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# BOTTOM-UP PLANNING FOR IMPROVED ENERGY ACCESS

*A Case Study of Udaipur District, India*

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- Challenges in current planning
- Udaipur Context
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- Supply and enabling ecosystem
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# Background

100%

Rural Electrification Target

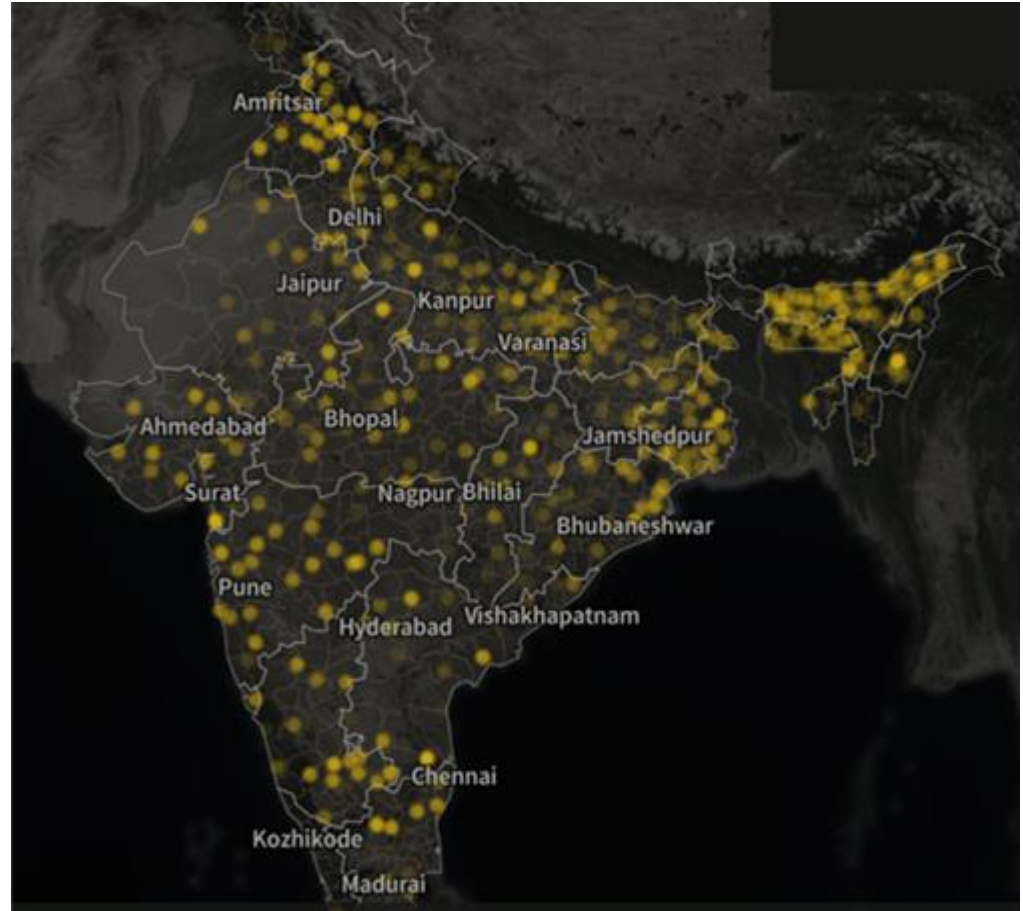
300,000,000

people without electricity access

20,000,000

people with unreliable and inadequate supply

*Power for All* plans only consider supply gap and aggregate growth. Other dimensions of access have consistently been missing.



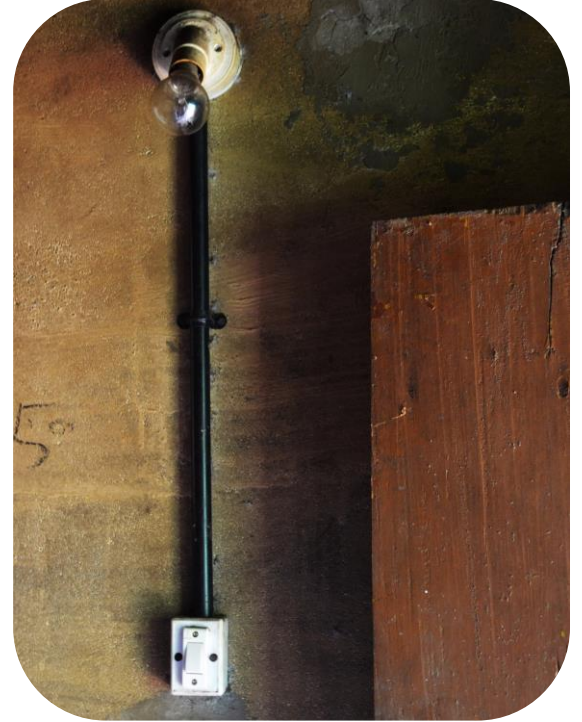
# Challenges in Current Planning



Access

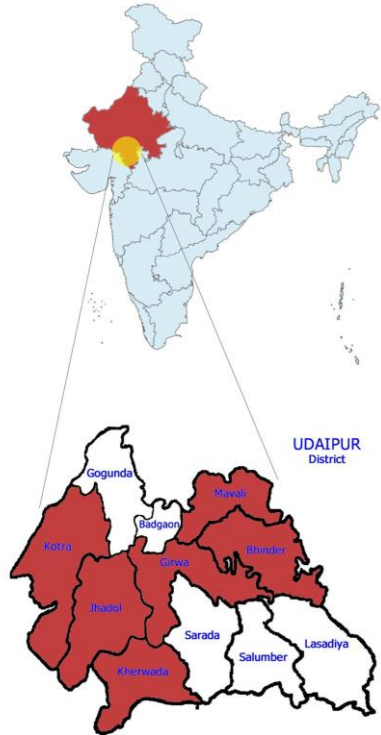


Reliability



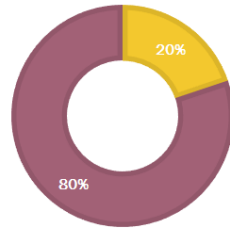
Adequacy

# Udaipur District, Rajasthan, India



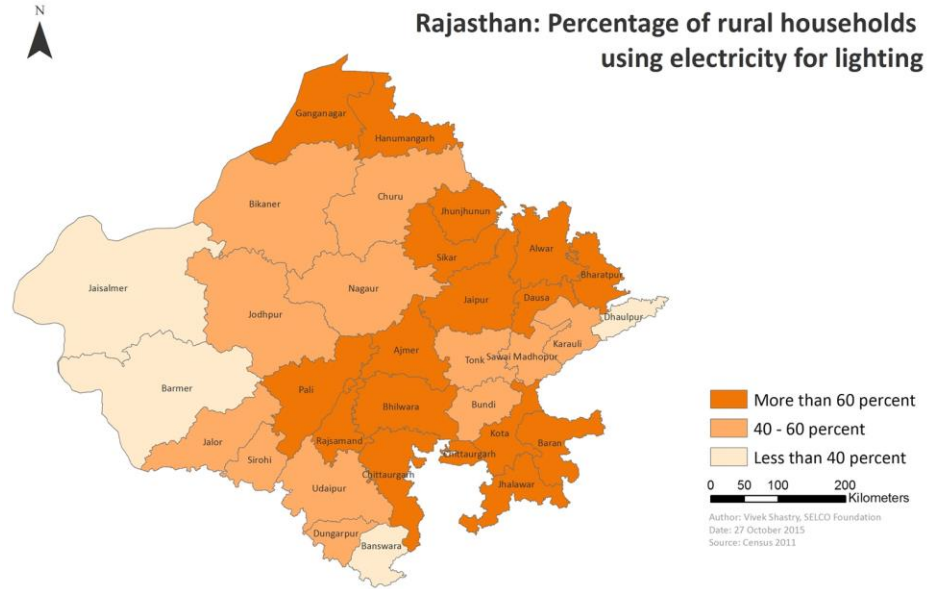
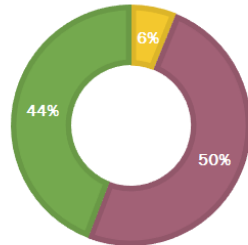
## URBAN/RURAL

Urban Rural



## CASTE

SC ST Other



# Holistic Bottom-up Planning

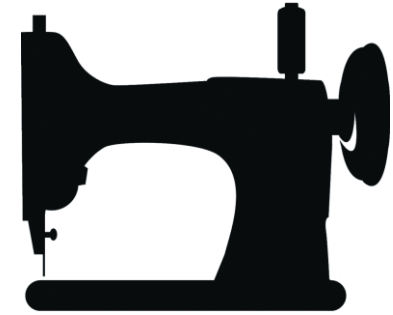
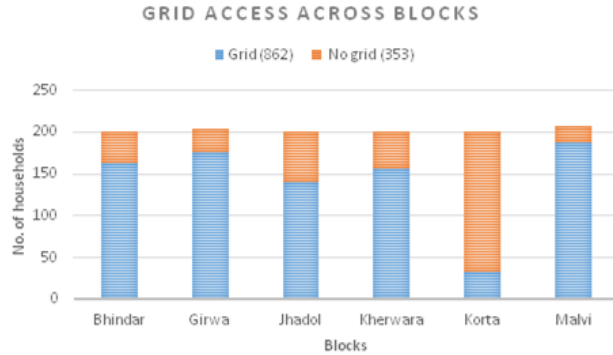
Understanding demand better through:

- Bottom-up **demand assessment** through household survey
- Correlating electricity supply level with **income, health, education indicators** through village-level focus group discussion
- Examining **applications** for new electricity connections
- Studying implementation of **other rural development policies** and schemes

Understanding supply better through:

- Deploying **ESMI** meters to monitor hours and quality of supply
- Collecting **feeder-level supply data** from the utility
- Evaluating **penetration of DRE** sources through household survey
- Assessing the **broader ecosystem** for non-grid supply options

# Demand and Convergence



Electrification Status  
Appliance Use  
Assets and Aspirations  
Access to services

Household

Health  
Education  
Banking  
Housing

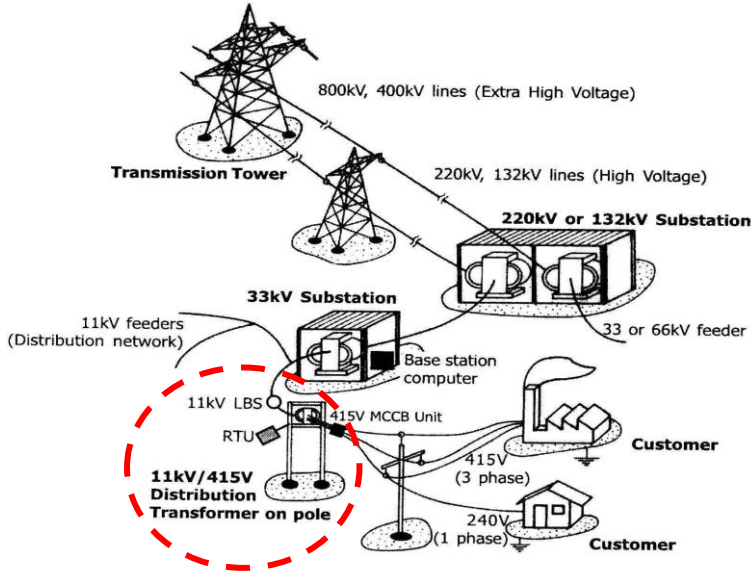
Community

Employment  
Access to Electricity  
Fuel Consumption  
Value Addition

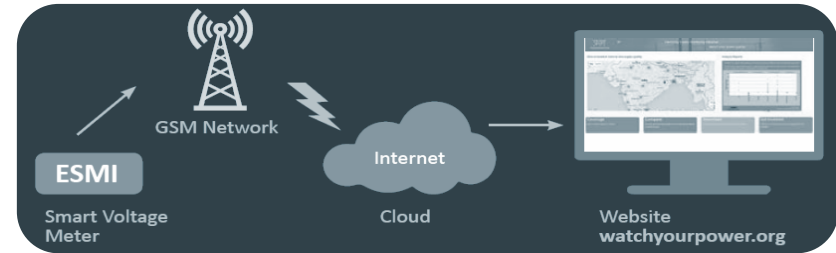
Livelihoods

# Supply and Enabling Ecosystems

## Feeder Meter Data Mapping *SELCO Foundation*



## Electricity Supply Monitoring Initiative (ESMI) *Prayas Energy Group*



## District level Inter-departmental Engagement: Energy as an Input in other Schemes

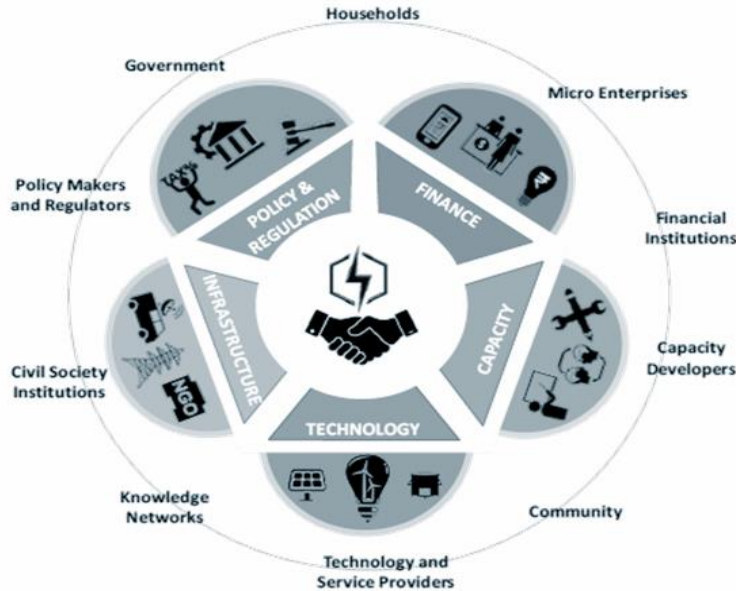


**ANNUAL PLAN 2015-2016  
RAJASTHAN  
DISTRICTWISE PLAN OUTLAY  
AND  
PHYSICAL TARGETS**



# Decision Making: Tools and Processes

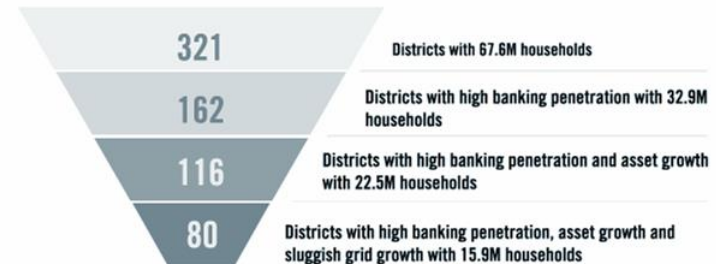
## Ecosystem Development Framework *SELCO Foundation*



## Long-range Energy Alternatives Planning *Stockholm Environmental Institute, World Resources Institute*



## Energy Access Maps *New Ventures, World Resources Institute*



# Expected Outcomes



1

**Power for All: Transparent, Participatory Planning**  
Eg: DRE as a complement to Grid supply

2

**Cross-sectoral Energy Convergence**  
for higher tiers of access

3

**Ecosystem Development for**  
Decentralized Renewable Energy



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Thank You

