

Headline: The renewable energy revolution

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SYDNEY—In the United States and Europe, the benefits of renewable energy are predominantly seen as environmental. Energy from the wind and sun can offset the need to burn fossil fuels, helping to mitigate climate change.

In China and India, however, renewable energy is viewed in a remarkably different fashion. The relatively rapid transition away from fossil fuels in both countries is driven not so much by concerns about climate change as by the economic benefits renewable energy sources are perceived as conveying.

Indeed, while the economic benefits of renewables can be attractive to advanced economies such as Germany or Japan (both of which are rapidly moving away from fossil fuels), the advantages for emerging industrial giants are overwhelming. For India and China, an economic trajectory based on fossil fuels could spell catastrophe, as efforts to secure enough for their immense populations ratchet up geopolitical tensions. Aside from increased energy security, a low-carbon economy would promote domestic manufacturing and improve local environmental quality by, for example, reducing urban smog.

To be sure, fossil fuels conferred enormous benefits on the Western world as it industrialized over the past 200 years. The transition to a carbon-based economy liberated economies from age-old Malthusian constraints. For a group of select countries representing a small slice of the global population, burning fossil fuels enabled an era of explosive growth, ushering in dramatic improvements in productivity, income, wealth and standards of living.

For much of the past 20 years, China and India led the charge in claiming the benefits of fossil fuels for the rest of the world. Recently, however, they have begun to moderate their approach. As their use of fossil fuels brushes up against geopolitical and environmental limits, they have been forced to invest seriously in alternatives—most notably, renewables. In doing so, they have put themselves in the vanguard of a planetary transition that in a few short decades could eliminate the use of fossil fuels altogether.

The economic arguments advanced against renewable sources of energy—that they can be expensive, intermittent, or not sufficiently concentrated—are easily rebutted. And while renewables' opponents are legion, they are motivated more by interest in preserving the status quo of fossil fuels and nuclear energy than by worries that wind turbines or solar farms will blot the landscape.

In any case, those wishing to halt the expansion of renewables are unlikely to triumph over simple economics. The renewable energy revolution is not being driven by a tax on carbon emissions or subsidies for clean energy; it is the result of reductions in the cost of manufacturing that will soon make it more cost-effective to generate power from water, wind and the sun than from burning coal.

Countries can build their way to energy security by investing in the industrial capacity needed to produce wind turbines, solar cells, and other sources of renewable energy at scale. As China and India throw their economic weight into the renewables industrial revolution, they are triggering a global chain reaction known as “circular and cumulative causation.”

Unlike, mining, drilling, or extraction, manufacturers benefit from learning curves that make production increasingly efficient—and cheaper. Investments in renewable energy drive down the cost of their production, expanding the market for their adoption and making further investment more attractive. From 2009 to 2014, these mechanisms drove down the cost of solar photovoltaic energy by 80 percent and reduced the cost of land-based wind power by 60 percent, according to Lazard's Power, Energy & Infrastructure Group.

The impact of the rapid uptake in renewable energy could have consequences as profound as those unleashed by the Industrial Revolution. In the 18th century, the economies of Europe and the United States initiated the transition to an energy system based on fossil fuels without fully understanding what was happening. This time, we can see the way things are changing and prepare for the implications.

For the moment, the outlook appears promising. Efforts to reduce carbon dioxide emissions may not be the prime driver of the renewable energy revolution; but it is very possible that without the revolution, efforts to minimize the impact of climate change would never succeed. If we are able to avoid the worst dangers of a warming planet, we may have India and China to thank for it. Project Syndicate

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