

# India marches towards Green Energy



When completed, the Pavgada solar park in southern India is expected to generate 2,000 megawatts of electricity, making it the world's largest solar station. (Karnataka Solar Power Development Corp.)

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When I met then Chief Minister Narendra Modi a few months before his election as India's Prime minister, he presented his book to me titled "Convenient Action". Reading the book, one realizes how much he had done in Gujarat, drastically reducing the state's carbon emissions. Based on that, without any doubt, no other person has done more for India's march towards green energy than Narendra Modi even when he was a Chief Minister. As Prime Minister, he is already doing lot more.

Today, under Prime Minister Narendra Modi's leadership, India is on the rapid march towards green energy.

India was first in the world to have a dedicated ministry for renewable energy (MNRE) which was constituted as Ministry of Non-conventional Energy Sources (MNES) in 1992, then renamed as MNRE in 2006. Further, in order to promote RE, dedicated institutions were formed under MNRE i.e. Indian Renewable Energy Development Agency, National Institute of Solar Energy, Centre for Wind Energy Technology, etc.

Now, India is building the biggest solar power station in the world at Pavgada in the southern state of Karnataka. The Pavgada Solar Park is expected to produce 2000 megawatts of electricity, enough to power 700,000 households.

India is constructing massive solar stations at furious speed, reducing its dependence on coal and other carbon emitting fossil fuels responsible for global warming, thus helping to drive the global revolution for green energy.

While last year, the Trump administration unwisely has abandoned the crucial Paris agreement on fighting climate change, in March 2018, India hosted the inaugural conference of the International Solar Alliance, the organization launched by Prime Minister Narendra Modi aimed at raising \$1 trillion to promote solar generation and technology in 121 nations.

Last year, thanks to its low cost solar panels as well as government incentives for renewable energy, India has left behind Japan, to be the world's third-biggest market for solar power, after China and the United States. Modi has pledged to generate 100 gigawatts of solar capacity or 175 GW of renewable energy source by 2022—about 30 times what it had three years ago; that is equal to the entire energy output of Spain. The government has set an ambitious target of generating 40% cumulative electric power through renewable energy sources by 2030.

Coal still produces 58% of India's electricity, while wind supplies 10% and solar 5% as per government figures. So India has a long way to go. From last year, India has nearly doubled its capacity producing 20 gigawatts of solar power.

Thus, the solar sector is on an exponential growth path, with PV installs reaching over 16.6 GW, including 863.92 MW from solar roof top projects. The Modi government has taken several steps to boost PV rooftop installations. In 2017, it unveiled its 'rent a roof' policy, under which solar developers install PV arrays on rented roof space, and then offer leases to households to feed power to grid. Concessional loans up to \$1375 million have further been made available for PV rooftop projects.

Three years back, California boasted the world's biggest solar farm: 579 megawatts of solar power station in the antelope Valley, just north of Lancaster. But China eclipsed that by a series of huge solar parks; it being the largest producer of photovoltaic panels that capture the sun's radiation converting it into electricity.

India has approved plans for 14 solar parks larger than Solar Star. Most lie in India's southern scrubland and northern deserts.

Solar power potential in India is huge, according to Sanjay Aggarwal, managing director of the Indian office of Fortum, a Finnish energy company that is generating 100 megawatts at Pavgada.

Most of solar power in India and China, unlike in the United States, Germany, Austria and other nations with big renewable programs, comes not from decentralized rooftop panels but from

big parks. Modi government has enticed developers by acquiring land, building transmission links and readymade buyers for the new power, usually state-owned companies who have wherewithal.

As per wind energy, India stands fourth among the total installed wind power capacity (23 GW) globally and is behind China, USA and Germany. But now, India is fastest growing solar market in the world. With its great renewable energy (RE) potential and policies, India ranks third just behind USA and China but ahead of Germany, France, UK and Japan in the recent RE attractiveness Index by E & Y.

Thus, in 2017, India achieved new milestones and a solid footing for the development of green energy.

Due to its huge population, according to union of Concerned Scientists' latest figures available (2015), India is 3<sup>rd</sup> largest emitter of CO<sub>2</sub> (2066.01 million tons), after China (9040.74), USA (4997.5), and Russia (1468.99) being the 4<sup>th</sup> largest while Japan is 5<sup>th</sup> (1141.58). But regarding per capita CO<sub>2</sub> emissions, India is one of the lowest (1.58 metric tons) to America's (15.53), China's (6.59), and Russia's (10.19) while Japan emits 8.99 metric tons per person.

Another major problem India faces is its burgeoning population, even though, over the years, its population growth rate has declined considerably to 1.3% per year. As per UN reports, India's population will surpass that of China by 2024. India will add 14,871,727 people in 2018. To feed, clothe, educate and employ these many people year after year is a colossal task for any nation. Prime Minister Modi has done excellent job in many fields. But he has not done much to stop India's population increase. Perhaps, politically, this is a touchy issue. But regardless of politics, this job is vitally important. A mass movement with the participation of all the parties and NGOs is necessary. We urge the Prime Minister and the rest of all our political parties to bipartisan tackle this perennial problem. Data shows that any country, when it achieves zero population growth rate, becomes a developed nation within a short time.

Will India achieve this milestone in the near future?