

Fossil Fuels May Not Dwindle Anytime Soon

The U. S. Energy Information Administration foresees continued dominance for coal, gas and oil

By Daniel Cusick, ClimateWire on May 12, 2016



Based on its latest projections, EIA said global carbon dioxide emissions from energy activities will rise from 36 billion metric tons in 2012, the baseline year used for the 2016 outlook, to 43 billion metric tons in 2040. *Credit: PhotoDisc/Getty Images (MARS)*

Rapid economic growth in China, India, Indonesia, Brazil and other emerging countries will drive global energy consumption to nearly double by 2040, according to new projections released yesterday by the Department of Energy.

But the associated rise in carbon emissions will not keep pace with overall energy consumption, thanks to a shifting global energy portfolio that relies less on coal for power generation and more on natural gas and renewable energy resources, the U.S. Energy Information Administration said in its 2016 International Energy Outlook.

Based on its latest projections, EIA said global carbon dioxide emissions from energy activities will rise from 36 billion metric tons in 2012, the baseline year used for the 2016 outlook, to 43 billion metric tons in 2040.

That's a 34 percent increase in energy-related CO₂, compared to a 48 percent increase in overall energy consumption from 2010 to 2040, when EIA says the world will consume a record 815 quadrillion British thermal units (Btu) of energy.

But some critics of EIA's methodology say the projections on global energy use and CO₂ emissions failed to adequately account for major international policy initiatives, including last year's pledge by nearly 190 U.N.-member countries to make sharp reductions in energy-sector greenhouse gas emissions.

In a public rollout of the data at the Center for Strategic and International Studies, EIA Administrator Adam Sieminski said that the agency used more sophisticated modeling tools for the 2016 report than previously available, especially in the transportation sector, and that the world's demand for fossil fuels will continue to grow.

"Even in the aftermath of Paris, I think that our numbers suggest that growth and need for petroleum in transportation and industry is still going to be pretty strong," he said. "Those

numbers could come down over time, but it's still really hard to compete with the energy density that's in oil."

DON'T COUNT OUT FOSSIL FUELS

Among other things, the new report portends continued rising demand for natural gas, along with sustained growth in wind, solar and nuclear energy production. Renewables, led by wind and hydro power, are projected to be the fastest-growing energy resource over the next two decades, according to EIA, expanding by 2.6 percent annually through 2040.

Nuclear will also see solid growth, at 2.3 percent annually, underscored by China's commitment to add 139 gigawatts of nuclear capacity to its grid by 2040. Natural gas, long the No. 3 source of global energy behind oil and coal, will by 2030 become the world's No. 2 resource as coal consumption plateaus with the onset of new international carbon regulations. Consumption of oil and other forms of liquid petroleum will fall modestly over the next 24 years, from 33 percent of total marketed energy consumption in 2012 to 30 percent in 2040. Oil will continue to be a primary fuel for the transport sector, as well as a key fuel for industrial uses in emerging countries. But experts cautioned against the idea that fossil fuels will become 20th-century energy anachronisms by the middle of the 21st century. In fact, fossil fuels will still account for 78 percent of global energy use in 2040, even as the growth in non-fossil fuels exceeds that of oil, coal and gas.

"Abundant natural gas resources and robust production—including rising supplies of tight gas, shale gas, and coalbed

methane—contribute to the strong competitive position of natural gas," EIA said in the outlook.

While considerably diminished from a decade ago, coal-fired power generation is expected to grow by 0.6 percent annually over the coming years and will account for between 28 and 29 percent of global power generation by 2040, compared to 40 percent in 2012.

Natural gas and renewables, including hydropower, are also expected to claim between 28 and 29 percent of total global power generation by 2040, with the remainder coming from existing and new nuclear plants.

"This is going to happen in many places around the world, and it will reduce carbon dioxide emissions by a significant amount," Sieminski told energy policy experts and journalists gathered at CSIS's granite-and-glass headquarters on Rhode Island Avenue.

In one of the first high-level analyses of how U.S. carbon regulation will affect global energy markets, EIA projects that U.S. EPA's Clean Power Plan would further shave coal consumption by roughly 1 percent after 2020 while driving a comparable increase in renewable energy deployment.

"It changes the global numbers a little bit, it changes the U.S. numbers more, and it particularly changes coal in the U.S. by more," Sieminski said. "You can see coal plateauing."

CRITICS SLAM PROJECTIONS

Among the world's three largest coal users—the United States, China and India—only India is projected to see an overall

increase in coal consumption by 2040. China is expected to begin reducing its use of coal after 2025, while the United States is already seeing a downward trajectory in coal use, one that could grow steeper if the Clean Power Plan is upheld in court.

While U.S. markets and policy will continue to be critical benchmarks for global energy, the United States will not be among the fastest-growing energy markets going forward, EIA found.

In fact, by 2040, nearly two-thirds of all of the world's energy use will be in developing countries outside the 34-member Organisation for Economic Co-operation and Development. Among non-OECD members, Asian countries like China, India and Indonesia will account for 55 percent of all new energy use through 2040, the analysis found.

Increasing oil and liquid fuels consumption for industry and transportation will be particularly strong in countries like China and India, Sieminski said, where rising incomes and a proliferation of privately owned cars and trucks has led to significant increases in vehicles miles traveled (VMT).

But critics like David Turnbull of the climate-focused nonprofit group Oil Change International said EIA should have given stronger consideration to shifting national and international climate policies, especially over the last several years.

"We all know that we're moving in a different direction now," Turnbull said. "The Paris Agreement was a clear indication that the fossil fuel era was ending. To make a projection that ignores some of these major shifts in public opinion, in energy markets,

in renewable energy policy, is leaving out a big piece of the picture."

A spokesman for EIA stressed in an email that the agency did not ignore the Paris accord or other international agreements in its analysis.

In fact, the report makes clear that EIA "has tried to incorporate some of the specific details," such as renewable energy goals put forward in the U.N. Framework Convention on Climate Change, in its 2016 IEO reference case. "However, a great deal of uncertainty remains with regard to the implementation of policies to meet stated goals."

In his comments at CSIS, Sieminski acknowledged that long-term projections like those in the IEO are imperfect and that policy and technology changes can lead to radically different outcomes than the best analysis can predict.

"There's probably a lot of flex in these numbers," Sieminski said. "Does that mean that we are wasting taxpayer dollars doing it? The answer is no. It's hugely valuable to policymakers, it's hugely valuable to the public."

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