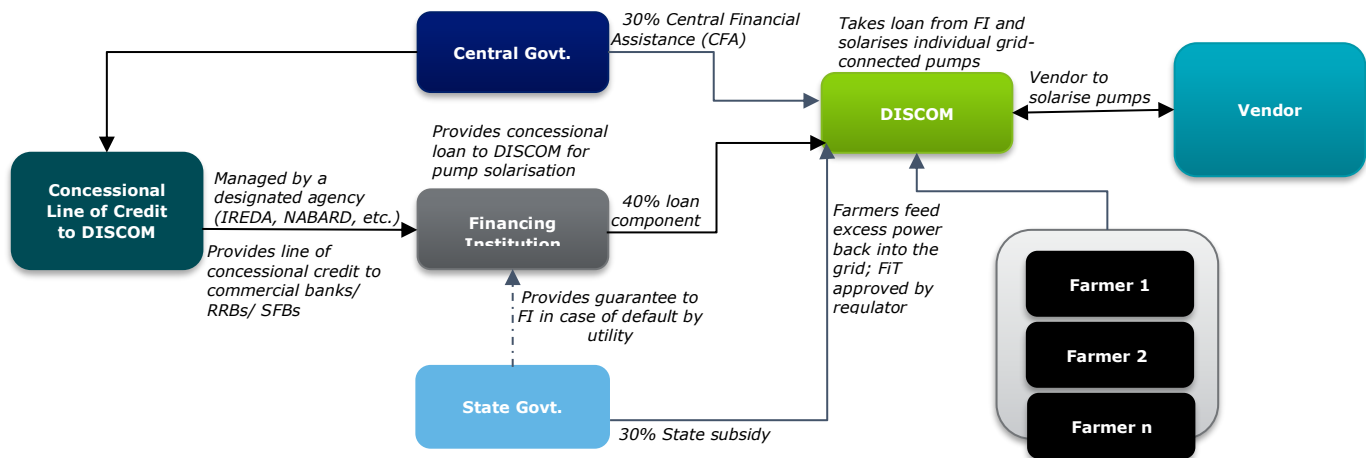


## 5. Loan to DISCOM (Grid-Connected Solar powered Agriculture pump)

### A. Proposed Financial Product and Key Objectives

- Loan to DISCOM is a financial product aimed at a power distribution company, DISCOM as the main project proponent wherein they will be taking up the entire investment for solarising individual pumps of farmers connected to the grid. In this proposed financial product DISCOM will solarise existing grid connected agriculture pumps. Support in form of Concessional line of credit to DISCOMs, Net Metering arrangement and feeder Segregation are required for this proposed product.
- Under component C of PM-KUSUM scheme, the investment of DISCOM will be supported through subsidy to solarise existing agriculture pump of farmers connected to the grid.
- Central & State Govt. each contribute 30% subsidy. Remaining 40% will be contributed as loan by the DISCOM and forwarded to the vendor. In this model, farmer makes no investment & system is owned by DISCOM. Farmer leases his land for which he will get revenue in form of feed-in-tariff paid for excess power injection into grid.
- **Proposed Support Mechanism for the product** – It is proposed that Financial Institutions will have the support in form of guarantee from the State govt., in case of payment default by utilities. FI's shall receive concessional line of credit from Centre (Quantum to be decided).

Figure 1: Implementation Framework and Fund Flow (Indicative)



### B. Indicative Term Sheet

Parameter	Details
<b>Lender</b>	Commercial Banks
<b>Type of Facility</b>	Term Loan
<b>Eligibility</b>	<ul style="list-style-type: none"> <li>• DISCOM should be a public utility</li> <li>• Should have selected vendor for SWP deployment through reverse auctions</li> <li>• Should have secured guarantee from State government</li> </ul>
<b>Lending Limit</b>	Decided on a case-to-case basis as per respective lender's guidelines
<b>Repayment Period</b>	10 years (As per lender's guidelines)
<b>Repayment frequency</b>	Monthly/Quarterly (As per lender's guidelines)
<b>Interest Rate</b>	9% (As per lender's guidelines)
<b>Details of utilization of proceeds</b>	The resources raised would be used for installation of solar water pump.
<b>Moratorium</b>	Decided on a case-to-case basis as per respective lender's guidelines
<b>Primary Security</b>	Exclusive first charge on fixed assets (present as well as future) relating to the project
<b>Guarantee</b>	State govt. provide guarantee to banks in case of default by farmers
<b>Technical Criteria of Asset</b>	<ul style="list-style-type: none"> <li>• MNRE guidelines on SWP system should be adhered</li> <li>• SWP system should be insured</li> </ul>
<b>Required Documents by Borrower</b>	<ul style="list-style-type: none"> <li>• Letter of award issued to selected vendor.</li> <li>• Undertaking from State Government for provision of guarantee</li> </ul>

### C. Product Features and Cost economics

#### Product Features/Benefits

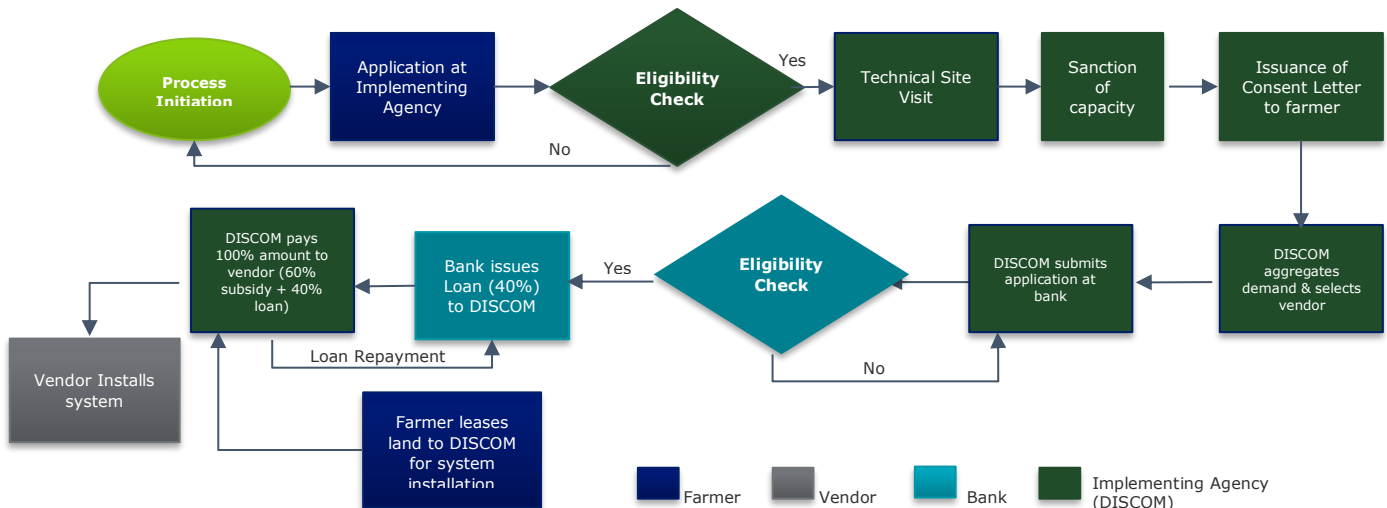
- This product is suitable for component C of PM-KUSUM Scheme
- This model may be promoted in states that have a higher share of farmers having grid-connected pump-sets
- Farmer investment is Nil as entire investment is borne by DISCOMs. Farmers leases his land to DISCOMs for solar panel installations and in return they will be incentivized (~INR 0.5-1/kWh) for injecting extra power into grid.
- Utility can service debt obligations through avoided cost of supply to agricultural consumers
- State govt. can provide guarantee to banks in case of default by utility.
- Utilities pay higher incentive to farmers for rationalizing consumption.

#### ILLUSTRATIVE COST ECONOMICS

For 300 number of 5HP Pumps (3.73kW)

<b>Project Capital Cost</b>	<b>INR 425.22 lakhs</b>
<b>Subsidy (60%)</b>	INR 255.13 lakhs <sup>2</sup>
<b>Loan Requirement (40%)</b>	INR 170.09 lakhs
<b>Interest Rate (%)</b>	9%
<b>Loan Duration</b>	10 years
<b>Repayment Cycle</b>	Monthly
<b>EMI (Annual)</b>	~INR 25.86 lakhs
<b>Avoided Cost of Supply</b>	~INR 78.42 lakhs <sup>3</sup>
<b>Incentive payment to farmers (Annual)</b>	~INR 2.25 – 4.49 lakhs <sup>4</sup>
<b>Net Savings for DISCOM (annually)</b>	INR 73.93 lakhs- INR 76.17 lakhs <sup>5</sup>

### D. End to End Procedure (Indicative)



### D. Key Risks and Mitigation Strategies

#### Key Risks

- Default on loan repayment by utility
- Reluctance of farmers to change irrigation behavior.
- Technical challenges in solarisation of individual pumps
- Theft of Equipment

#### Mitigation measures

- Guarantee can be provided by State government for payment defaults by utilities
- Incentive payment for rationalizing consumption.
- Concessional line of credit required - (Quantum to be decided) to provide concessional loan to FIs/DISCOMs
- Detailed assessment of agricultural consumers
- SWP with remote monitoring functionality and adequate insurance cover

1. Assuming capital cost of solar panels at INR 38,000/kW (For 300 systems of 5HP)  
 2. Assuming 30% CFA and 30% subsidy from State government  
 3. Assuming avoided cost of supplying power based on generation by 300 solar systems- (300 SWP\*3.73 kW\*8760 hours) at 16% CUF; savings for DISCOM based on Cost of Supply for Agricultural Tariff (INR 5/kWh)  
 4. Assuming excess power generated is fed back into the grid and farmers are compensated @ INR 0.5-1/kWh; Excess power is annual power generation less consumption by 300 farmers (1000 hours \* 300\*3.73 kW)  
 5. Considering Avoided Cost of Supply less incentive payments to farmers