# The Transition to Lower-Carbon Energy Future

November 25, 2021

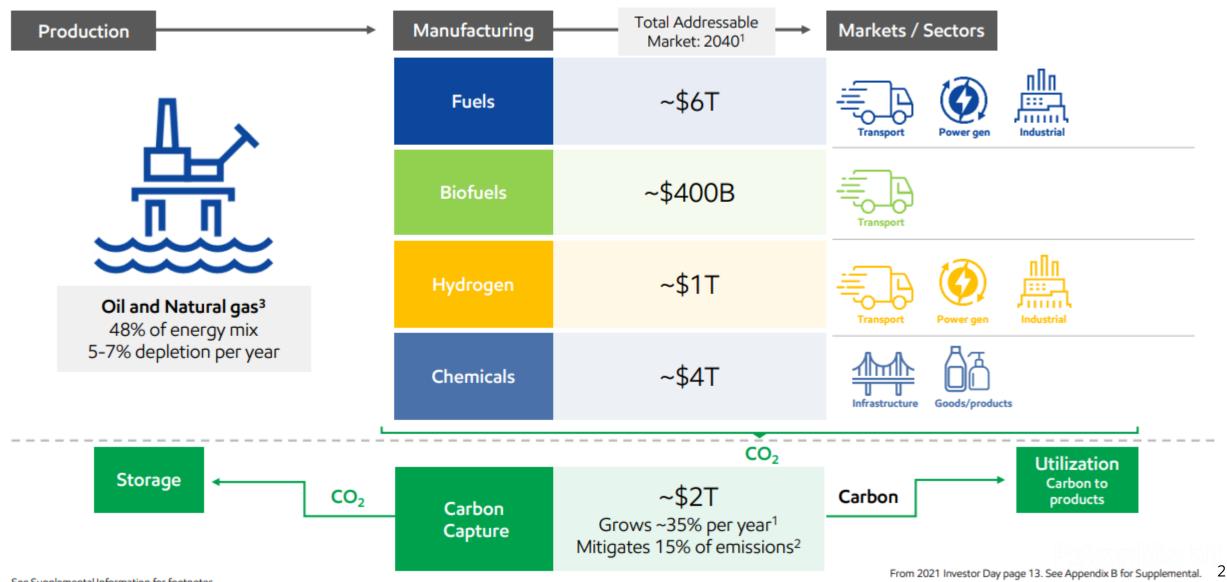
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### **SIGNIFICANT VALUE IN GROWING MARKETS**

ExxonMobil well positioned to capitalize across value chains through 2040 and beyond



## **CLIMATE STRATEGY**

Responsibly meeting society's evolving need for energy in a reliable and sustainable manner



## MITIGATING EMISSIONS IN COMPANY OPERATIONS

- Achieved 2020 emission reduction goals
- Set 2025 GHG emission reduction plans consistent with goals of Paris Agreement
- Aiming for industry-leading GHG performance by 2030



## PROVIDING PRODUCTS TO HELP CUSTOMERS REDUCE THEIR EMISSIONS

- Natural gas
- Lightweight materials and packaging
- Advanced fuels and lubricants



#### PROACTIVELY ENGAGING ON CLIMATE-RELATED POLICY

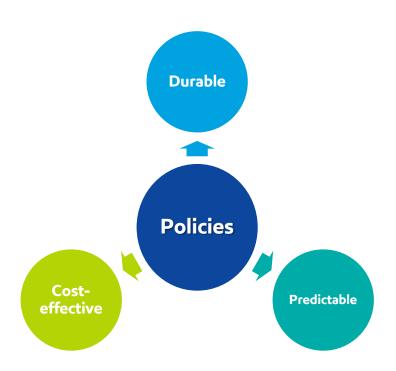
- Support an economy-wide price on CO<sub>2</sub> emissions
- Continue to engage in efforts to encourage sound and constructive policy solutions



## DEVELOPING AND DEPLOYING SCALABLE TECHNOLOGY SOLUTIONS

- Created Low Carbon
   Solutions business to
   commercialize portfolio of
   low-carbon technologies
- Invested > \$10 billion since 2000 in lower-emission solutions; additional > \$3 billion through 2025

### PROMOTING SUPPORTIVE POLICIES & REGULATORY FRAMEWORK



- Durable, predictable, and cost-effective policies will be required to develop and deploy multiple needed low-carbon technologies at scale.
- Carbon pricing would send a clear signal through the market, creating incentives to reduce emissions.

#### Transparent

Allow the market to function efficiently



Incentivize behavior to reduce emissions

Stimulate the opportunities to uncover the reduction opportunities at the lowest cost.

## ExxonMobil developing technologies to reduce emissions

Available alternatives do not fully meet needs of hard-to-decarbonize sectors, requiring innovation

#### **IPCC 2040 DEMAND**

Nuclear

## EXXONMOBIL ACTIONS TODAY

## FOCUS ON SOLUTIONS FOR TOMORROW

POWER GENERATION



 Providing natural gas to replace coal

- Cogeneration
- Lubricants for wind turbines

 Fuel cells for lower-cost CCS and hydrogen

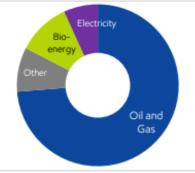
TRANSPORTATION

Need: 24/7 on-demand electricity

long-haul trucks, aviation, marine, passenger cars



**Need:** rapid refueling of energydense fuels



Fuels and lubricants to improve fuel efficiency

- Biofuels blending and distribution
- Lightweight plastics to improve vehicle efficiency

Advanced biofuels

**INDUSTRIAL** 

steel, cement, textiles, plastics



**Need:** fuel for high-temperature processes



- New materials with lower-emission footprint
- Energy-efficient process redesign
- Carbon capture and hydrogen

- Fuel cells for lower-cost CCS and hydrogen
- Less energy-intense manufacturing processes

#### CARBON CAPTURE AND STORAGE



By Reuters Staff

2 MIN READ

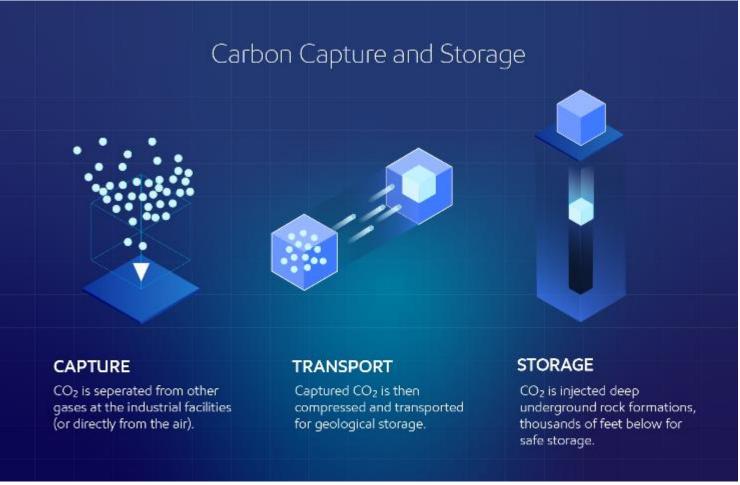
## IEA: Reaching net-zero will be virtually impossible without CCUS

The flagship report 'CCUS in Clean Energy Transitions' was published by the autonomous intergovernmental organisation and argues for the need to invest more in CCUS in order to achieve net zero.

01 October 2020

Joana Costa Figueira

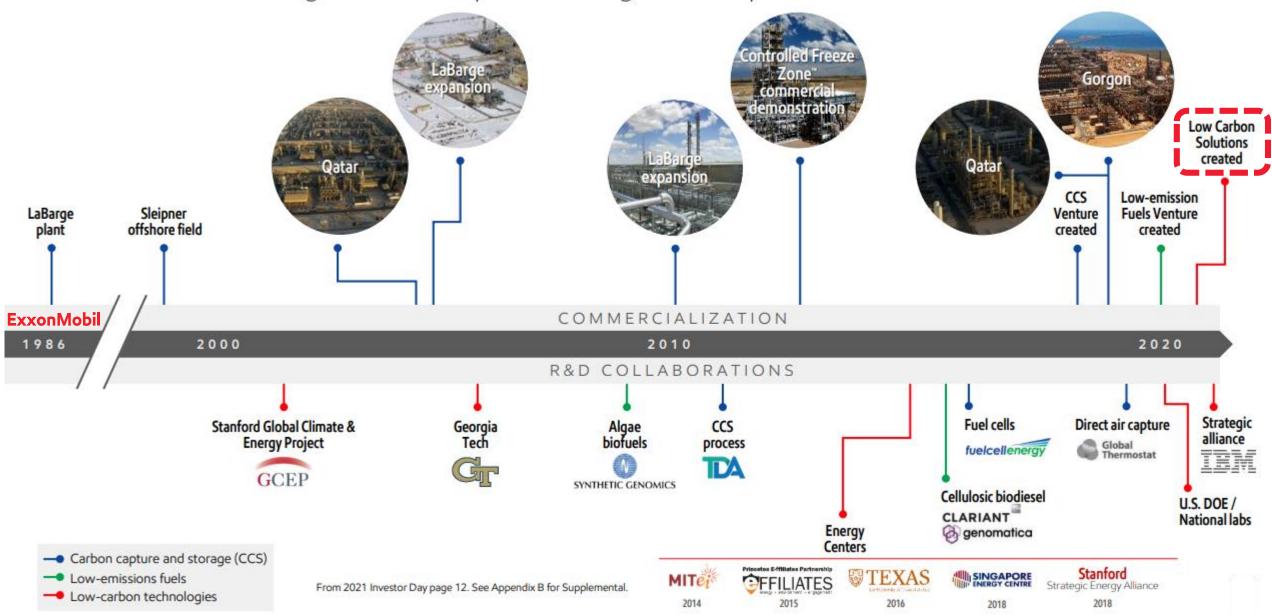




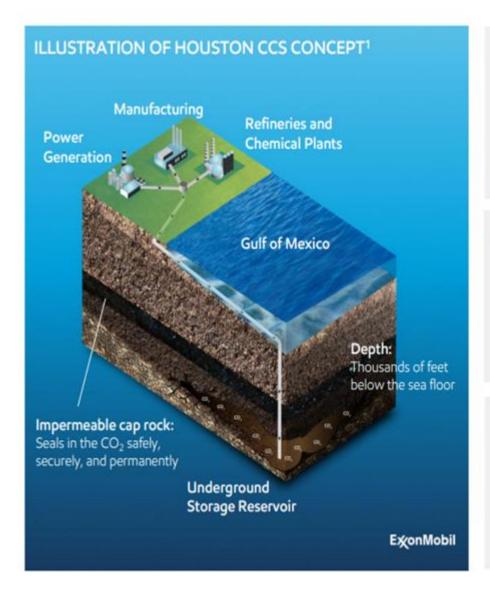
**Why CCS?:** While technologies like wind and solar will continue to play important roles in reducing emissions, CCS also offers a significant impact, particularly in the power generation and manufacturing sectors.

### **PROVEN RECORD** IN ADVANCING LOW-CARBON TECHNOLOGIES

Focused on solutions aligned with competitive strengths and experience



### EXXONMOBIL LOW CARBON SOLUTIONS-JOURNEY



**TARGETING** 

~50

largest emitting facilities

POTENTIAL TO MITIGATE

~100

million tonnes CO<sub>2</sub> annually

GULF COAST STORAGE POTENTIAL

~500

CRITICAL ENABLERS INCLUDE



Supportive regulatory and legal framework



Adequate financial incentives



Broad industry and government alignment



Public support

### **POSITIONED FOR A LOWER-CARBON FUTURE**

Leveraging capabilities and expertise to reduce emissions and deliver value

Low Carbon

## Solutions

new business to advance commercial CCS opportunities and deploy technologies Research, develop, commercialize

>\$13 Billion<sup>1</sup>

lower-emission solutions: CCS / hydrogen, biofuels, cogeneration, and efficiency Hydrogen produced

1.3 Mta

developing technology to produce low-carbon H<sub>2</sub> with CCS at scale Renewables in operations (600MW)

#2 All-time buyer

of wind / solar power among Oil and Gas; top 5% across all corporates<sup>5</sup>

#### Support the goals of

## Paris Agreement

engaging in climate-related policy, including carbon pricing

Global CCS leader

40%

of all CO<sub>2</sub> captured, equivalent to planting ~2 billion trees<sup>4</sup>



## THE TRANSITION TO LOWER-CARBON ENERGY FUTURE

