

Trans-segmental cooperation is the key to implement the renewable energy initiatives announced in the Interim Budget 2024

By Anasuya Gangopadhyay

In a welcome move, the Interim Budget 2024 provides great impetus to the rooftop solar segment through the 'Pradhanmantri Suryodaya Yojana'. Under this scheme, the current rooftop solar subsidy rate of 40 percent has been increased to 60 percent. Allocation for the solar power sector has seen an increase of 48 percent compared to the last year. At present, India has 11 GW of rooftop solar installations, but the major potential remains untapped. The new scheme with considerable increase in financial support for rooftop solar installations will offer a much-needed boost to the field.

While the scheme and simplified support mechanisms will provide momentum, trans-segmental cooperation within the ecosystem is essential for the successful implementation of the initiative.

For example, there is a strong need for cooperation between stakeholders, such as distribution companies (DISCOMs), executing vendors, capacity-building organisations, and customers. While most DISCOMs express concerns regarding the revenue impact caused by increasing rooftop solar in their consumer base, rooftop solar could help them optimise the power procurement schedule, reduce power purchase costs, and delay network expansion expenses.

However, that will require new and innovative business models. Business models need to be designed to address challenges related to revenue loss and account for the increased operational expenditure of DISCOMs. The likely technical challenges the DISCOMs will face, such as power quality and anti-islanding, also need attention. Anti-islanding protection will help rooftop solar systems (inverters) detect when the grid is unavailable, and the system can stop feeding power back into the grid, ensuring the safety of the personnel working on a switched-off grid. Balancing the interests of all stakeholders through mutual coordination is key to the successful implementation of the rooftop solar policy announced in the interim budget.

Another aspect is balancing the demand and supply of electricity in the overall grid. Solar power is available only during the day, and the generation is intermittent, so houses with rooftop photovoltaic or solar power will require grid support when solar power is unavailable. Hence, there is a need for energy sources that operate only for a few hours daily, which reduce their plant load factors considerably. This scenario is not ideal for energy suppliers, especially coal plants. While grid-scale bulk battery storage is one of the options already being supported through viability gap funding (through an allocation scheme announced by the Union Minister for Power and New and Renewable Energy in December 2023), we need a portfolio of solutions.

A business model to ensure a reasonable return on investment for such energy sources must be designed after rigorous deliberation. Integrated systems thinking involving all the segments of the energy generation sector—such as base generation, storage, renewables, and hydro generation—could initiate trans-segmental dialogues that are essential to achieve the desired model.

Monitoring and maintenance are two other aspects that are crucial for household-level rooftop solar plants. Installing a large number of solar rooftop plants at the household level will also create employment opportunities for youth. Various capacity-building or skill-development organisations should come forward to provide the required training in collaboration with DISCOMs.

The offshore wind segment also benefitted from the budget as a viability gap funding for an initial capacity of 1 GW has been allocated. The segment is still developing in India and has much growth potential. India's estimated offshore wind potential is 71 GW, according to the Ministry of New and Renewable Energy. Viability gap funding will be a great support to ensure the economic sustainability of pioneer plants. However, along with viability gap funding, there is a need for the development of electricity evacuation systems and port infrastructure. Mutual collaboration between all the stakeholders and a policy push, as provided in the interim budget, will ensure the successful implementation of the initiative.

These schemes open up opportunities to create a win-win situation from environmental and development perspectives. They will reduce the dependence on non-renewable energy sources and promote development by providing electricity to more households. Inter-segmental interactions within the energy generation sector will play a significant role in ensuring the success of these policies. The focus on renewable energy in the budget will ensure that the country remains on the path to achieving net zero by 2070.

We hope the initiatives announced in the interim budget continue to be supported and bolstered in the full budget. Successful realisation of these schemes will help us reach our ambitious target of 500 GW of renewable energy capacity by 2030 and ensure energy security in terms of availability, accessibility, and affordability.

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