

How to create a better power distribution network

Sreekumar N and Ann Josey, Prayas (Energy Group)

Central, state governments need to be flexible to ensure success of the Revamped Distribution Sector Reform Scheme

A version of this article was published by The Indian Express on 6 February 2022, and can be accessed on the following link: <https://indianexpress.com/article/opinion/columns/how-to-create-a-better-power-distribution-network-7760123/>

Launched in July 2021, the Revamped Distribution Sector Reform Scheme (RDSS) is the latest of many central government grant-based programmes towards electricity distribution network investments. Others include urban loss reduction schemes such as the Accelerated Power Development Programme and rural connections and network expansion focussed schemes such as SAUBHAGYA. These have played a significant role in increasing access and improving performance.

RDSS's outlay of Rs 3 lakh crore for five years can enable financially-strained electricity distribution companies to get similar support. Half of the outlay is for grants, will be spent on power loss reduction and strengthening networks.

But RDSS has inherited several design issues from its predecessors. These include complex processes and conditions for fund disbursal. Only 60 per cent of the total Rs 2.5 lakh crore grants allocated in past schemes were disbursed. Lack of public review and regulatory oversight in states is another issue. The prescriptive approach of the scheme design impedes effective implementation. For example, RDSS emphasises loss reduction investments over system strengthening. However, high losses are typically connected to sustained poor quality service which, in turn, is affected by inadequate investment in system strengthening. RDSS stipulates universal pre-paid metering but post-paid options may be suitable in many contexts. Similarly suggested measures in RDSS such as privatisation and franchisee adoption should be critically examined.

As required, states are submitting action plans detailing their contexts, commitments and interests. Despite the challenges, there are opportunities for discoms under RDSS.

It is important to strengthen rural networks to meet growing demand. In the past decade, 4.9 crore poor households have been electrified and more than Rs 50,000 crore has been invested in rural networks. However, actual investments have been much less than planned. Moreover, connections given to rural homes were for 250 or 500 watts, assuming few lights, fan and TV. This does not account for use of appliances such as refrigerators and mixers. Transformer and sub-station capacities were designed to meet this minimal demand. Increased supply hours, appliance usage and the needs of rural enterprises will need more network investment. Without this, the risk of power outages is high. The RDSS system's strengthening plans can focus on this challenge.

About 25 per cent of electricity sales is to highly subsidised, agricultural consumers who also receive erratic, poor quality supply. Under the national KUSUM scheme, day-time, low-cost supply can be provided to a large number of farmers by installing megawatt scale solar plants, which supply eight hours of quality power directly to dedicated agricultural feeders. This would address farmers' demand for reliable supply and almost halve the discom's cost and subsidy requirements. For this to work, separate feeders for agricultural consumers are needed. RDSS prioritises investments and grants towards dedicated agricultural feeders to accelerate feeder solarisation. States must leverage this grant support to provide reliable supply and reduce subsidy requirements.

Third is the need for "automatic" metering of distribution feeders. Despite efforts, unmetered consumers and non-functional meters at the consumer and feeder level unmetered consumption in a bid to demonstrate loss reduction. For greater veracity, all feeders must be equipped with meters capable of communicating readings without manual intervention. States should leverage RDSS's emphasis on automatic meter reading for this.

So far, the experience with smart metering and pre-paid metering has been limited. RDSS prescribes a phase-wise roll-out of consumer smart meters, starting with commercial and industrial consumers and urban areas. Such an approach provides states with an opportunity to understand implementation issues, adopt suitable strategies for metering and evolve frameworks for assessing benefits vis-a-vis the costs. This is possible if discoms, the state regulator and consumers play an active role in designing the roll-out to suit state realities, address implementation issues and assess benefits. In their action plans, states should emphasise the need for this flexibility and allow the discoms to make an informed choice between pre-paid and post-paid metering. To realise benefits, the state regulator must stipulate a framework to evaluate cost reduction and performance improvement due to smart meters and protect consumers from undue tariff impacts due to such investments. 60 per cent of grants under RDSS for network investments required to address the demand of charging infrastructure for electric vehicles. This can accelerate a shift away from petrol and diesel fuels.

To leverage various opportunities, states must emphasise the need for flexibility in prioritising investments in their action plans. This should be accompanied by state-level commitments towards accelerated but deliberate implementation. Central government agencies should also be flexible in the monitoring, tracking and fund disbursement mechanisms. Without these efforts, despite its potential, RDSS will likely be important but limited in its impact, like its predecessors.

-X-