## Coal use continues to grow

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<u>Rajendra Pachauri</u>, the Indian academic who chairs the <u>Intergovernmental Panel on Climate</u> <u>Change</u>, recently declared that we have "the means to limit climate change" and that "all we need is the will to change."

That's a rather glib statement given that just five years ago, Pachauri was lamenting the fact that so many of his fellow Indians were living in dire energy poverty. In July 2009, Pachauri asked reporters "Can you imagine 400 million people who do not have a light bulb in their homes?" He continued, saying "with the resources of coal that India has, we really don't have any choice but to use coal."

Therein lies the story. While the latest IPCC report warns us, once again, about the possible dangers of anthropogenic greenhouse gas emissions, the energy story of the moment is coal. And because coal remains an essential fuel for producing electricity in rich and poor countries alike, there's little reason to believe that we will see any significant decline in global carbon-dioxide emissions in the years and decades ahead.

Indeed, coal may be the energy villain of the moment, but the carbon-heavy fuel has been the fastest-growing source of global energy since 1973. Its growth continues. In 2013 alone, global coal consumption jumped by about 2 million barrels of oil equivalent per day. That increase was about 50 percent more than the rate of growth in oil use and about three times the growth seen in natural gas consumption.

Coal-fired generators now provide about 40 percent of all global electricity. And while the U.S. and wealthy countries in western Europe are mandating and subsidizing wind and solar projects, countries throughout Asia are rapidly expanding their coal-fired generation capacity. India alone is planning to add about 90,000 megawatts of new coal-fired capacity by 2018. Globally, some 500,000 megawatts of new coal-fired capacity is planned for the next two and half decades. That's more than 1.5 times as much coal-fired capacity as now exists in the U.S.

Coal use is growing so fast that the International Energy Agency forecasts that within four years or so, global coal use will exceed global oil use, on a Btu basis. The last time coal consumption exceeded oil use in the United States was in 1949.

Few countries provide a better example of the essentiality of coal and its role in addressing energy poverty than Pakistan. Proving that point requires only a comparison of the southern Asian nation with Texas, which is a state that covers about the same amount of land as Pakistan.

Pakistan has about 196 million people and 24,000 megawatts of generation capacity. Texas has about 26 million people and 110,000 megawatts of electricity generation capacity. Put another way, Texas has about one-seventh of Pakistan's population, but four times as much electric generation capacity.

More electricity use means more wealth. Always. Everywhere. That can be seen by considering that the average Texan consumes about 14,000 kilowatt-hours of electricity per year. The average Pakistani: less than 400 kilowatt-hours per year. An average Texan uses about 35 times as much electricity as an average Pakistani. That increased consumption is reflected in Texas' per-capita GDP of about \$46,500 per year, roughly 15 times Pakistan's per-capita GDP of about \$3,100 per year.

To help bring more of its people out of the dark, Pakistan is planning to build 15,000 megawatts of new coal-fired power plants. Included is a 3,900-megawatt complex of coal-fired generators expected to come online in 2017.

It's easy to demonize coal. And it's just as easy to claim, as Pachauri did, that solving climate change only requires the "will to change."

Coal use will endure for decades to come because the fuel is cheap, abundant, and perfectly suited to electricity generation. Unless another energy source is able to compete with coal — in terms of cost, scale, and reliability — the black fuel will continue dominating the electricity-generation business.

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