Electricity Access in India

Realities, challenges, drivers and outcomes

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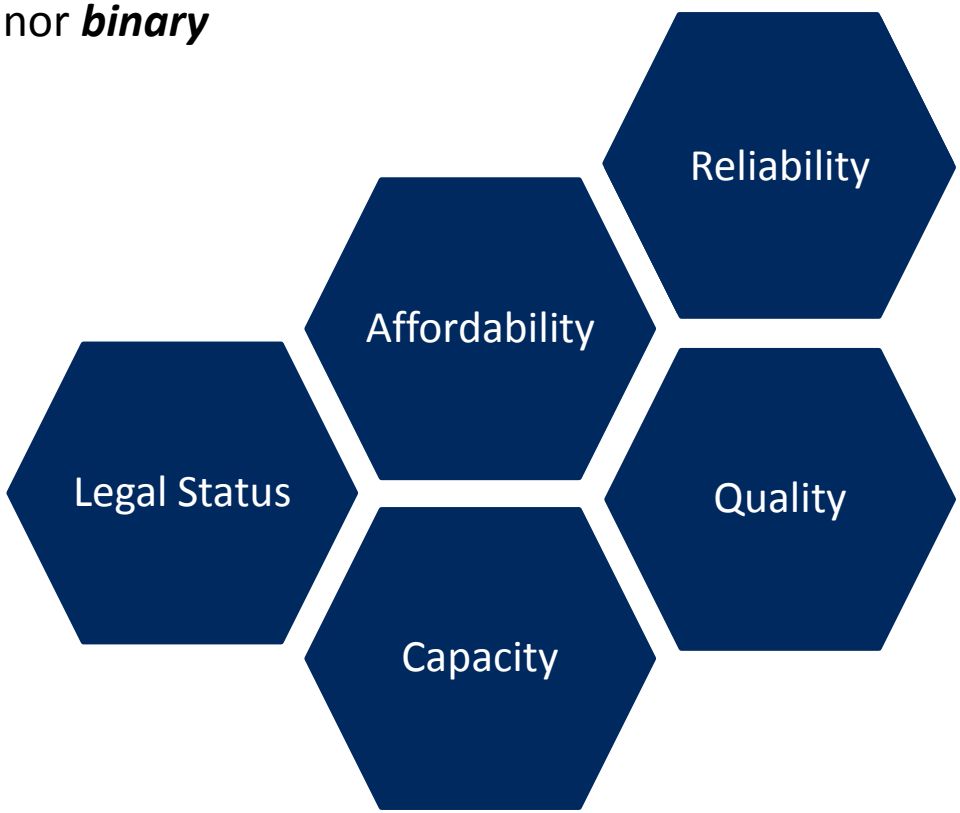
WHAT is electricity access?

- Looking beyond village electrification and household connection
- Energy access is neither ***unidimensional*** nor ***binary***
- Various facets and aspects involved
- Striking the balance between
  - Detailing
  - Measurable, replicable & scalable
- **Identifying the barriers to access**



6 states | 51 Districts | 714 Villages | 8,566 households | 2.5 million data points

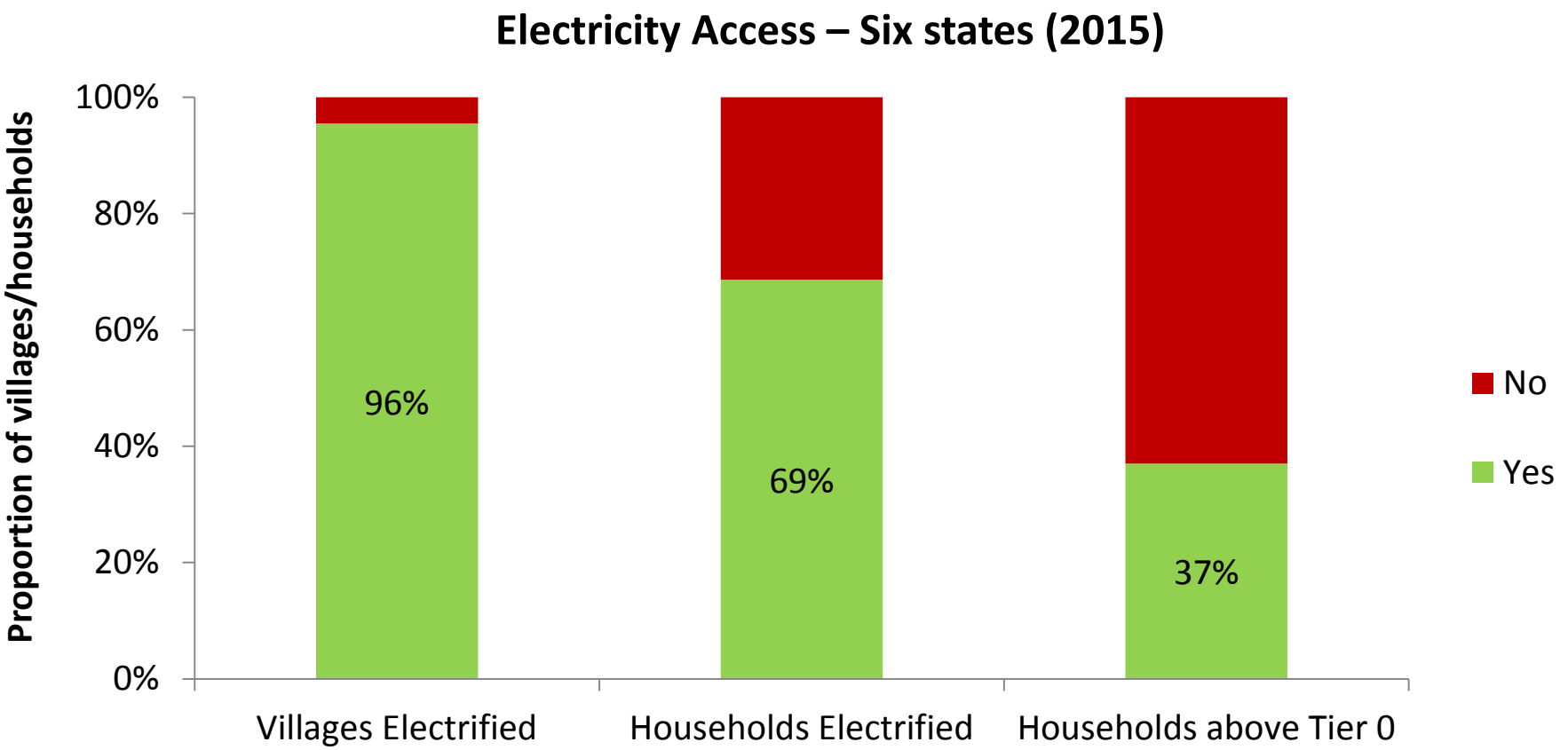
ACCESS - Electricity Access framework

Dimension \ Tier	Tier 0	Tier 1	Tier 2	Tier 3
Capacity	No electricity	Lighting + Basic entertainment / communication (Radio/ Mobile) (~1-50W)	Lighting + Air circulation + entertainment / communication (TV/ Computer) (~50-500W)	Tier 2 services + Medium to Heavy loads (>500W)
Duration	<4hrs	>4hrs and <8hrs	>8hrs and <20hrs	>=20hrs
Reliability (Black-out Days)	5 or more days	2-4 days	1 day	0
Quality*	$N_H > 3$; $N_L > 6$	$N_H = 0\text{-}3$; $N_L = 0\text{-}6$	$N_H = 0\text{-}1$; $N_L = 0\text{-}3$	$N_H + N_L = 0$
Affordability	Unaffordable		Affordable	
Legal Status	Illegal		Legal	

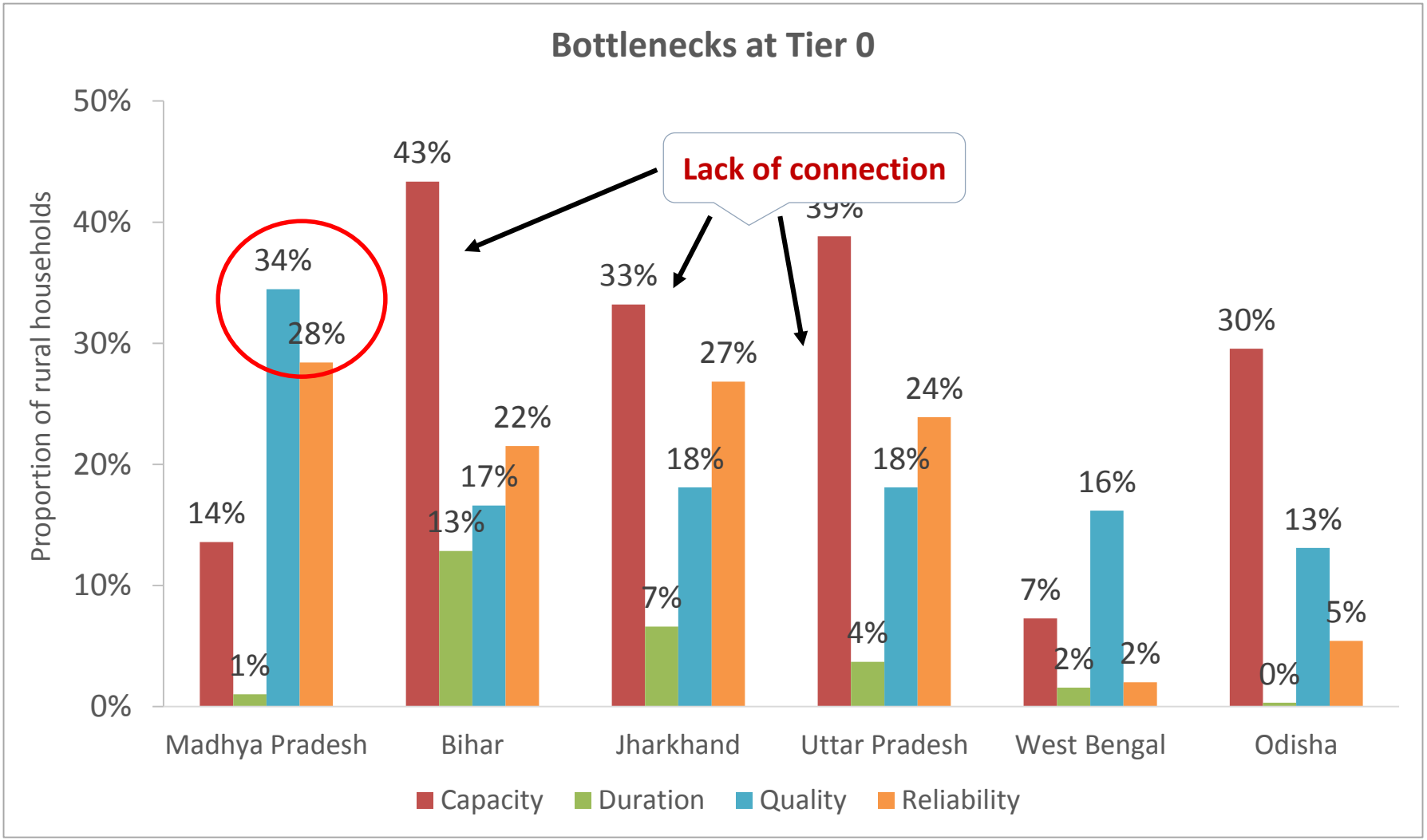
*N_H is number of high voltage days in a month causing appliance damage; N_L is number of low voltage days in a month limiting appliance usage.

NOTE: *For dimensions where the categories span multiple tiers, only the higher tier values apply. For example, affordability can only be categorised as Tier 1 or Tier 3. The same is the case for legality.*

What are we measuring?



Why do majority of the households remain in the bottom-most tier?



WHY - The rationale to further electricity access

- Political leverage
  - 40 years of promises; shifting goal-posts; centre-state
- Developmental outcomes
  - Electricity is necessary but not sufficient
- Focus on households, community and productive use
- Means, but not the end in itself
  - Complimentary roles of grid and DRE solutions
  - 7.5% using decentralised solutions; 5% using them exclusively

What works?

- Technology innovation
  - Cost; Reliability; Consumer centric
  - Ecosystem support – Philanthropic capital, Demand aggregation

- Financial innovations
  - Simpa Networks; Solar pumps
  - Experimentation – Venture capital, Patient capital; Understanding consumer

- Policy support
  - Evidence based unbiased research
  - Managing interest of various stakeholders – Narratives

- Achieving time-bound targets
  - Political will and leadership
  - Exploit motivation factors at individual level

Thank you

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