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ExxonMobil's Outlook for Energy Sees Global Increase in Future Demand

- Global energy demand seen rising 35 percent from 2010 to 2040
- Energy demand shifts strongly to developing nations as middle class expands
- North America to become a net exporter of oil and natural gas

IRVING, Texas--(BUSINESS WIRE)-- Significant growth in the global middle class, expansion of emerging economies and an additional 2 billion people in the world will contribute to a 35 percent increase in energy demand by 2040, according to a new report released today by ExxonMobil.

As demand increases, the world will continue to become more efficient in its energy use, according to the 2015 *Outlook for Energy: A View to 2040*. Without efficiency gains across economies worldwide, energy demand from 2010 to 2040 would be headed toward a 140 percent increase instead of the 35 percent forecast in the report.

ExxonMobil's Outlook for Energy projects that carbon-based fuels will continue to meet about three quarters of global energy needs through 2040, which is consistent with all credible projections, including those made by the International Energy Agency. The outlook shows a shift toward lower-carbon fuels in the coming decades that, in combination with efficiency gains, will lead to a gradual decline in energy-related carbon dioxide emissions.

Wind, solar and biofuels are expected to be the fastest-growing energy sources, increasing about 6 percent a year on average through 2040, when they will be approaching 4 percent of global energy demand. Renewables in total will account for about 15 percent of energy demand in 2040. Nuclear energy, one of the fastest-growing energy sources, is expected to nearly double from 2010 to 2040, with growth in the Asia Pacific region, led by China, accounting for about 75 percent of the increase.

"This research offers important perspective about the factors that will drive the world's energy needs in the coming decades," said Rex W. Tillerson, chairman and chief executive officer of Exxon Mobil Corporation. "Helping individuals, businesses and governments to better understand the elements that shape future energy supply and demand around the world is essential to aid investments and create effective energy policy."

The *Outlook for Energy* provides ExxonMobil's long-term view of global energy demand and supply. Its findings help guide the company's investments, which support its business strategy. The outlook is developed by examining energy supply and demand trends in 100 countries, 15 demand sectors covering all manner of personal and business needs and 20 different energy types.

The global middle class is expected to climb from about 2 billion in 2010 to almost 5 billion

people by 2030, representing more than half of the world's population, according to the Brookings Institution. As projected, that middle class expansion – largely in India and China – will be the largest in history and will have a profound impact on energy demand. Along with income gains, on-going societal changes such as expanded infrastructure, electrification and urbanization will contribute to greater energy use.

The *Outlook for Energy* identifies a significant evolution in the trade of oil and other liquids. A major shift is seen as North America will likely become a net exporter of liquids by 2020 as supplies of so-called tight oil, natural gas liquids and bitumen from oil sands increase. This is expected to open new trading opportunities as Asia Pacific's net imports are projected to rise by nearly 80 percent by 2040. Africa's liquids exports are expected to decline as local demand more than doubles. In Latin America, growth in supplies is anticipated to outpace demand as supplies of deepwater and unconventional liquids expand.

North America unconventional gas production will nearly triple by 2040 and the region is expected to surpass the combined output of Russia and the Caspian region as the largest gas-producing area. In Asia Pacific, gas production is seen doubling by 2040, driven partly by unconventional production technologies. Demand in the region is expected to climb by about 170 percent, according to the outlook, and as a result, Asia Pacific will likely overtake Europe as the world's largest gas importer.

Natural gas is expected to be the fastest-growing major fuel source during the outlook period as demand increases by about 65 percent. Half of that increase will come from the Asia Pacific region, led by China. Utilities and industrial operations are expected to account for about 80 percent of the demand increase worldwide, as operators increasingly choose natural gas because of its lower emissions and versatility as a fuel and feedstock. By 2040, natural gas is expected to account for more than a quarter of global energy use, surpassing coal in the overall mix.

Demand for coal is expected to rise through 2025 and then decline as China's economic growth gradually slows and it follows the shift seen in Organisation for Economic Co-operation and Development (OECD) countries toward cleaner fuels. Still, over time, global coal demand is expected to remain most prominent in Asia Pacific, primarily to support growing power-generation requirements.

Other key findings of the outlook include:

- Non-OECD countries will represent 70 percent of global energy demand by 2040, but energy demand per person in these nations will remain well below OECD levels.
- Energy required to meet rising electricity demand will account for about half of total demand growth.
- Technologies that unlock new unconventional oil and gas supplies will help enable oil and natural gas to meet about 65 percent of global energy demand growth.
- Progress on curbing carbon dioxide emissions through 2040 will be led by OECD nations as energy demand declines and a shift to lower-carbon fuels occurs. Energy-related carbon dioxide emissions in those countries are projected to be about 10 percent below 1980 levels, even though they will have about 40 percent more people and significantly larger economies.

- Across OECD nations, the outlook assumes the implied cost of policies to reduce greenhouse gas emissions will reach about $80 per tonne in 2040.
- Oil is expected to remain the No. 1 energy source and demand will increase by nearly 30 percent, driven by expanding needs for transportation and chemicals.
- By 2040, abundant sources other than conventional crude and condensate will account for about 45 percent of global liquids production, compared with less than 25 percent in 2010. Remarkably, estimates of remaining recoverable crude and condensate relative to current demand have risen from about 60 years in 1981 to about 150 years as of 2013.
- Rising natural gas demand will be met with abundant new supplies and significant expansion in trade as unconventional gas production nearly quadruples and LNG trade triples by 2040.

For more information about ExxonMobil's Outlook for Energy, visit www.exxonmobil.com/energyoutlook.

Cautionary Statement: Statements in The Outlook and this release relating to future events or conditions are forward-looking statements. Actual future global or local conditions (including economic conditions and growth, population growth, energy demand growth and mix, energy supply sources, efficiency gains, the impact of technology, and carbon emissions) could differ materially due to changes in supply and demand and market conditions affecting oil, gas, and other energy prices; changes in law or government regulation and other political events; changes in technology; the occurrence and duration of economic recessions; the actions of competitors; the development of new supply sources; demographic changes; and changes in other assumptions or factors discussed in The Outlook and under the heading "Factors Affecting Future Results" on the Investors page of our website at www.exxonmobil.com. See also Item 1A of ExxonMobil's latest Form 10-K.

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