CSE Webinar on Architecting PM-KUSUM 2.0: What the Redesign Must Get Right

Feeder-Level Solarisation, Grid Diagnostics, and BESS Integration



WRI INDIA | 15 YEARS OF IMPACT

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Himanshu Tyagi

PM KUSUM 2.0 is taking shape

‘Centre weighing Rs 35,000-cr outlay for PM-KUSUM-II’: MNRE’s Santosh Kumar Sarangi

The government plans a Rs 35,000 crore follow-up to PM-KUSUM, focusing on farm solarisation, efficient irrigation, and water conservation, while addressing challenges in solar project demand with acceptable pricing and storage solutions.

Written by Saurav Anand

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ETPrime

PM-KUSUM 2.0 may be aligned with farm schemes: Renewable energy secretary Santosh Kumar Sarangi

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Centre weighs ₹51,000 crore reset for farm solar push with storage and feeder focus

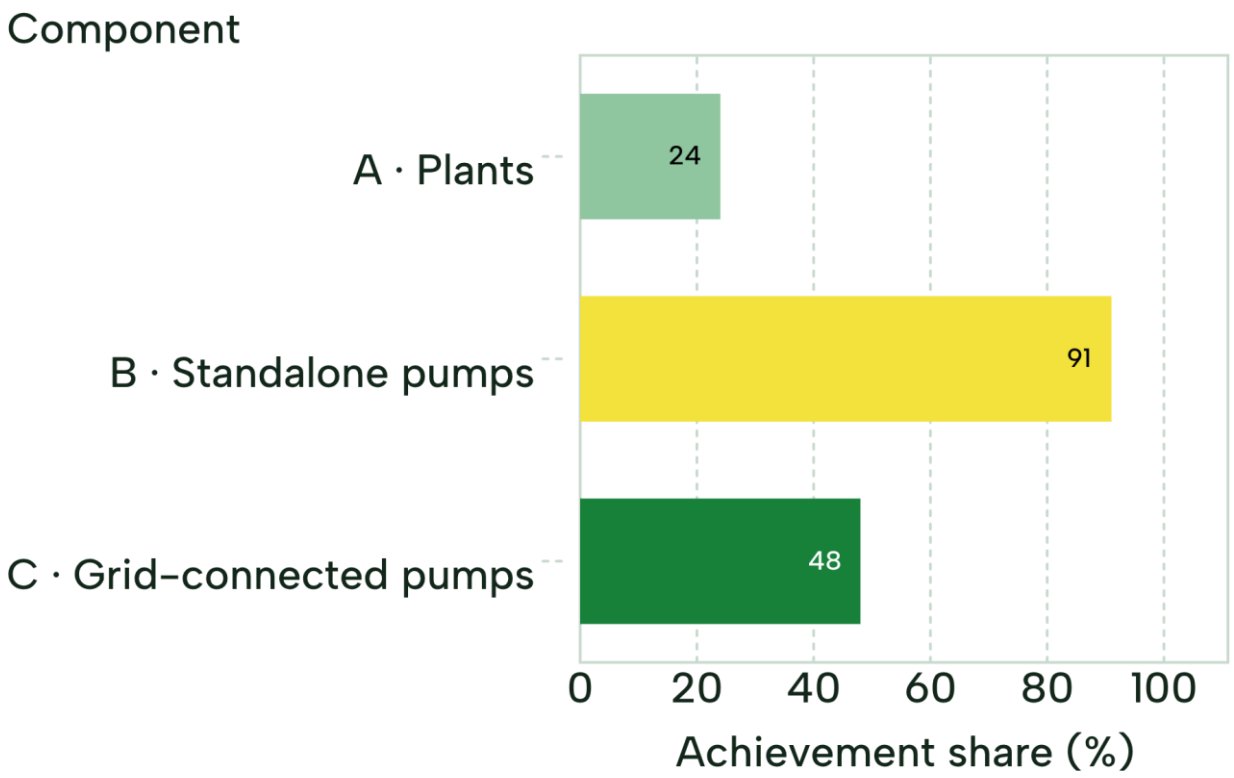
The Centre is weighing a ₹51,000 crore extension of PM-KUSUM that would reshape farm power policy around feeder-level solarisation, battery storage and commissioning-linked support. The proposal could reduce subsidy pressure, improve grid efficiency and create a larger market for domestic solar manufacturing.

ETAgriculture

Question 1	Question 2	Question 3	Question 4
Scale feeder solarisation	**Check grid readiness**	**Fill the storage design gap**	**Shift midday solar to the rest of the day**
Component C	Feeder diagnostics	BESS in the scheme	Peak shifting
Solarise the feeder, make it grid-ready		Add storage, move the solar peak	

Where phase 1 stands

MNRE data, 30 Sep · achievement share by component, about %



A · Decentralised plants (0.5-2 MW)

About 2,426 MW of 10,000 MW

B · Standalone solar pumps

About 11.9 lakh of 13.1 lakh sanctioned

C · Grid-connected pumps, mainly FLS

About 17.1 lakh of 35.4 lakh



Feeder-level solarisation is the clear performer

One buyer, existing load: the DISCOM procures for a feeder with farm demand already in place.

Reliable daytime supply replaces night-time supply, safer especially for women farmers.

Lower avoided power procurement cost, T&D losses, subsidy and cross-subsidy burden.

CFA of 30% up to INR 1.05 crore per MW; CAPEX or RESCO mode.

Held back by the 7.5 HP pump cap on CFA-eligible capacity and a weak rural grid.

Success brings new strain: midday curtailment

Rooftop, feeder-level solar surge forces Raj to overhaul power grid

Srikanta Tripathy / Feb 05, 2026, 07:55 IST

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Jaipur: Rajasthan, the country's largest solar power producer, is preparing a major overhaul of its electricity distribution network as decentralised renewable energy projects such as PM-Kusum and rooftop solar expand.

Two-Way Power Flow under Renewable Energy Ramp-up

The rapid growth of Renewable Energy (RE)—particularly rooftop solar and distributed generation —has transformed traditional electricity networks from unidirectional systems (generation transmission distribution consumption) into bidirectional grids. In such systems, electricity increasingly flows from consumers back to the grid, creating technical, operational, and regulatory challenges. Read on…

01

Solar exceeds local farm demand

Midday surplus

02

Curtailment and reverse power flow

Reach the upstream network

03

Strain grows with expansion

More solar increases the challenge

DESIGN ASK · 2.0

Size by feeder load profile and hosting capacity, not a pump-HP formula. Link part of CFA to daytime supply hours, plant availability and feeder metering.

Use RDSS feeder segregation as the pipeline

50,000+

feeders already separated

How many are solarised?

RDSS covers mixed feeders with more than 30% agricultural load.

DESIGN ASK

Make every RDSS-completed agricultural feeder an automatic KUSUM candidate.

Track on a joint MNRE-MoP dashboard: segregated, metered, studied, solarised, stored.

DESIGN ASK

Move RDSS and KUSUM reviews to a joint format.

Diagnose before you add: the feeder is now the constraint

Voltage swings and outages at rural substations shut down plants.

Few states scaled back FLS plant because of the overloaded transformers.

Tendered capacity often missed substation capacity, stranding developer investment.

2% grid unavailability can cut generation by 1.4-2.6%.

DESIGN ASK

No CFA above diagnosed hosting capacity. Publish substation-wise hosting capacity in every tender. Track feeders studied, availability, curtailment and voltage violations.

Phase 2: Storage Importance

Two VGF tranches: INR 3,760 crore for about 13.2 GWh; INR 5,400 crore for 30 GWh.

VGF state allocations overlap lead KUSUM states: Rajasthan, Gujarat, Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Telangana, Uttar Pradesh.

MoP advisory: minimum 2-hour discharge with new RE, but sizing is left open.

A — Manage surplus solar generation
- Improve utilisation of installed solar capacity
- Shift energy from surplus to deficit periods

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B — Supply peak demand
- Dispatch storage in morning and evening peaks
- Serves consumers on the same feeder

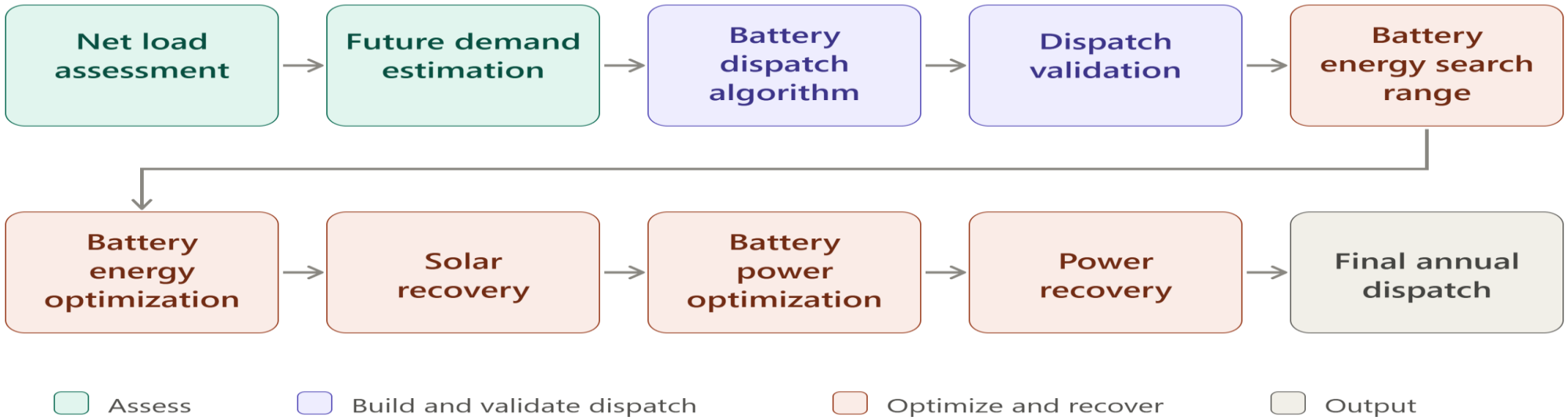
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C — Flatten load curves
- Smooth net-load variability across the feeder
- Improves operational stability

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D — Improve DISCOM economics
- Cut high-cost peak-hour power procurement
- Defer CAPEX on distribution upgrades

Closing the BESS design gap



WRI India BESS sizing methodology

Project asks

Value evening energy, voltage support and avoided curtailment; use time-of-day purchase signals and RDSS meter data for before/after load curves; measure kWh shifted, curtailment avoided, evening peak reduced and availability.

Regulation gap

Assam (AERC 2024) uses a single contracted channel; Rajasthan (RERC 2026) allows value stacking; some states have no BESS rules.

DESIGN ASK

Apply a regulatory-readiness test before storage funds, plus a model state framework.

Thank You

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