

The renewable purchase obligation is hurting

India's major electricity reforms were ushered in through the landmark Electricity Act of 2003. This Act removed the licensing requirement to produce power, and also led to the unbundling of generation, transmission and distribution of electricity at the state level. It introduced the radical idea of open access, and a choice for consumers. It was also the first time that the use of renewable energy (RE) was advocated as part of the national energy policy.

Five years later, India announced the National Action Plan on Climate Change (NAPCC), which was to be implemented through eight missions. One of these was the national solar mission, whose aim was to promote the development and use of solar power. Specific targets were set. Soon thereafter came the policy of renewable purchase obligations (RPOs), which were to be implemented by state governments.

The RPOs make it compulsory for all large consumers of energy to ensure that a certain percentage of that energy mix is from renewable sources such as wind and solar. The compulsion is like an implicit subsidy boost to the renewable sector. It generates demand for a sector in its infancy.

The RPO regime predates India's signing the Paris accord, where it made international commitments to reduce carbon emissions, and also increase the use of renewable energy. The Narendra Modi government in 2015 quite dramatically revised upward the national RE ambition to achieve 175GW by 2022, of which 100GW would be from solar.

As of December 2017, solar and wind capacity in the country was 17GW and 33GW, respectively. This means that in the next four years, solar capacity needs to increase by 5.8 times, at a compound annual growth rate of 55.6% per year. Wind energy capacity has hardly increased in the previous year, so the required growth rates are looking extremely ambitious.

Meanwhile, in the next couple of years, the RPOs will go up to almost 17% of total electricity consumed. This is enforced by the respective state electricity regulatory commissions. They are following a pattern recommended by the Central government and regulator.

The Economic Survey of 2017 indicated that the social cost of renewables is three times that of coal, at around Rs11 per kilowatt-hour. One MW of solar plant requires 5 acres of land, whose cost is loaded on to the power cost, even assuming the land acquisition itself is hassle-free. Solar and wind have plant load factors of only 15-20%, which means the installed capacity is idle for nearly 80% of the time. Thus a 50MW solar plant generates consumable power equivalent to about 10 or 12MW. On the other hand, a thermal plant can operate at a plant load factor of as high as 95%. This is true especially of captive power plants.

When RE power gets priority, the thermal power plant has to back down. As the RPO mix rises to 17%, it would mean substantial back-down of coal-based power. This leads to reduced plant load factor, greater inefficiency and higher overheads. Thus the cost of thermal power increases, and added to that mix is higher cost RE power.

Indian industry is already suffering the disadvantage of higher energy cost due to levies like the coal cess (rechristened clean energy cess). This cess has gone up by 800% in the last few years; from Rs50 per tonne of coal in 2010 to Rs400 in 2016. It is India's de facto steep carbon tax (see [Mint article "India's De Facto Carbon Tax Is Excessive"](#), 8 February 2017). With RPO thrown in, the cost increases much more.

Furthermore, not every state has adequate RE power available to be purchased. So, instead, renewable energy certificates (RECs) have to be purchased in lieu of RPOs. RECs increase the cost of power, since these are in addition to the total thermal power that needs to be produced and consumed anyway.

The high cost of RPOs and attendant RECs is not only affecting the industry, but also the beleaguered distribution companies. In its aggressive pursuit of NAPCC goals, India has inadvertently increased the cost of energy for everybody. Solar and wind energy can never completely become the energy source for industries that need uninterrupted, reliable, steady and high wattage electricity. That base load has to come from thermal power. RE power can be deployed in other applications like lighting, electric vehicles recharge infrastructure or off- grid rural electrification.

The rush towards a mega solar power target will also hurt the “Make In India” aspiration, as has been pointed out by journalist Swaminathan Anklesaria Aiyar.

RPO is the crutch and implicit subsidy for the growth of RE power. But ironically, recent auctions reveal that solar power has achieved grid parity. The most recent winning bid in the solar auction was Rs2.44. Of course, this was because land was made available from the state government and the bid was based on a long-term power purchase agreement backed by a state government guarantee. So if solar has become commercially viable, why are we still propping it up with continued RPOs?

India’s NAPCC ambitions are laudable, and so are its international commitments for action to mitigate climate change. But in doing so it need not behave “holier than the Pope”, to the complete detriment of its domestic industry and discoms. It is high time that the RPO policy was re-examined, and relief given to the industry.

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