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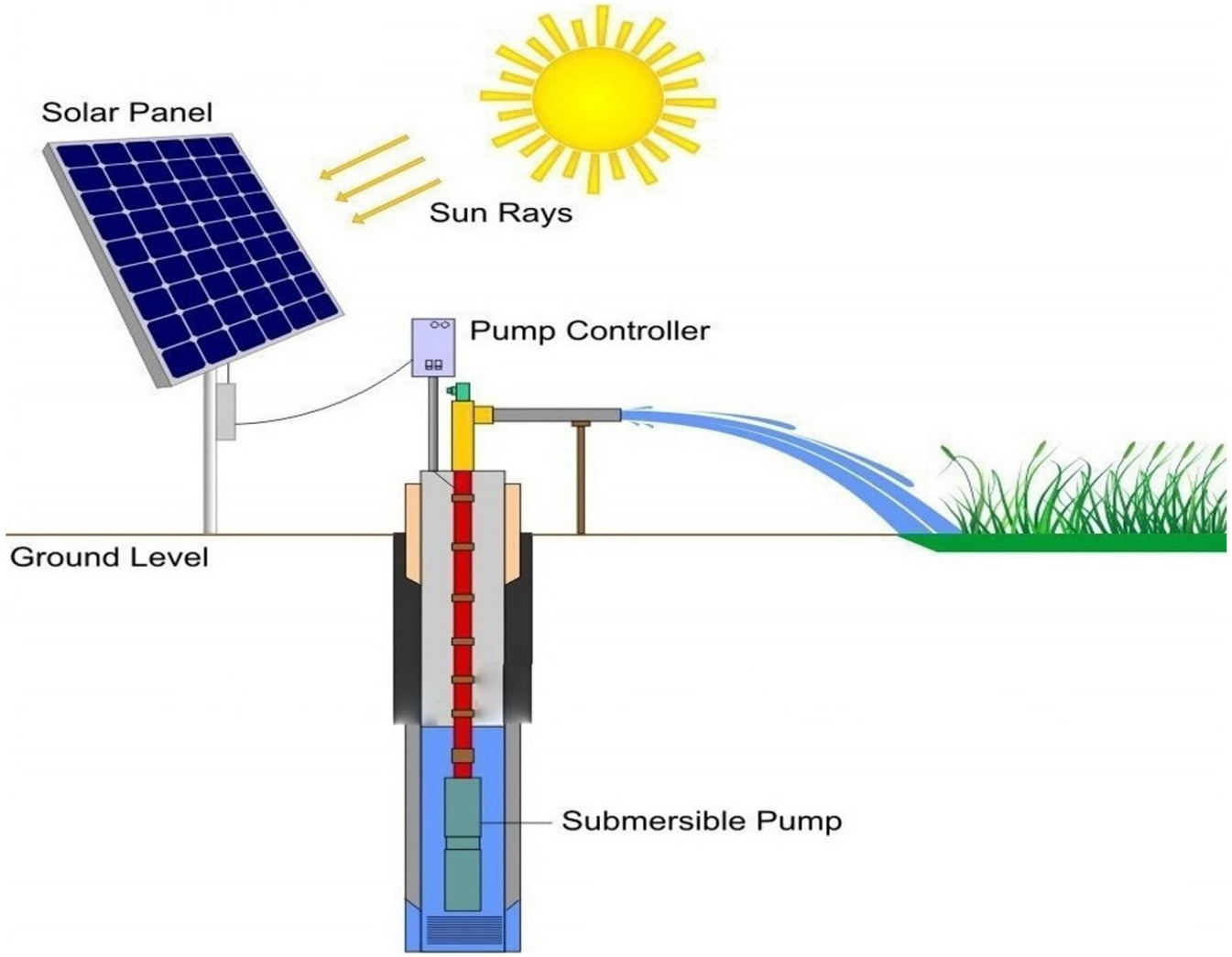
# DC off Grid Solar Pump Maharashtra

**11 November 2025**

# About the Solar Pump




**A solar water pump is a pumping system powered by solar panels that converts sunlight into electricity to draw water from a source such as a well, river, or reservoir for irrigation use.**

# About the Solar Pump Schemes

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## Solar Pump Schemes under implementation

### PM KUSUM

#### *Component-B (MSEDCL)*

- **Government of India Scheme**
- **Target** MSEDCL to install 2.75 lakh.
- **Farmer Share**: 10% (General), 5% (SC/ST).
- **Subsidy**: 30% GoI,
- Balance by GoM & TOSE

### MTSKPY

#### *Magel Tyala Saur Krushi Pump Yojana*

- **Government of Maharashtra Scheme**
- **Target** 5 lakh solar pumps in 5 years.
- **Farmer Share**: 10% (General), 5% (SC/ST).
- **Subsidy**: 30%, by GoM
- Balance funded via AIIB loan, repaid through TOSE fund.

# Application Process & statistics

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**All new connection application and vendor selections are done through online process**

| | KUSUM Scheme | MTSKPY Scheme |
|---|---|---|
| Application received | 2,29,313 | 4,72,540 |
| Payment done | 2,29,313 | 4,50,014 |
| Vendor selection- | 2,29,313 | 3,12,777 |
| JSR Approved | 2,25,884 | 2,74,721 |
| Pump Installed | 2,25,884 | 1,59,506 |

1. Payment of Beneficiary Contribution
2. Scrutiny of application by SDO
3. If Application approved
4. Vendor Selection by farmers
5. Joint Survey by Lineman & Vendor Representative
6. JSR Approval by Circle
7. Work Order Issued
8. Pump Installation

# *Progress of solar pumps Installation*

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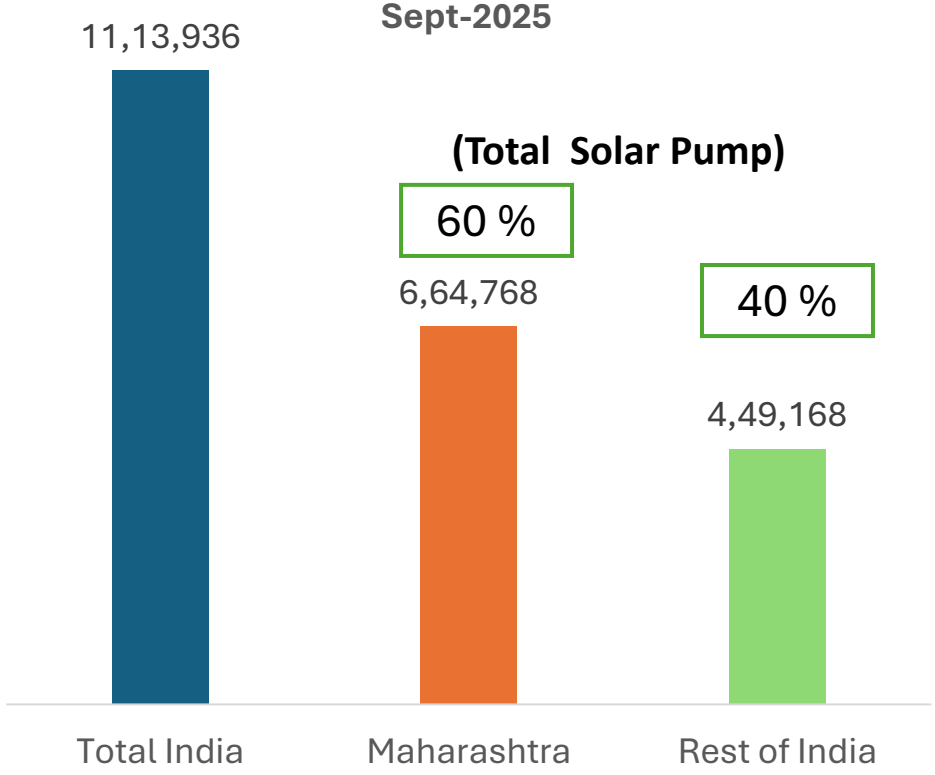
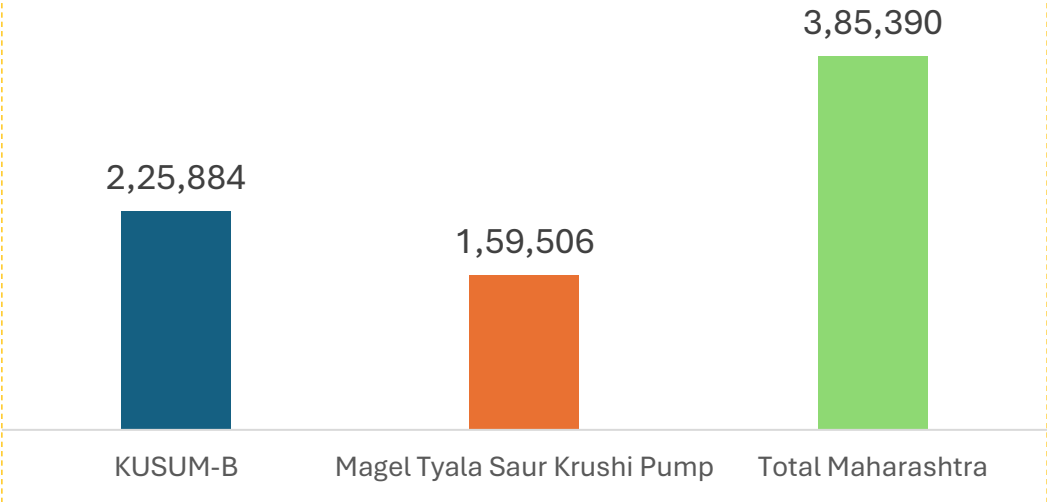
**Comparison of No's of Off-Grid Solar Pump Installations in Maharashtra and India as of Sept-2025**




**No's of Off-Grid Solar Pump Installations in Maharashtra in KUSUM-B & Magel Tyala Saur Krushi Pump Yojana by MSEDCL**

**( KUSUM + MTSKPY)**
**for the period of June 2024- Oct - 2025**




**Maharashtra secures the 1st rank in the installation of Off-Grid Solar Pumps in India with 6,64,768 installations, followed by Haryana with 1,70,125 and Rajasthan with 1,10,125.**

# *35,000 Solar off grid pump installation for securing GWR in 30 Days by MSEDCL*

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MSEDCL has applied to the Guinness World Records for installing 35,000 off-grid solar pumps in 30 Days (27 October 2025 to 25 November 2025)

1. **Only fully functional, operational solar-pumps are to be counted for the record.**
2. **Each installed site must undergo pre-survey and post-installation inspection, with reports submitted.**
3. **Each installation must have a unique beneficiary number/serial number, and must include signed, dated installation reports by the responsible engineer.**
4. **For each working pump: RMS, GPS coordinates, photographs, and videos will be recorded and consolidated**
5. **An independent third-party audit is verifying the total installations within 30 days; additionally, two independent solar-energy experts are confirming the verified total — the final report is including installations, locations, evidence, auditor verification, and witness confirmations**

# *Five Layer Verification*

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**GWR Adjudicator**

**Savitribai Phule Pune University's**
**The Centre for Energy Studies**

**2 Solar Industry Expert**

**MSEDCL Team**

**Vendor**

# *Most Solar pump Installed in 1 Month*
# *“Guinness World Record”*

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## Pole Mounting along with Foundation


## SPV Mounting

# *Most Solar pump Installed in 1 Month*
# *“Guinness World Record”*

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## Controller Mounting


## Water Output

# *Impact of Solar Pumps on MSEDCL*

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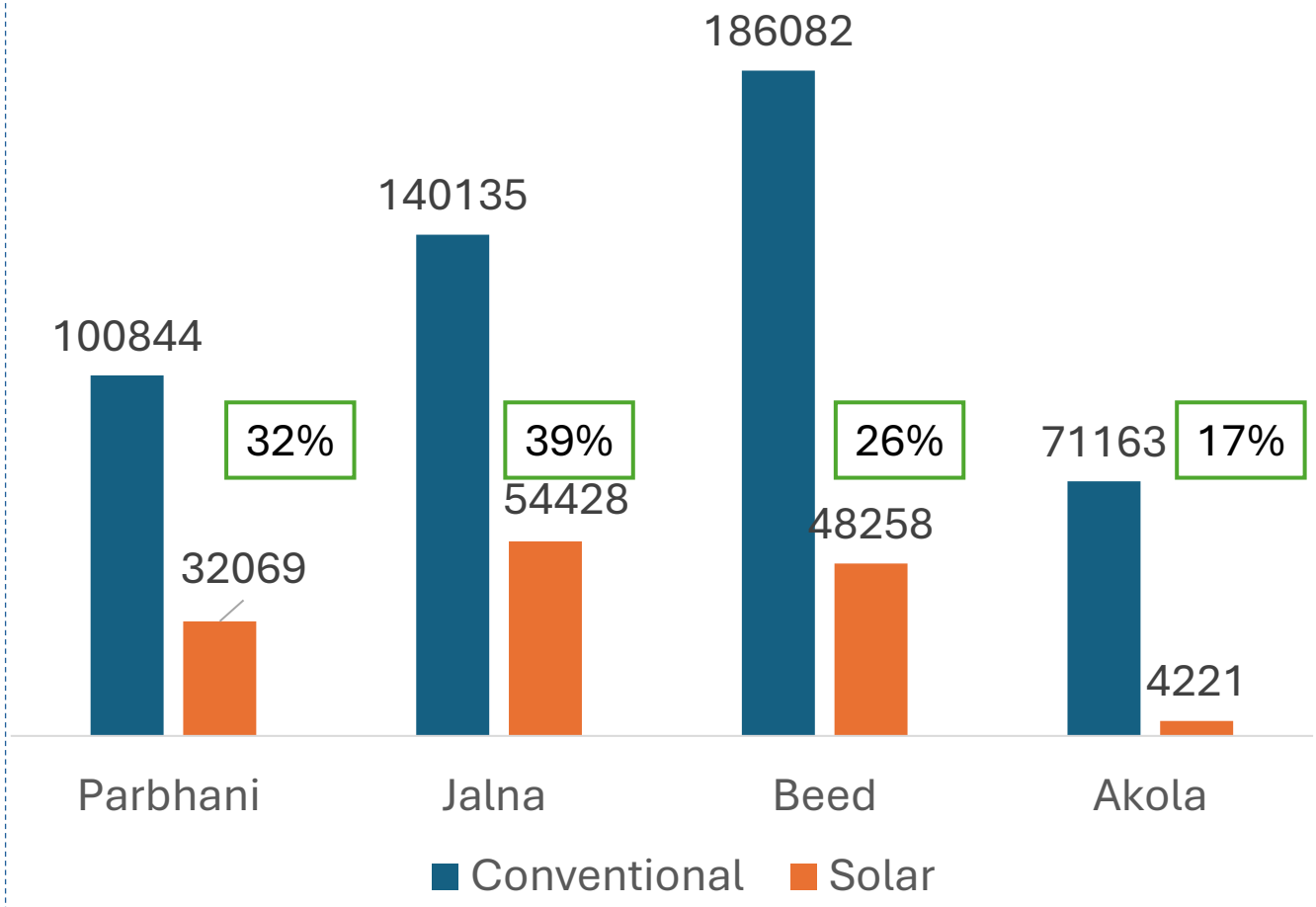
## Case Study of 4 district

### *Penetration of Solar Pump Vs Conventional Pumps*




- **Total Conventional Pumps Installed: 47.95 lakhs**
- **Solar Pumps Installed Till Date: 6.64 lakhs**
- **Target for Solar Pump Installation: 15.44 lakhs**
- **MSEDCL Turnaround: 46% of the total agricultural pumps will be solarized by 2027**

# *Impact of Solar Pumps on MSEDCL operational parameters*

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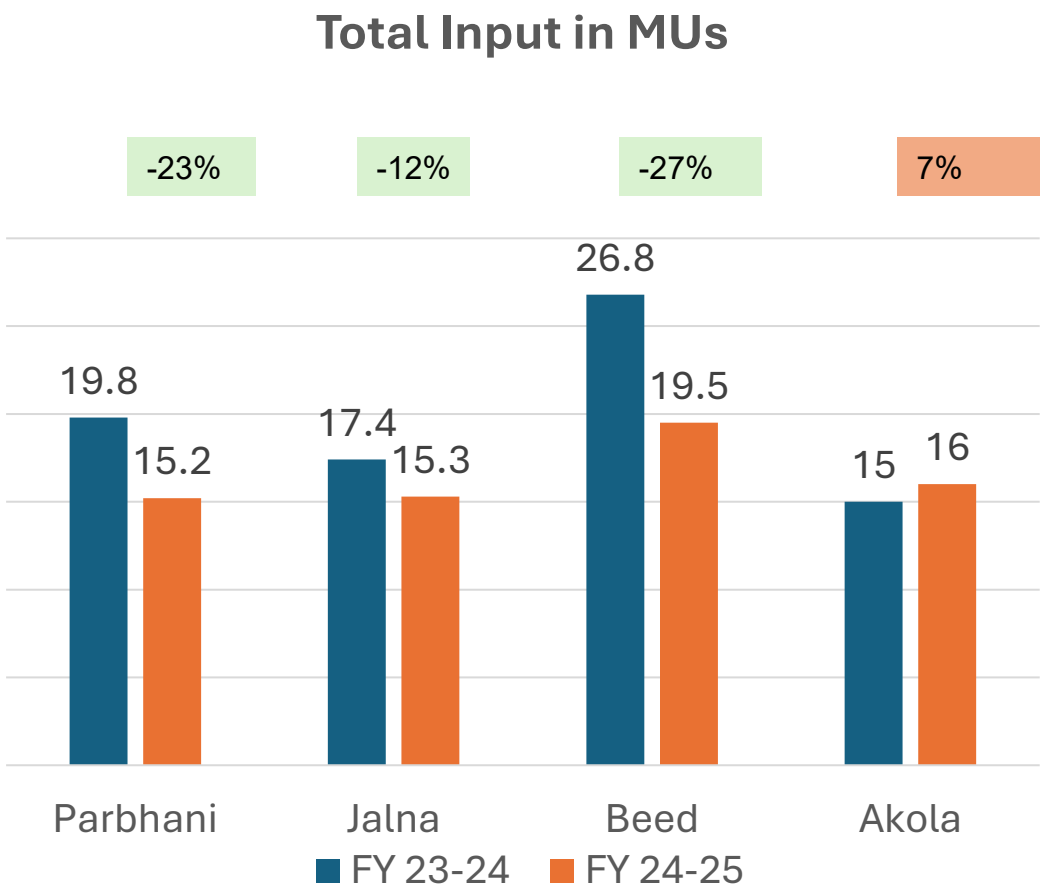
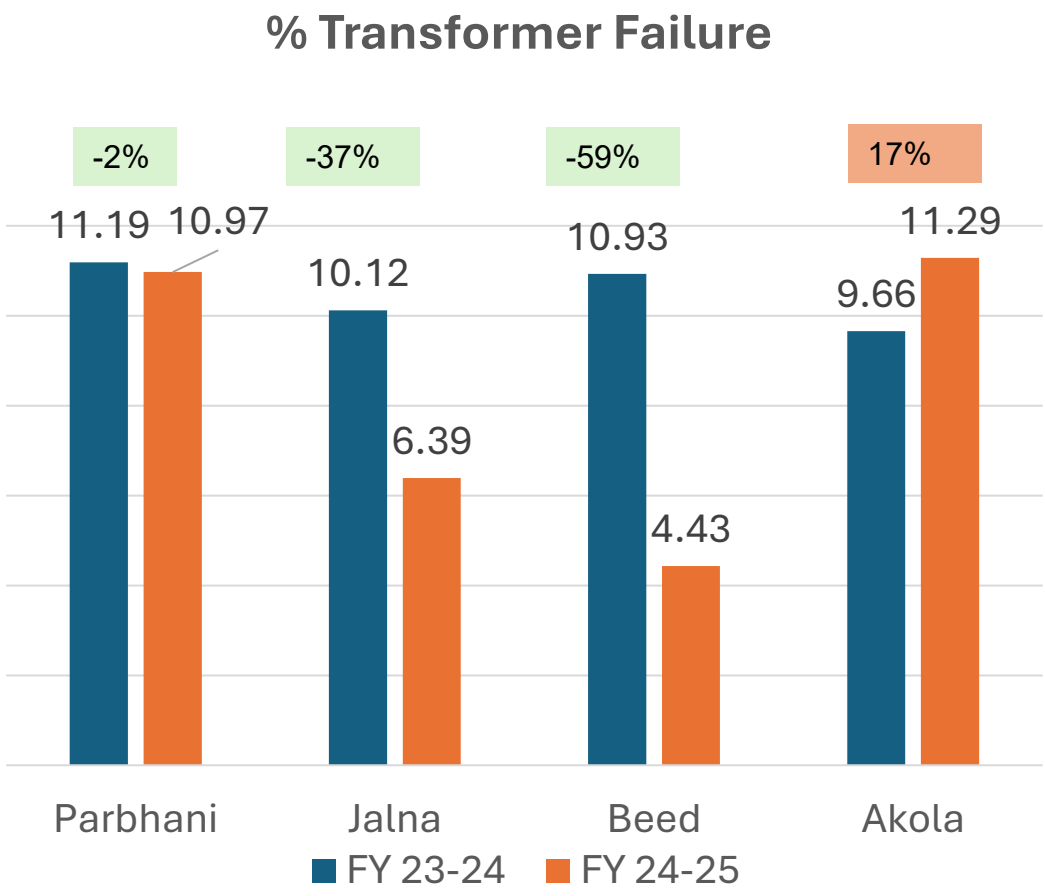
## Case Study of group of 10 feeders in each 4 district

### *Operational parameters*



# *Impact of Solar Pumps on MSEDCL*

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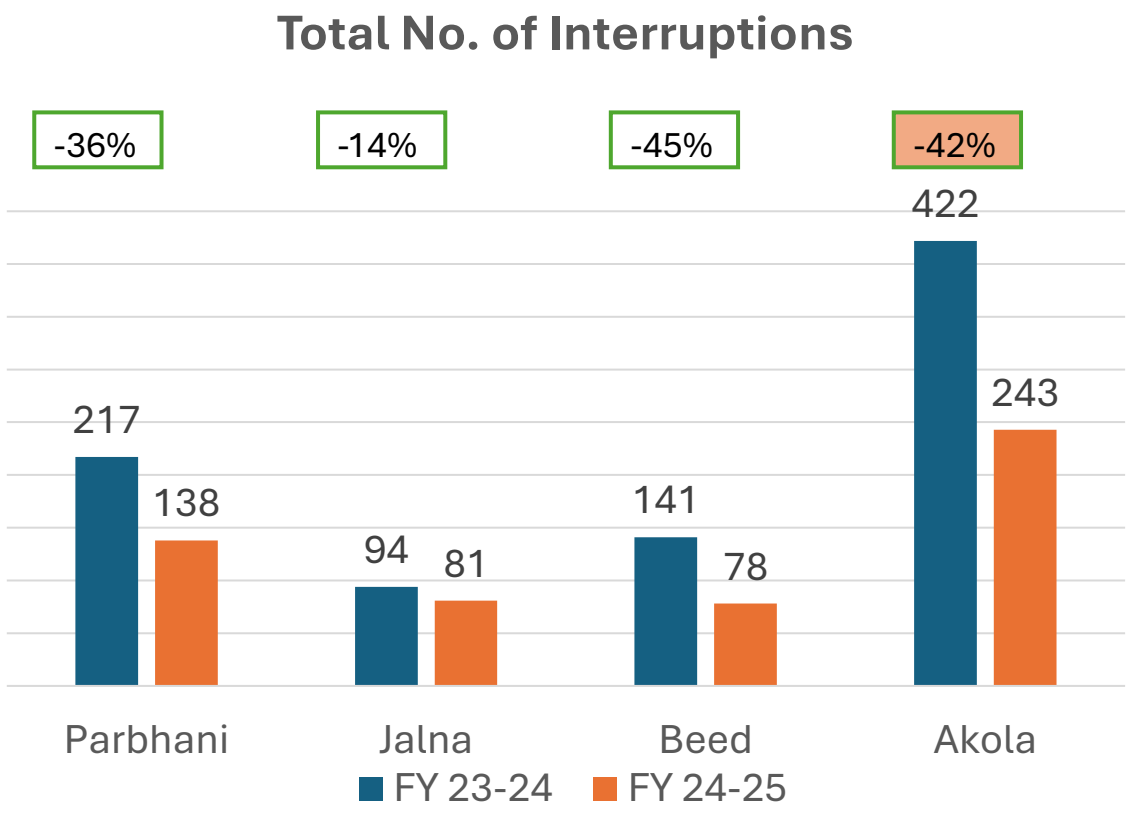
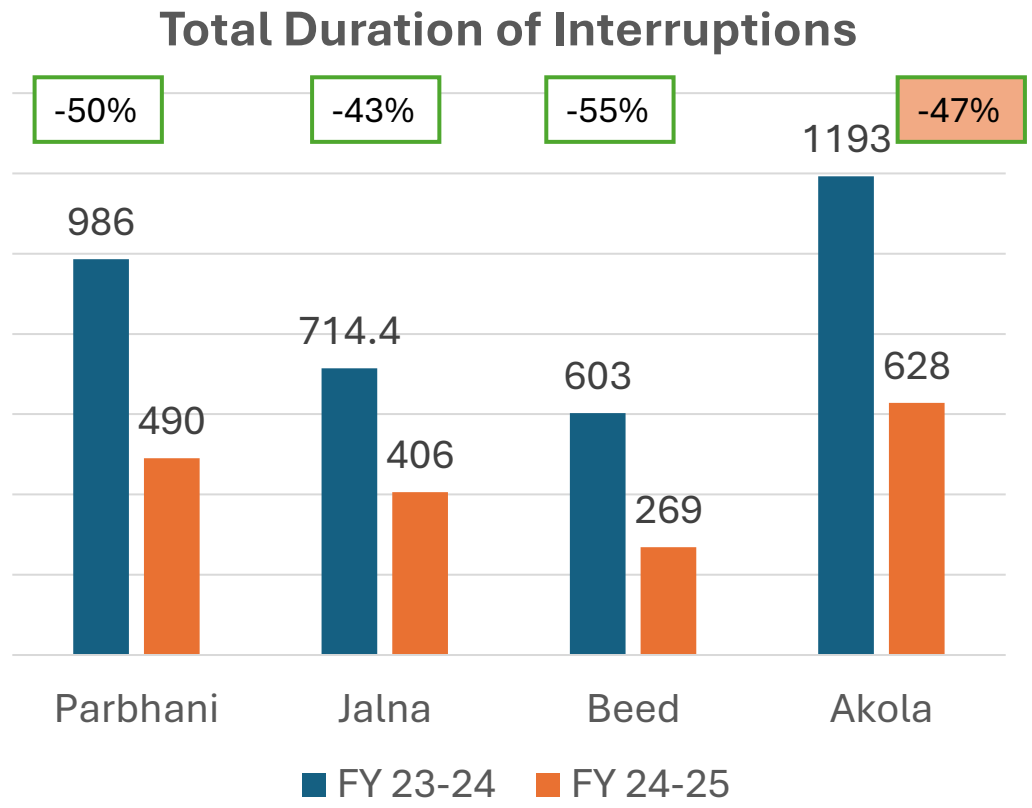
## Case Study of group of 10 feeders in each 4 district

### *Operational parameters*




**Observations :**

- Although Akola shows a significant decrease in the number and duration of interruptions, it still records the highest number and duration of interruptions among 10 feeders from all circle.

# Comparison b/w Off Grid & conventional pumps

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| Sr. No. | Features | Off-Grid Solar Pump Connection | Conventional Pumps connection |
|---|---|---|---|
| 1 | **Pump Operation Time** | Daytime only (8-10 hours) | 8- 10 Hours power supply in Rotation ( Day/ Night) |
| 2 | **Power Purchase by MSEDCL** | Nil | Power purchase by MSEDCL |
| 3 | **Farmer's Bills** | Nil | Farmer have to pay electricity bill |
| 4 | **T & D Losses** | Nil | T & D losses due to lengthy feeders |
| 5 | **Electricity Subsidy Burden** | No burden on DISCOM | High subsidy cost to state |
| 6 | **Power Demand on Grid** | Reduce | Have significant power demand on grid |
| 7 | **Remote Area Viability** | Ideal due to independence from grid infrastructure | Not suitable where grid connectivity is poor |
| 8 | **CO2 Emission** | Nil | Have significant carbon footprint |
| 9 | **New Connections** | No New connection will be provided in **Dark zone** as per GSDA guidelines | No further connection is provided |
| 10 | **Water Management** | Limited pumping hours naturally restrict over-extraction; slower groundwater depletion due to controlled, time-bound use; farmers adopt micro-irrigation (drip/sprinklers) to maximize daytime usage and ensure efficient water utilization. | Excess pumping leads to indiscriminate and continuous extraction; accelerated groundwater depletion due to unmonitored and excessive pumping; no incentive to save water as power is often free or highly subsidized. |
| 11 | **Water Use Discipline** | Encourages judicious use of water (daylight-bound pumping requires prioritization) | Leads to over-irrigation and flooding of fields |
| 12 | **Transformer failure** | Reduction Transformer failure | More chances of Transformer failure |
| 13 | **RPO obligation** | Fulfilment of RPO obligation | Nil |
| 14 | **R & M cost** | Reduction R & M increases | Increase in R & M cost |

# Cost Benefit Analysis : Solar Pumps of Maharashtra State

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**Considering the target of installation of 10.45 Lakh off-grid solar pump and installed off-grid solar pumps till date, the cost benefit analysis is as under :**

| Sr. No | Description | Considering Target of installation of 10.45 Lakh off-grid solar pump | Considering Installed 6.64 Lakhs off-grid solar pump till date |
|---|---|---|---|
| 1 | No's of Off Grid Solar pump | 10,45,000 | 6,64,768 |
| 2 | Capacity of Off Grid Solar pump (MW) | 2,300 | 2,008 |
| 3 | Avoided power generation units due to solar pump (Mus/Year) | 5,904 | 4,175 |
| 4 | Avoided power purchase cost due to solar pump (Rs. Cr./Year) | 3,283 | 2,041 |
| 5 | Saving in Cross Subsidy (Rs. Cr./Year) | 2,292 | 1,511 |
| 6 | Saving in Govt. Subsidy (Rs. Cr./Year) | 1,120 | 706 |
| 7 | Saving in Farmer Energy Bill (Rs. Cr./Year) | 1,568 | 1,257 |
| 8 | REC cost saving for RPO (Rs. Cr./Year) | 56 | 35 |
| **9** | **Reduction in Carbon foot print (MT CO2)** | **3.22** | **1.71** |

***Total GoM Subsidy 4980 Cr./Yr***

***Total GoM Subsidy 3,476 Cr./Yr***

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# THANK YOU