INDIA CONSIDERS TO GO NET-ZERO EMISSIONS BY 2050. CAN IT ACHIEVE THE TARGET?

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Top Indian government officials are debating whether to set a target for net-zero greenhouse gas <u>emissions</u> by 2050. Doing so would mean an overhaul of a coal-reliant energy sector, transport, heavy industry and even the nation's sluggish bureaucracy.

All that must be achieved while the world's third-biggest emitter also meets the aspirations of 1.4 billion people for faster economic development, which will only happen with an accelerated pace of industrialization and energy demand.

Committing to a legally binding net-zero target would help India attract some of the trillions of dollars in investment that'll be required for a green transformation, lawmaker Jayant Sinha, a member of Prime Minister Narendra Modi's Bharatiya Janata Party and an advocate of a 2050 goal, said in an interview.

"The world is not going to achieve its targets of halting global warming unless India is able to reduce its carbon emissions and India changes its trajectory right now," Sinha said. Here are some of the key challenges:

Ramping Up Renewables

Reforming India's electricity sector is key to delivering lower emissions. Renewables are already making some inroads in a system where coal is currently used for almost 70% of power generation. Since Modi took office in 2014 solar and wind capacity has expanded to about 93 gigawatts.

Meeting the nation's existing target of 450 gigawatts of renewables by 2030 is already a massive lift. Hitting net zero will require an even more dramatic acceleration.

India will also need to fix its money-losing distribution utilities, make more land available for wind and solar farms, and support development of additional transmission networks. It'll also have to balance its renewables push against a desire to reduce dependence on foreign suppliers. Taxes on imports of foreign solar panels are intended to spur domestic manufacturing, but could make the rollout of cleaner energy more expensive in the short term.

Fossil Dependent

Just three fuels meet about 80% of India's energy demand: coal, oil and solid biomass such as fuelwood, animal waste and charcoal. Changing that mix will require more than simply adding more renewables.

Coal use is expected to rise, even if India stops building new power plants. That's because existing coal power plants are running far below capacity, which the country will look to maximize. Oil and petroleum are used to power not only cars, trucks and railways, but also industrial machinery and even the pumps which deliver water for India's agricultural sector. Tens of millions of homes still rely on cheap biomass fuels for cooking, and subsidies to switch them to cleaner liquefied petroleum gas cylinders have been trimmed.

To make matters worse, poor quality scrubbers on power plants burning coal make them a major contributor to poor air quality. The Indian capital New Delhi is the world's most-polluted capital city, according to IQAir.

Rising Demand

India's energy use doubled since 2000 as hundreds of millions of citizens added an electrical connection, and the nation's consumption is forecast to accelerate sharply. It'll be driven both by industry and households, which are adding appliances including air conditioners, refrigerators and space heaters.

The country will have the fastest growing rate of energy consumption globally through 2050, the U.S. Energy Information Administration forecasts.

All that means India needs to add energy capacity equivalent to the entire European Union over the next two decades, the International Energy Agency said in February. Meeting that with cleaner electricity sources will require more hydro-power and nuclear energy, as well as wind and solar. The nation also needs stronger and more flexible electricity grids, and vastly improved energy efficiency measures.

Electrifying Transport

The global shift to electric vehicles is happening far more slowly in India, with the costs of battery powered-models too high, access to charging infrastructure limited and concerns over the reliability of power grids. By 2040, only about a third of new passenger cars sold will be battery-powered, compared with about 70% in China and Germany.

Freight vehicles also pose a challenge, and account for about 45% of the country's road transport emissions. "It will be really difficult for India to replace oil as transportation fuel," said Senthil Kumaran, head of South Asia oil at industry consultant FGE. "Freight will rely on diesel no matter what."

Still, some firms are positioning for more uptake. Ola Electric Mobility Pvt. Ltd. hopes to make 10 million electric two-wheelers a year by the summer of 2022 at a plant on Bangalore's outskirts. India is also examining plans to run long-haul vehicles on liquefied natural gas and hydrogen.

Cleaner Industry

As a still-industrializing economy, India's emissions from making steel, cement, chemicals and other carbon-intensive materials is set to rise regardless of a climate push. But the country could make a dent in those emissions by deploying more energy-efficient measures, switching to cleaner fuels and embracing carbon-capture technology.

Increasing clean-energy spending will go a long way in helping the industrial sector. The IEA estimates that green investment across the energy sector, which includes energy, transport, and industry will need to be three times higher between 2025 and 2030, relative to the average from 2015 to 2020. That jump could help put the country on the greenest track that the IEA has modeled. How India supports research and innovation in technologies including energy storage and carbon-capture will be crucial to success in meeting any new target, said Santhosh Jayaram, head of <u>climate change</u> practice at KPMG India.

Better Bureaucracy

India will also have to give its under-funded environmental regulators more resources and power, and ministries will need to get better at translating policy into action. For decades, the nation has disappointed in efforts to improve crumbling infrastructure, extend access to public services and root out corruption.

One solution could be to set up a climate change commission, similar to bodies established in the U.K. and New Zealand, to monitor progress and help devise mechanisms to achieve long-term emission reductions, according to Sinha. The U.K.'s Climate Change Committee has been credited with pushing the government to set the most ambitious goal among G-20 nations.

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