Revitalising PM-KUSUM

We can unlock the scheme's promises in many ways

SHALU AGRAWAL & ANAS RAHMAN

The Union Minister of Power, New and Renewable Energy recently reviewed the progress of the PM-KUSUM scheme and reaffirmed the government's commitment to accelerating solar pump adoption. Launched in 2019, PM-KUSUM aims to help farmers access reliable daytime solar power for irrigation, reduce power subsidies, and decarbonise agriculture. But pandemic-induced disruptions, limited buy-in from States, and implementation challenges have all affected the scheme's roll-out. How can we unlock the opportunities it promises?

Barriers to uptake

PM-KUSUM provides farmers with incentives to install solar power pumps and plants in their fields. They can use one of three deployment models: off-grid solar pumps, solarised agricultural feeders, or grid-connected pumps. Off-grid pumps have been the most popular, but the nearly 2,80,000 systems deployed fall far short of the scheme's target of two million by 2022. Barriers to adoption include limited awareness about solar pumps and farmers' inability to pay their upfront contribution.

Progress on the other two models has been rather poor due to regulatory, financial, operational and technical challenges. Only a handful of States have initiated tenders or commissioned projects for solar feeders or grid-connected pumps, according to our study. Yet, both models are worth scaling up for they allow farmers to earn additional income by selling solar power to discoms, and discoms to procure cheap power close to centres of consumption.

We propose five steps for tackling the myriad challenges linked to PM-KUSUM's implementation. First, extend the scheme's timelines. Most Indian discoms have a surplus of contracted generation capacity and are wary of procuring more power in the short term. Extending PM-KUSUM's timelines beyond 2022 would allow discoms to align the scheme with their power purchase planning.

Second, create a level playing field for distributed solar plants. Selling surplus power to discoms is one of the main attractions of grid-connected models. Yet, discoms often find utility-scale solar cheaper than distributed solar (under the scheme) due to the latter's higher costs and the loss of locational advantage due to waived inter-State transmission system (ISTS) charges. To tackle the bias against distributed solar, we need to address counter-party risks and grid-unavailability risks at distribution substations, standardise tariff determination to reflect the higher costs of distributed power plants, and do away with the waiver of ISTS charges for solar plants.

Third, streamline land regulations through inter-departmental coordination. Doing so will help reduce delays in leasing or converting agricultural lands for non-agricultural purposes such as solar power generation.

Fourth, support innovative solutions for financing farmers' contributions. Many farmers struggle to pay 30-40% of upfront costs in compliance with scheme requirements. Further, they cannot access bank loans without collateral. We need out-of-the-box solutions like Karnataka's pilot of a farmer-developer special-purpose vehicle to help farmers install solar power plants on their farms.

Fifth, extensively pilot grid-connected solar pumps. Current obstacles to their adoption include concerns about their economic viability in the presence of high farm subsidies and farmers' potential unwillingness to feed in surplus power when selling water or irrigating extra land are more attractive prospects. Further, the grid-connected model requires pumps to be metered and billed for accounting purposes but suffers from a lack of trust between farmers and discoms. Adopting solutions like smart meters and smart transformers and engaging with farmers can build trust. But piloting the model under different agro-economic contexts will be critical to developing a strategy to scale it up.The scheme, if implemented successfully, can generate thousands of jobs, reduce the carbon footprint of agriculture, and result in oil import savings.

Shalu Agrawal is Senior Programme Lead and Anas Rahman is Programme Associate at the Council on Energy, Environment and Water