POSITIONING FOR A LOWER-EMISSION FUTURE

OIL AND NATURAL GAS

ExxonMobil is well positioned to meet the expected demand for oil and natural gas through the next decade, delivering value while seeking to minimize environmental impact across its operations.

As highlighted in the Net-Zero Ambition section of this report, the company is developing proprietary roadmaps to evaluate and pursue emission-reduction opportunities at its operated assets ranging from small-scale operational changes to large-scale capital investments. To date, ExxonMobil has identified more than 100 potential modifications across all upstream asset types including energy efficiency measures, equipment upgrades and the elimination of venting and routine flaring. Examples of further high-impact reduction opportunities include use of power and steam co-generation, electrification, carbon capture and storage projects, and blue hydrogen.

UNCONVENTIONAL

ExxonMobil has set a net-zero Scope 1 and 2 greenhouse gas emission goal by 2030 for its Permian Basin operated assets. The actions to achieve this objective include:

- Enhancing operations protocols, including implementation of a comprehensive methane-monitoring and leak-detection program.
- Minimizing flaring, including eliminating routine flaring by year-end 2022 in line with the World Bank Zero Routine Flaring Initiative, and seeking additional outlets for non-routine flared gas.
- Electrification of operations.
- Sourcing electricity from renewables and other lower-carbon sources.
- Potentially using high-quality emissions offsets to address residual emissions.

LNG

ExxonMobil is progressing development of approximately 12 million metric tons per year of low-cost, high-efficiency LNG liquefaction capacity to meet expected global demand growth. This includes diverse projects in the U.S., Papua New Guinea, Mozambique, and Russia that, when benchmarked against the industry, are targeted to have first-quartile greenhouse gas intensity.

DEEPWATER

ExxonMobil’s deepwater oil and gas developments are being designed to perform in the first quartile for greenhouse gas intensity. Offshore Guyana, the Liza Unity floating production storage and offloading (FPSO) vessel was awarded the SUSTAIN-1 notation by the American Bureau of Shipping. It is the first FPSO in the world to achieve this recognition for sustainability of its design and operational procedures.
**FUELS, LUBRICANTS AND CHEMICALS**

ExxonMobil is growing production of high-value products and aggressively pursuing reduction of greenhouse gas emissions in its Fuels, Lubricants and Chemical businesses by leveraging competitive advantages in technology, scale and integration.

Demand for chemicals, lower-emission fuels, and lubricants remains strong, supporting customer mobility, efficiency and greenhouse gas emission-reduction goals. Global chemical demand is expected to grow faster than the economy as a whole, driven by demand for products that support modern life as a growing, global population enters the middle class. Demand for lower-emission fuels is expected to grow rapidly, driven by the need for energy-dense, lower-carbon fuels for hard-to-decarbonize transportation such as aviation, marine and heavy-duty trucking. Lubricants demand is expected to be resilient and grow in the industrial, aviation and marine sectors. Demand for conventional fuels is expected to peak this decade and then decline at an uncertain pace.

More than 75% of the Company’s manufacturing capacity is co-located in large, integrated sites that have the flexibility to optimize and shift product output to meet society’s evolving needs. For example, as demand for conventional road transport fuels declines, assets can be repurposed to manufacture chemicals, lower-emissions fuels and lubricants, or converted to terminals. The Company continues to improve the portfolio and focus investments on large, integrated assets. Key investments in North America, China, and Singapore will help meet the growing demand for these lower life-cycle emission products.

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**Global market demand growth**

Indexed versus 2017, %

![Graph showing indexed market demand growth](image)

**Key plan activities to grow high-value products**

*Includes Gulf Coast Growth Venture, Baton Rouge Polypropylene, Baytown Chemicals Expansion, Beaumont Light Crude, and USGC Fuels Reconfiguration*
The Company is progressing comprehensive lower-emission technology roadmaps to reduce greenhouse gas emissions, which would more than offset emissions from new facilities needed to meet growing demand. The Company’s emission-reduction plans include: fuel switching to hydrogen and carbon capture and storage projects in Houston, Rotterdam, Fife, and Antwerp; renewable power purchase agreements; energy efficiency projects; and conversions of refineries to terminals.

ExxonMobil’s customers want products with lower life-cycle greenhouse gas emissions, which requires lowering the carbon intensity of the feedstock and the manufacturing process. Bio-based feed for lower-emission fuels provides further opportunity for lower greenhouse gas emissions, as do plastic waste streams. ExxonMobil is rapidly growing capacity to use bio-feeds to manufacture lower-emission fuels and progressing one of North America’s largest plastic waste advanced recycling facilities with initial planned capacity to annually recycle 30,000 metric tons of plastic waste. Capacity can be added as feedstock supplies increase through enhanced waste collection.

ExxonMobil is a leader in advanced recycling of plastic waste for certified circular polymers. Co-processing plastic waste via the Company’s advanced recycling approach results in lower greenhouse gas emissions, according to ExxonMobil estimates prepared on an ISO 14067 feedstock basis, with a cradle-to-process unit outlet boundary. For every 1,000 metric tons of waste plastic processed, greenhouse gas emissions are expected to be at least 120 metric tons lower than if the same amount of conventional feedstock had been used.\(^\text{14}\)

**Products to help customers reduce their emissions**

ExxonMobil applies its competitive advantages of scale and integration, along with proprietary technology to provide customers with a differentiated product offering, measurable greenhouse gas emission benefits, and improved energy efficiency. The Company provides innovative technical solutions for a wide range of applications, including packaging, transportation and industrial applications.

**Sustainable solutions to improve modern life**

- Plastic packaging has 54% lower life-cycle GHG emissions versus alternatives\(^\text{17}\)
- Exceed\(^\text{TM}\) XP enables up to 30% thinner plastic packaging versus conventional plastics\(^\text{18}\)
- Certified circular polymers\(^\text{19}\) with equivalent performance of virgin plastics

**Total vehicle product solutions to improve transportation efficiency**

- Plastics enable lighter vehicles and 6-8% fuel efficiency improvement for every 10% reduction in vehicle weight\(^\text{12}\)
- Butyl rubber improves air retention in tires, which can increase electric vehicle range by up to 7%\(^\text{20}\)
- Mobil 1 ESP X2 0W-20 engine oil helps provide up to 4% fuel economy improvement\(^\text{21}\)
- Renewable diesel can reduce carbon emissions by up to 70% compared to conventional diesel\(^\text{22}\)
- Marine bio fuel, BMF.5™, can reduce carbon emissions by up to 30% compared to conventional marine fuel\(^\text{23}\)

**Reliable solutions for industrial efficiency**

- Mobil DTE 10 Excel Series provides up to 6% improvement in hydraulic pump efficiency\(^\text{24}\)
- Mobil SHC\(^\text{TM}\) 600 Series provides up to 3.6% energy efficiency gain\(^\text{25}\)
- Mobil SHC\(^\text{TM}\) Gear WT helps reduce oil consumption and maintenance costs through extended oil life and drain intervals\(^\text{24}\)