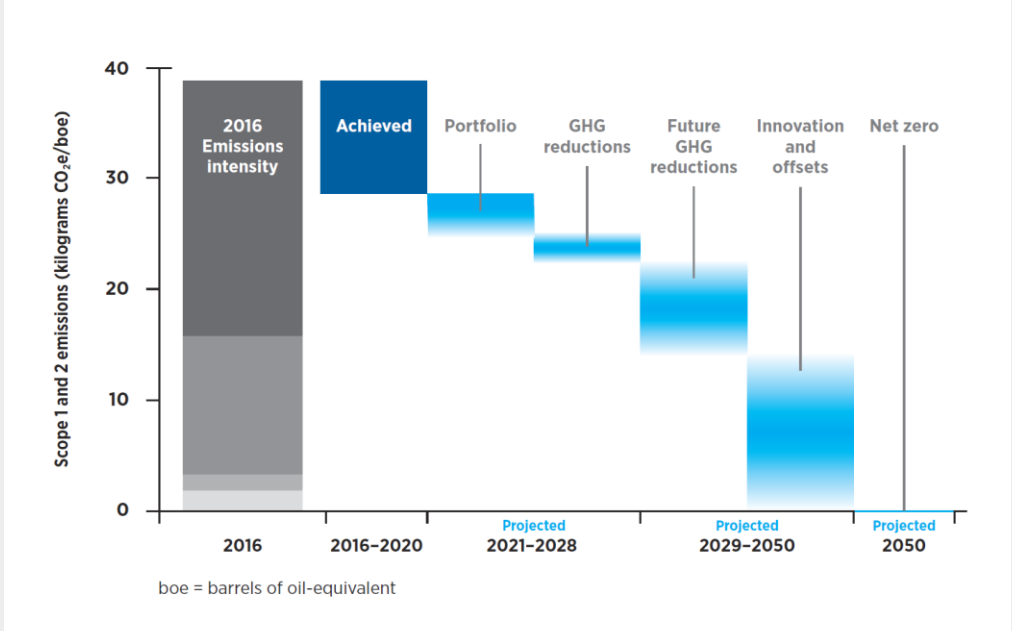
* Upstream emission intensity Scope 1 and 2 in kgCO₂e/BOE. Achieving the Upstream 2050 net zero aspiration will require continued partnership and progress in technology, policy, regulations, and offset markets.



**Chevron's approach to hydrogen envisions the use of green, blue, and gray hydrogen. See Climate Change Resilience Report pg 51 to learn more.

Our ambitions to advance a lower carbon future

Upstream Net Zero 2050 Aspiration*



Grow lower carbon business

2030 targets

	Carbon capture and offsets	25 MTPA
	Hydrogen+	150 MTPA
	Renewable natural gas	40,000 MMBTU/D
	Renewable diesel and SAF	100,000 B/D

+Partially grey, blue and green

Chevron has set a new GHG intensity target Portfolio Carbon Intensity,** that represents the carbon intensity across the full value chain associated with bringing products to market, including Scope 3 emissions from the use of sold products, our largest category of Scope 3 emissions

*Upstream emission intensity Scope 1 and 2 in kgCO₂e/BOE. Achieving the Upstream 2050 net zero aspiration will require continued partnership and progress in technology, policy, regulations, and offset markets.

**This target allows Chevron flexibility to grow its traditional upstream and downstream business while remaining increasingly carbon-efficient.



Renewable fuels & base oil targets

Renewable natural gas



**10X growth by 2025
>40,000 MMBTU/D by 2030**

Expanding partnerships

Increasing CNG sites

Renewable diesel & sustainable aviation fuel



**3X growth by 2025
100,000 B/D by 2030**

Capital efficient

Feedstock flexibility

Renewable base oil & lubricants



**20X growth by 2025
100,000 TPA by 2030**

Patented technology

Multiple product lines

Note: All growth metrics baseline year-end 2020.



Leading in renewable natural gas

Current operations

~2,100 MMBTU/D

Multiple partnerships

Recent actions

~10,000 MMBTU/D committed by 2025

Mercuria CNG joint venture

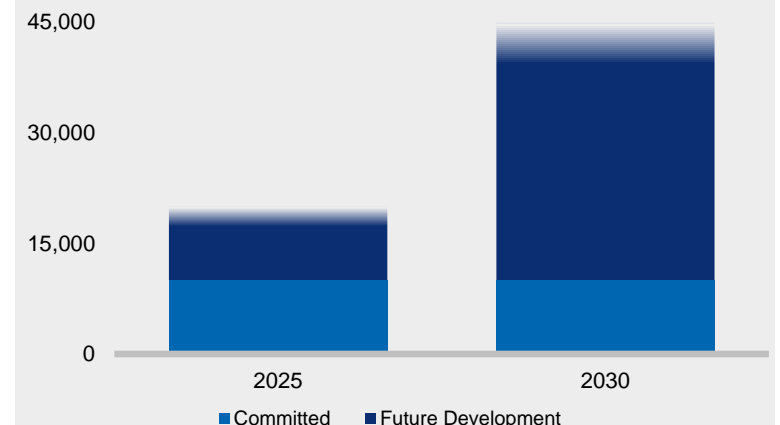
Future developments

Target >40,000 MMBTU/D by 2030

Expanding feedstock mix



Expected RNG production growth
MMBTU/D



Advancing technology for lower carbon businesses

Venture investments

>20 lower carbon companies

Innovation in emerging technologies



Research & development

Enabling bio-feedstock processing

CCS injection monitoring tech



Deploying at scale

>10 lower carbon tech deployments in 2021

Integrating capture technologies



What is CCUS?

CCUS process

Carbon Capture

Capture CO₂ before it enters atmosphere

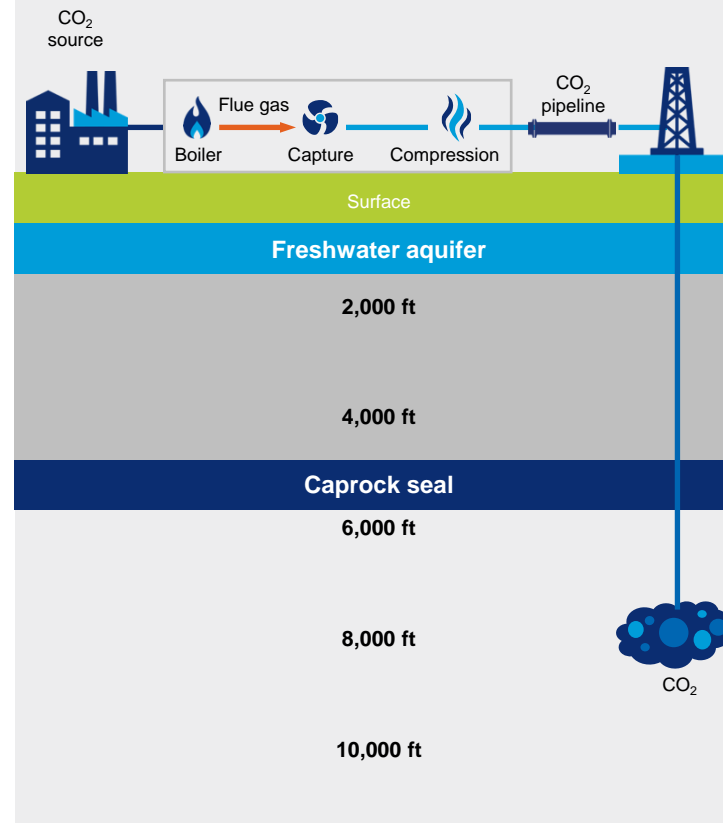
Utilization

Reuse CO₂ to produce low or negative emissions products such as cement, steel, chemicals, plastics, and fuels *or...*

Storage

Permanently store that CO₂ underground (i.e., depleted oil or gas fields or saline formations)

Simplified CCS value chain



Safe and effective CO₂ injection and storage

- Large-scale injection & storage of CO₂ working safely and effectively for decades in oil & gas production
- Chevron helped pioneer CO₂ injection into oil formations for enhanced recovery approximately 40 years ago.
- Safely operating CO₂ pipeline in Colorado for 35 years

CCUS

We have a unique set of capabilities to develop a profitable CCUS business across the full value chain:

Critical to a lower carbon future

Existing assets and larger-scale opportunities

Subsurface capabilities

NATIONAL RESEARCH FOUNDATION
PRIME MINISTER'S OFFICE
SINGAPORE



Svante



Schlumberger



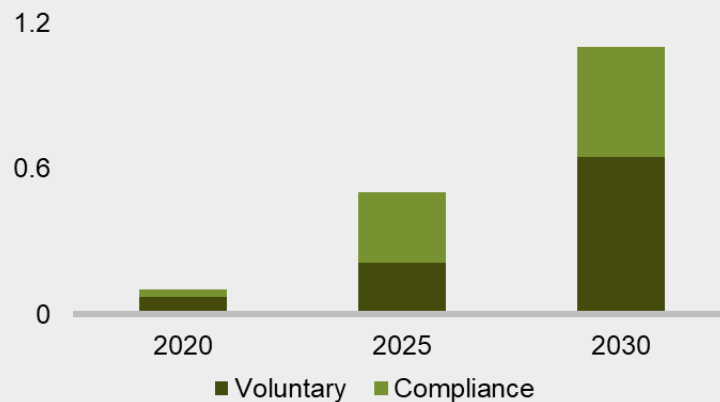
Generating value through offsets

Our approach

Grow with customer needs

Portfolio supplier of high-quality credits

Global Offsets Demand
gigatonnes per year



Source: BCG; Base case analysis on known and projected climate commitments.

Recent actions

Established offset integrity framework

Published GHG methodology for LNG cargoes



THE SGE
METHODOLOGY

Future developments

Invest in nature-based solutions

Monetize excess credits



Offsets

We plan to grow a carbon offsets business to:

Lower our carbon intensity and provide a way forward

Help customers to achieve their emissions-reduction goals

Invest in scalable, nature-based solutions



JOINT GLOBAL CHANGE RESEARCH INSTITUTE





The role of hydrogen

The future of energy is lower carbon

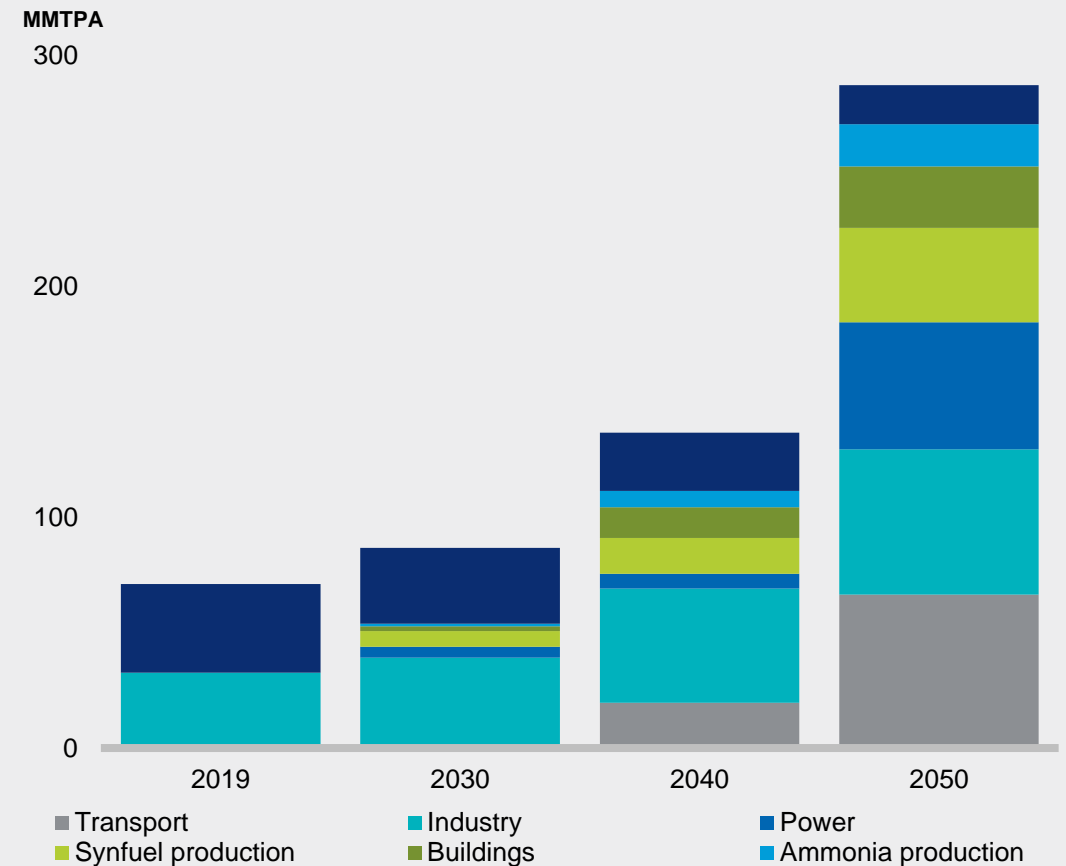
Hydrogen's growth is linked to decarbonization

- Part of the solution where electrification of demand is not feasible
- Requires developing and maturing a lower carbon hydrogen value chain
- Combined with other efforts — such as CCS, offsets, renewable fuels, and lower carbon intensity oil & gas

Hydrogen in the future energy mix

- Anticipated 6% of total energy consumption by 2050
- Requires 4-fold growth from today
- ~500 projects under assessment/development
- Policy, industry investment and partnerships necessary to meet growth projections

IEA SDS H₂ demand projections

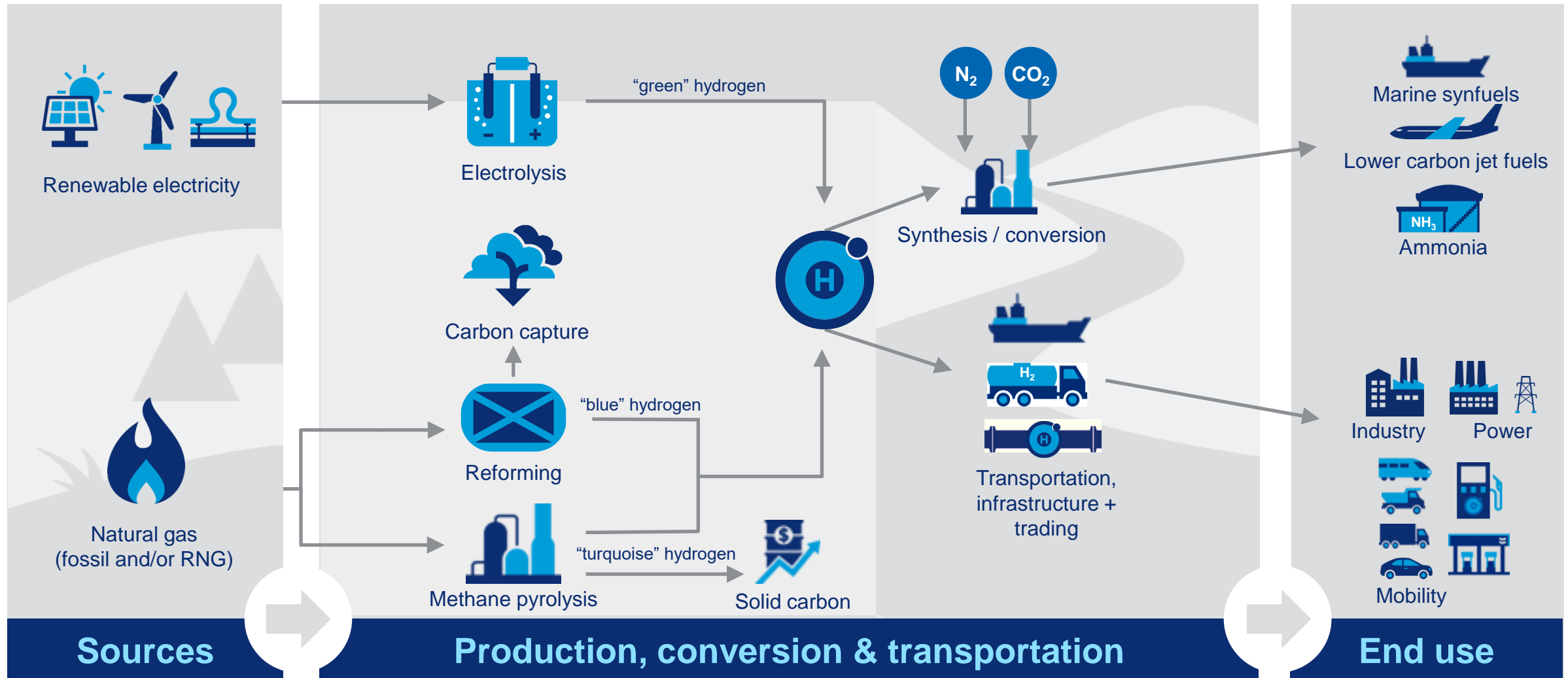


Source: IEA, Energy Technology Perspectives 2020 under IEA's Sustainable Development Scenario (net zero by 2070; 2deg)
Note: Ammonia refers to fuel production for shipping sector; Industry includes Hydrogen for industrial ammonia production





Hydrogen value chain



Hydrogen

Our approach envisions the use of green, blue, and gray hydrogen, and we are well positioned to participate across the value chain:

Significant growth potential

Harder-to-abate demand

Existing assets and capabilities

Developing partnerships

RAVEN

hydrogenious
LOHC TECHNOLOGIES

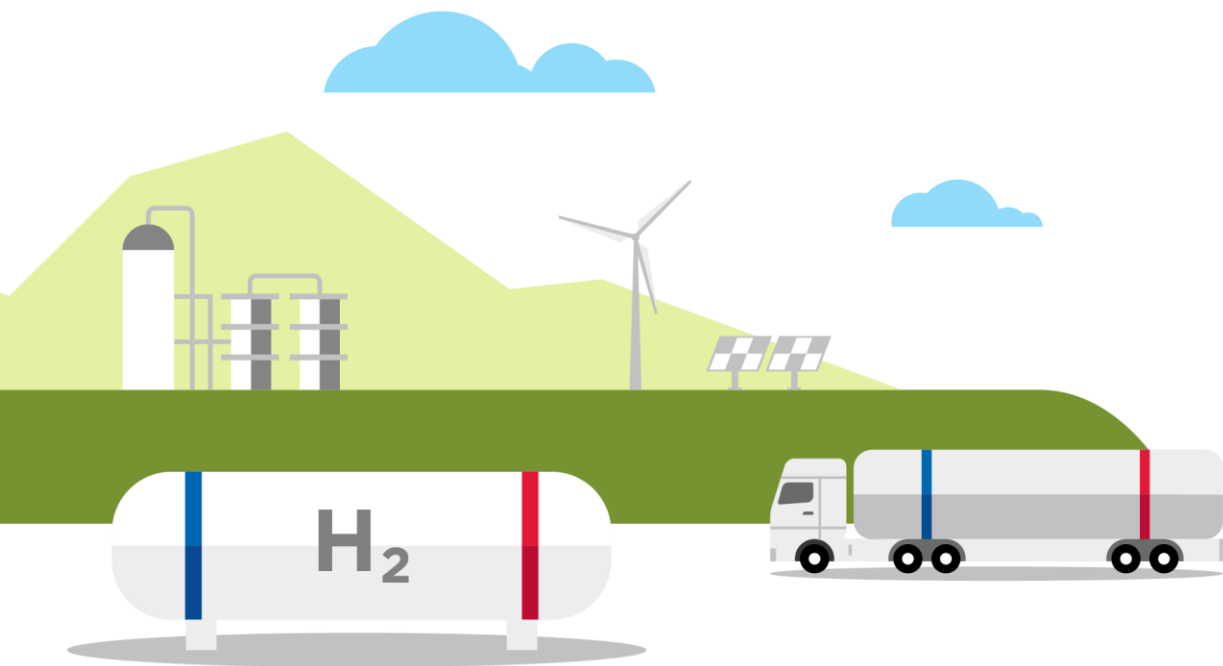


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Questions and Answers