The following assessment is intended to address the potential impacts to the Company’s proved reserves and resources through 2050, considering the discussed scenarios’ ranges of oil and natural gas demand.

**PROVED RESERVES**

Proved reserves are assessed annually and reported in the Company’s annual report on Form 10-K in accordance with rules of the U.S. Securities and Exchange Commission. Based on currently anticipated production schedules, a substantial majority of ExxonMobil’s year-end 2021 proved reserves are expected to have been produced by 2050. For the remaining year-end 2021 proved reserves that are projected to be produced beyond 2050, the reserves are generally associated with assets where the majority of development costs are incurred before 2050. While these proved reserves may be subject to more stringent climate-related policies in the future, technology advancements and targeted investments could mitigate production-related greenhouse gas emissions and associated costs. In addition, these assets generally have lower risk given the technical knowledge accumulated over many decades of production.
RESOURCES

ExxonMobil maintains a large and diverse portfolio of undeveloped resources that provide considerable flexibility to develop new supplies to meet future demand. The Company also continues to enhance the quality of this resource base through successful exploration, acquisitions, divestments, and ongoing development planning and appraisal activities.

For ExxonMobil, the underlying economics of commercializing resources depend on a number of factors that are assessed annually. The Company advances the best resource opportunities and monetizes or exits those with lower potential. All investments are tested over a wide range of commodity price assumptions and market conditions. In extreme scenarios like the IEA NZE, higher-cost assets could become disadvantaged without active portfolio management.

In light of the multiple and dynamic factors that influence governments’ diverse approaches to regulate resources and industry decisions to commercialize undeveloped resources, it is not possible to identify which specific assets will ultimately be developed. For example, regional policies that constrain supply in one area could enhance returns in others. However, ExxonMobil is confident in its ability to apply high-impact technologies to position the Company’s portfolio to compete successfully in a broad range of scenarios.

Significant investment still needed in Paris-aligned scenarios

In the IPCC Lower 2°C scenarios, average global oil demand is projected to decline from 97.4 million barrels per day in 2019 to about 52 million in 2050. The IEA NZE scenario projects about 24 million barrels per day of demand in 2050. However, without future investment and due to natural field decline, world oil production would be expected to drop to about 11 million barrels per day. Even in the IEA NZE scenario, additional investment of approximately $11 trillion through 2050 would be required in both oil and natural gas development to meet the world’s energy demand.\(^{(55)}\)
Using Company and third-party sources, ExxonMobil monitors a variety of signposts that may indicate a potential acceleration in shifts in the energy landscape. For example, a key consideration in advancing the energy transition is the cost of new technologies compared to existing or alternative energy sources. Changes in relative cost may further increase shifts in the global energy mix. They include:

- Increasing electrification of energy systems and technology developments that reduce costs and increase the reliability and capacity of energy storage.
- Development of scalable alternative energy technologies such as advanced biofuels, leading to displacement of gasoline and distillate in the fuels market.
- Advances in carbon capture and storage technology to lower cost and enable lower-emission hydrogen production.
- New, more ambitious NDCs, along with broad implementation of significant policy and regulatory initiatives, such as carbon pricing.

The charts below show the outcome of the IEA Stated Policies Scenario by 2050 and highlight the progress made from 2010 to 2020. In addition, the Paris-aligned scenario markers indicate where the world would need to be by 2050.

The transition to 2050 in the Paris-aligned scenarios is of such a magnitude, that in the next 10 years, noticeable trends should emerge to indicate whether the world is moving in that direction.

- **Energy efficiency:** Per capita energy use improvement is a key trend across the Paris-aligned scenarios. In recent history, the world has seen an increase in energy use per capita, as living conditions in the developing world improve, more than offsetting efficiency trends in the developed world. This trend would need to reverse.

- **Solar and wind power:** The installed annual solar capacity would have to increase by 3.5-5 times the rate of the past five years. Wind turbines would have to be built at 2-4 times the recent rate.

- **Nuclear:** Capacity would have to be added at 3-5 times the recent rate.

- **Carbon capture and storage:** There are currently about 40 million metric tons per year of carbon capture and storage facilities in operation around the world. Over the next decade, 3-4 times the existing carbon capture and storage capacity would have to be added annually.

- **Biofuels:** Growth would need to continue for an entire decade and require commensurate growth in logistics. Whereas the IPCC Lower 2°C would require a growth similar to the average of the past five years, the IEA NZE would require 3.5 times that growth in the next decade.

- **Hydrogen:** Growth would have to exceed 9% per year in the IEA NZE scenario, more than doubling current use in one decade.

<table>
<thead>
<tr>
<th></th>
<th>Last 5-yr Avg(^{67})</th>
<th>Annual deployment over 2020-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency (Energy per capita)</td>
<td>+0.3%/yr</td>
<td>21EO(^{58})</td>
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<tr>
<td>Solar (GW)(^{61})</td>
<td>80</td>
<td>95</td>
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<tr>
<td>Wind (6MW turbines equivalent)</td>
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<tr>
<td>CCS (1.3 MTA Equivalent)</td>
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<tr>
<td>Nuclear (GW)(^{63})</td>
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<tr>
<td>Biofuels (KBDOE Growth)</td>
<td>115</td>
<td>110</td>
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<tr>
<td>H2 (MTA Consumption) Excluding Feedstock, NH3</td>
<td>0.5</td>
<td>0.6</td>
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