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ExxonMobil: Global energy demand to rise 35% through 2030

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WASHINGTON, DC, Dec. 10 -- Global energy demand will be about 35% higher in 2030 than it was in 2005, requiring trillions of dollars of investment and a commitment to innovation and technology, ExxonMobil Corp. said in its latest long-term energy outlook.

It also forecast a natural gas supply expansion, particularly in the US, where production from unconventional reservoirs is rising rapidly. The outlook includes an assessment of how potential carbon emission policies would affect future energy demand and the fuel mix.

ExxonMobil expects demand outside the Organization for Economic Cooperation and Development rapidly to increase during 2005-30. In OECD countries, energy demand will change little despite average economic expansion of 50%.

“By 2030, there will be more than 1 billion additional people on the earth–in total, close to 8 billion people all seeking better living standards,” the forecast said. “Economic expansion will be key to reducing poverty and improving health and prosperity, and we expect developing countries to expand their economies to that end.”

Meeting that demand while protecting the environment are “interlocking challenges” which will require accelerated gains in energy efficiency, expanded availability of reliable and affordable supplies, and development and deployment of technology to mitigate the growth of emissions associated with energy use, it said.

The forecast suggested that efficiency gains would accelerate from 2005 to 2030, curbing global energy demand growth by about 65%. “Oil remains the largest energy source through 2030, but natural gas will move into second place ahead of coal,” it said. “In 2030, these three fuels will meet close to 80% of global energy needs.”

Gas will be the fastest growing major fuel. “By 2030, demand for gas will be more than 55% higher than in 2005. Technologies that have unlocked ‘unconventional’ gas will help satisfy this demand,” the forecast said.

The forecast also sees strong growth for nuclear and renewable fuels in generating electricity, with about 40% of the world’s power coming from these sources by 2030. It expects a shift from coal to gas, nuclear, and renewables for producing power. “This will be driven by environmental policies, including ones that seek to reduce emissions by putting a cost on carbon emissions,” it said.

Emissions and responses
Global carbon dioxide emissions will rise by an average 0.9%/year, "a significant increase but substantially slower than the pace of energy demand growth because of improved efficiency and a shift toward lower-carbon fuels." Progress on cutting carbon dioxide emissions beyond 2030 will require more aggressive gains in efficiency or the use of less carbon-intensive fuels, the forecast said.

The company believes a revenue-neutral carbon tax would have advantages over a cap-and-trade system in curbing carbon emissions. It said a carbon tax would create "a clear and uniform cost for emissions in all economic decisions." Such an approach would avoid the costs and complexities of having to build a new emissions allowances market and the need for new regulators and administrators to manage it. It also would not create market manipulation opportunities or require complex and costly enforcement systems.

"Returning the tax revenue to consumers through reductions in other taxes–payroll taxes or a simple dividend–reduces the burden on the economy and ensures that government policy is specifically focused on reducing emissions, not on becoming a revenue stream for other purposes," the forecast said. "Because global participation is so important to controlling emissions, a carbon tax may be a more viable framework for engaging participation by other nations."

Transportation fuels
ExxonMobil expects the global vehicle fleet's composition to change through 2030. Although conventional gasoline vehicles will remain in the majority, followed by diesel-fueled vehicles, hybrids and other advanced vehicles will grow rapidly, reaching about 15% of the world's total personal vehicle fleet compared to about 1% currently.

"ExxonMobil believes that biofuels from photosynthetic algae could someday play an important role in meeting the world's growing need for transportation fuels, while also reducing CO_2 emissions," the forecast said. "Scientists already know that certain algae naturally produce oils similar to the petroleum products we use today. If commercial quantities of these algae-based oils could be developed, they could avoid the need to build the extensive new delivery infrastructure that some other alternative transportation fuels might require."

ExxonMobil has entered a project with Synthetic Genomics Inc., a California biotech firm, to research and develop algae-based biofuels which would be commercially compatible with gasoline, diesel, and jet fuel. "Getting these algae fuels from the lab to broad commercial scale at the local gas station will be a tremendous undertaking and could require decades of work," the forecast said. The company expects to spend more than $600 million in the effort if research and development milestones are met.

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