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The Latest Solar Rooftop Program Might Just be Tipping Point for Transformative Change in India’s Power Sector

PM Surya Ghar Muft Bijli Yojana has great transformative potential for India’s power sector – to enable affordable electricity access for millions of households; catalyze entrepreneurship and job creation; give a boost to indigenous industries; and allow the government to do away with tariff-distorting subsidies.

The Union Cabinet approval of Rs 75,021 crore for the ‘PM Surya Ghar Muft Bijli Yojana’ is a welcome development – one that signifies a strong commitment to renewable energy. The scheme offers subsidies up to 60% of installation cost to one crore Indian households on the cost of 2-3 kW rooftop solar installations which, once operational, will provide around 300 units of free electricity every month. The participating households can access collateral-free low-interest loans for the installation. Like any potentially transformative program, the PM Surya Ghar Muft Bijli Yojana comes with its share of opportunities and challenges. Let us examine the opportunities first.

Benefits and Opportunities

The installation of one crore rooftop solar panels, each of 2-3 kW capacity, will add a significant 20-30 GW of solar power to India’s installed capacity, which will help in reducing India’s reliance on fossil fuels and avoiding CO2 emissions.

The scheme will give a much-needed fillip to the rooftop solar segment – which has grown slower than expected over the past decade – and improve energy access in rural and remote areas. Even houses that aren’t on the grid now have the opportunity to generate their own electricity.

For long, many States have offered generous subsidies or free electricity to their consumers. Now, with consumers being able to generate much of their own electricity, the States that see healthy uptake of the scheme could potentially reduce or retract their existing subsidies. This could lessen the cross-subsidy burden on the commercial-and-industrial sector and potentially improve the financial health of distribution companies (Discoms). Conversely, retracting the existing subsidies might incentivize consumers to opt for rooftop solar in the first place. It will be interesting to see how things unfold.

PM Surya Ghar Muft Bijli Yojana has the potential to create jobs in functions such as manufacturing, logistics, supply

chain, sales, installation, and operations and maintenance. It will also open opportunities for providers of products and systems that enable the integration of solar power into the grid. However, like all new initiatives, this one too will have to be mindful of some challenges.

Challenges

Participants in the scheme will have to bear 40-60% of the capital expenditure upfront – which comes to tens of thousands of rupees – depending on the size of the installation. Else, they will have to arrange for it through loans. This will be difficult for marginal households. It is also possible that the prospect of this initial investment could discourage other households from participating in the scheme, especially if their power consumption wasn’t high in the first place and was adequately covered by state government subsidies.

Consumers can evaluate the long-term viability of participating in the scheme



for themselves with the help of a few assumptions and calculations. However, there is little or no clarity on the state-wise rates at which they can sell surplus units to Discoms. Moreover, rooftop installations need periodic maintenance, which the owners will either have to pay for or manage on their own. It is necessary to create awareness and provide information about these above aspects, and to impart the necessary technical skills to the participants in the scheme, to accelerate its adoption.

From the perspective of Discoms, the biggest challenge with implementing the PM Surya Ghar Muft Bijli Yojana is that the power generation from rooftop installations will happen during the day when there is already a surplus of power. Absorbing this power will be a challenge, as will be selling it to consumers after sundown when the electricity prices are usually high. States with lesser population or low levels of industrialization will find it particularly challenging to manage the intermittency of solar power and maintain grid stability. Discoms may need to install battery storage solu-

tions, the cost of which will add to the financial stress they are already facing. They might also need to bear the cost of installing net metering which is not covered under the GoI RDSS Scheme. As Discoms are subject to State Electricity Regulatory Commission Regulations, this points to a need to create an effective regulatory framework and standard operating procedure to guide the installation of net metering and ensure time-bound energy settlement.

All these considerations must be addressed to ensure the scheme is a win-win for all and not a zero-sum game between consumers, renewable energy service companies, and Discoms. The trick, in a nutshell, is to balance consumer benefit with Discom's viability.

Areas that need government interventions or government-industry partnerships

The push for rooftop solar will increase the demand for solar panels and solar cells, and while domestic manufacturing is steadily growing, the supply chain

must be secured to meet the competing demand from rooftop solar and large-scale solar projects. A uniform policy across the States with roof top solar installations including energy billing & settlement mechanism, is essential. Initiatives to raise consumer awareness and impart basic technical skills will also be crucial. The government must bridge the gap between the overarching policy framework and its on-ground implementation.

There is no doubt that the PM Surya Ghar Yojana has great transformative potential for India's power sector – to enable affordable electricity access for millions of households; catalyze entrepreneurship and job creation; give a boost to indigenous industries; and allow the government to do away with tariff-distorting subsidies. One hopes that the steps and measures we take hereon will not only make the scheme a success but also address these long-standing challenges faced by India's energy ecosystem. Widespread change often needs a tipping point. Time will tell if this is it.