Optimizing Tariff for 24 x 7 Power Supply

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7th November 2012

About Prayas …

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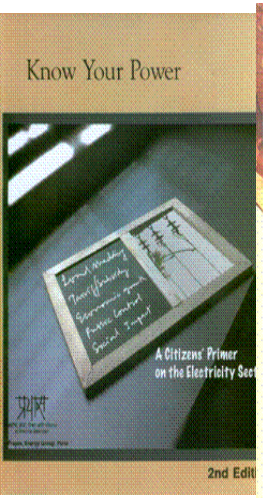
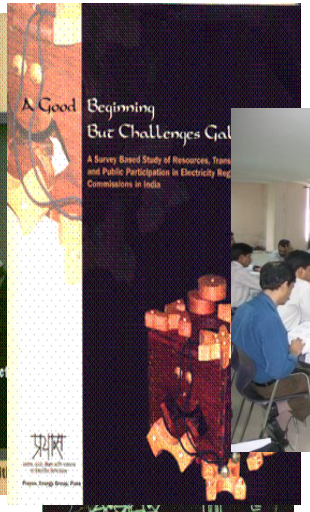
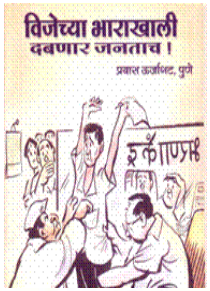
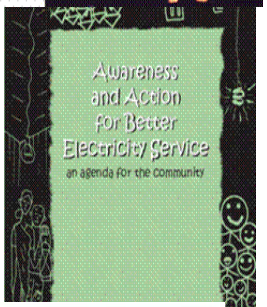
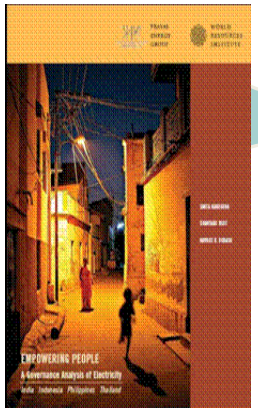










'Prayas' means
'Focused Effort'

Based at Pune, India

Research based, policy advocacy Voluntary Org.

Focus on protection of "Public Interest" in

electricity sector

Activities:

- **Research & intervention (regulatory, policy)**
- **Civil Society training, awareness, and support**

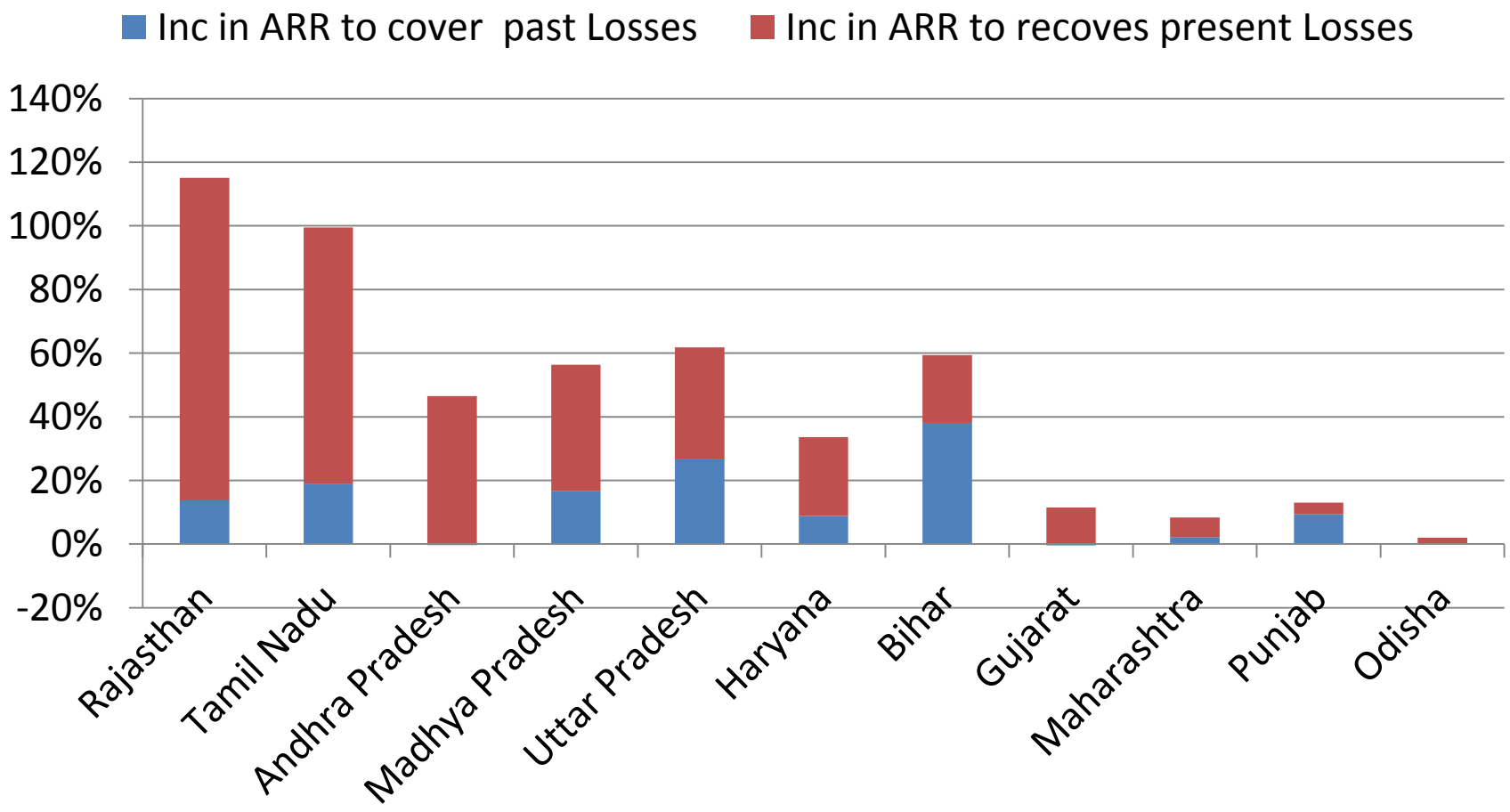
Outline

- Assumptions in tariff optimization
- Quality of supply & service, efficiency
- Present challenges
- Suggestions for way forward

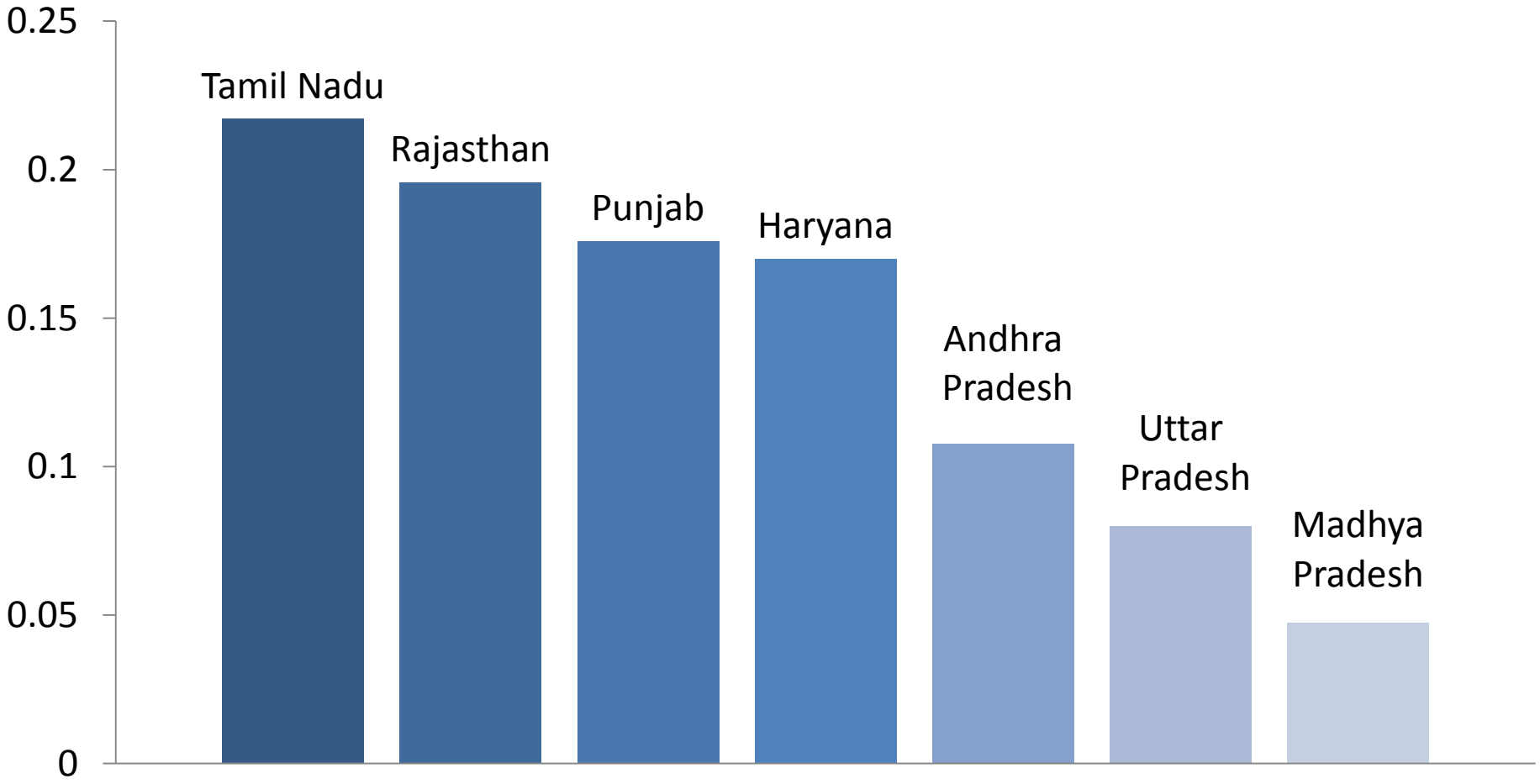
Implicit assumptions

- Is tariff optimization real challenge for ensuring 24 x 7 supply?
  - Fuel constraints and power purchase planning related issues
  - Electrification: ~35% HH still do not have access to electricity
  - Structural disincentive for discoms to supply to rural HH
- Does higher tariff imply efficient costs?
  - E.g. Mumbai tariff is highest because discom has not done proper power purchase planning
- Does supply and service quality improve with increase in tariff?
  - Recently many states increased tariff but has it improved hours of supply or service quality?

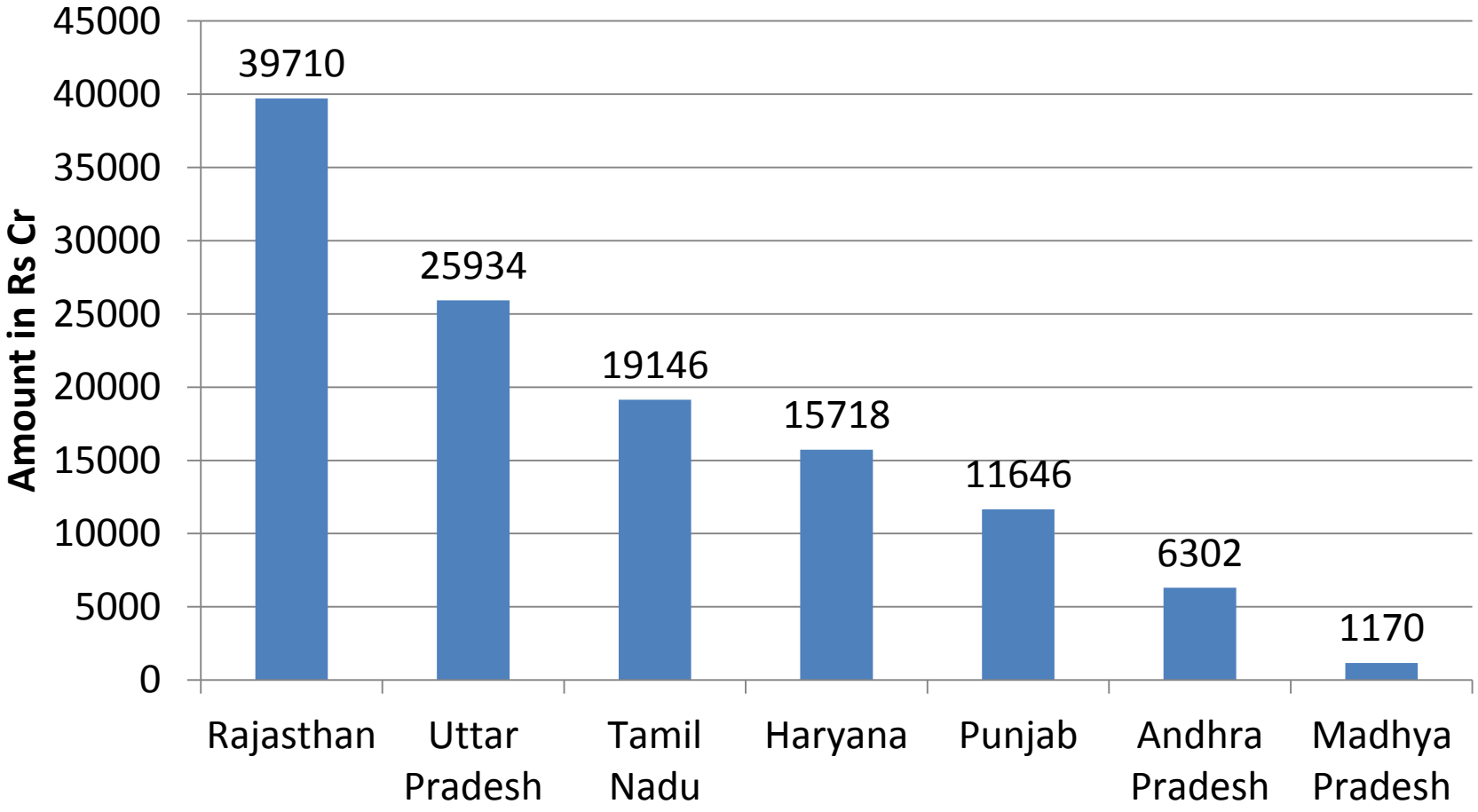
Increase in tariff = Increase in revenue?



Proportion of (high cost) short term power in total power purchase

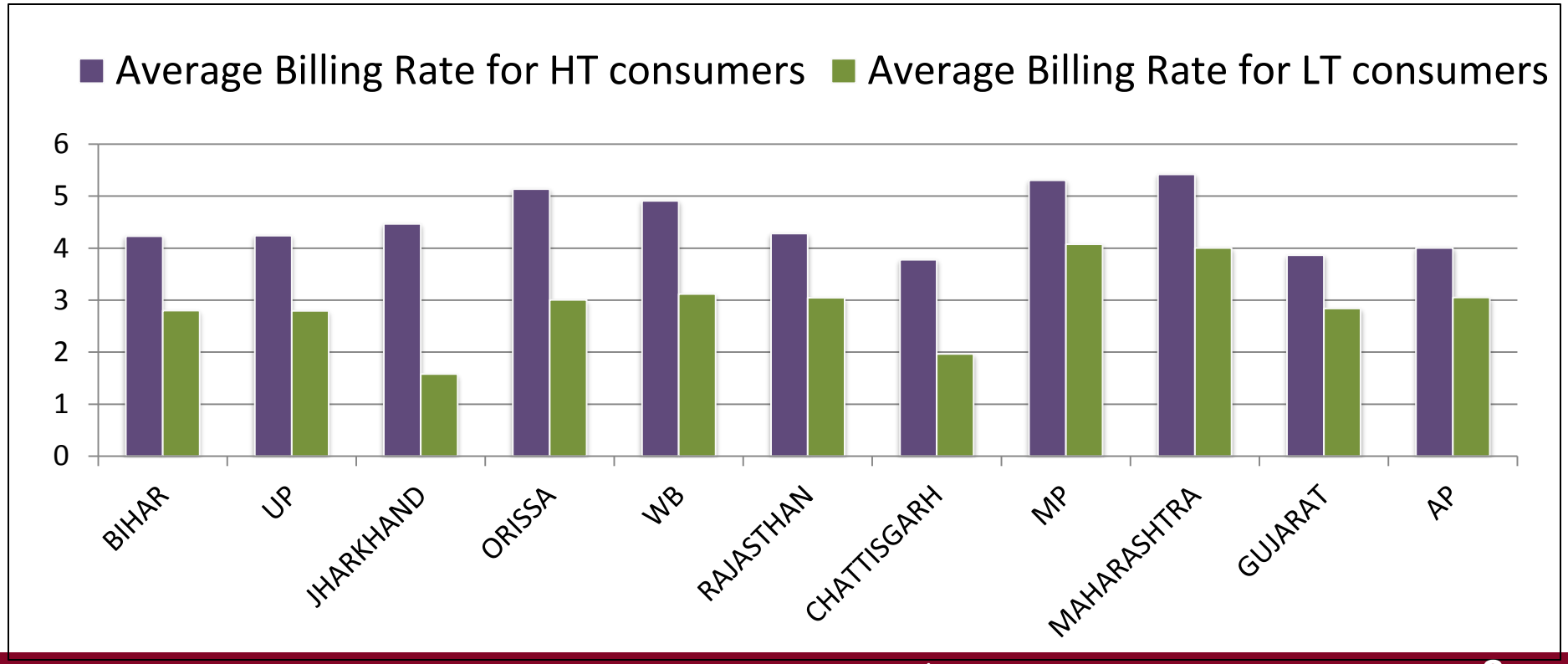


Short Term Liabilities (Rs Cr.)



Open access impact – additional challenge

- HT consumers: Significant share in total revenue, high ABR and collection efficiency
- Loss of cross-subsidy per unit may outweigh the gain of avoided power purchase cost, if any.



Tariff and Efficiency –weak link?

- Failure in power purchase planning across states
- No mechanism to evaluate prudence of capex schemes
- No significant improvement in metering and billing practices/processes, losses still high
- Not much improvement in generation efficiency parameters like SHR, PLF, Aux consumption, etc.

Tariff and Service Quality – missing link?

- Who is tracking quality of supply and service?
  - Very few SERCs are collecting and publishing data as per section 59(2)(b) of the E Act 2003
  - No data regarding of hours of supply, NSSO also does not track this information
  - No reliable metering and energy audit data in spite of R-APDRP like schemes
  - No SERC ensuring accountability and transparency in load shedding

Scope for improvement

- In spite of challenges and limitations of tariff as a policy tool, scope for improvement through innovation in tariff design

- MERC has tried several innovative tariff ideas
  - T&D loss charge
  - Additional supply charge
  - Load shedding protocol
  - Zero load shedding model
  - LT General category (combining domestic and non-domestic consumers consuming less than 300 units per month)

Need for further innovation

- Some new ideas:
  - Simplification of present tariff categories
  - Separate tariff category for deemed open access consumers
  - Addressing structural disincentive which prevent licensees from supplying to rural households

New unified 'LT-General' category

- Combine present LT Domestic and non-domestic categories into single LT-General category
- Telescopic tariff for entire category
  - Lowest slab (BPL) 0-50 units per month and highest tariff for slab of more than 300 units per month
- Tariff of highest slab (300 units/month) to be high enough to encourage shift to alternatives such as roof-top solar PV systems
- Licensee should be revenue neutral (no intra-category cross-subsidy)

Consumer segregation

- Separation of consumers in ARR and Business Plans
  - Eligible consumers classified as 'deemed open access' consumers whether they opt for Open Access or not.
  - Realistic estimation of power purchase requirement, sales and revenue from deemed OA consumers

- Non open access consumers must be served on priority

- Only surplus after meeting obligatory demand must be sold to deemed open access consumers
  - No Load shedding allowed to meet demand of deemed open access consumers

Separate Tariff for 'Deemed Open access' consumers

- Deemed OA consumer who choose to take supply from alternate source
  - Should pay Cross-subsidy charge and wheeling charges
  - DISCOM not obligated to serve these consumers, can be given power if surplus is available
  - Tariff for such temporary supply should be sufficiently high to discourage opportunistic switching between market and licensee

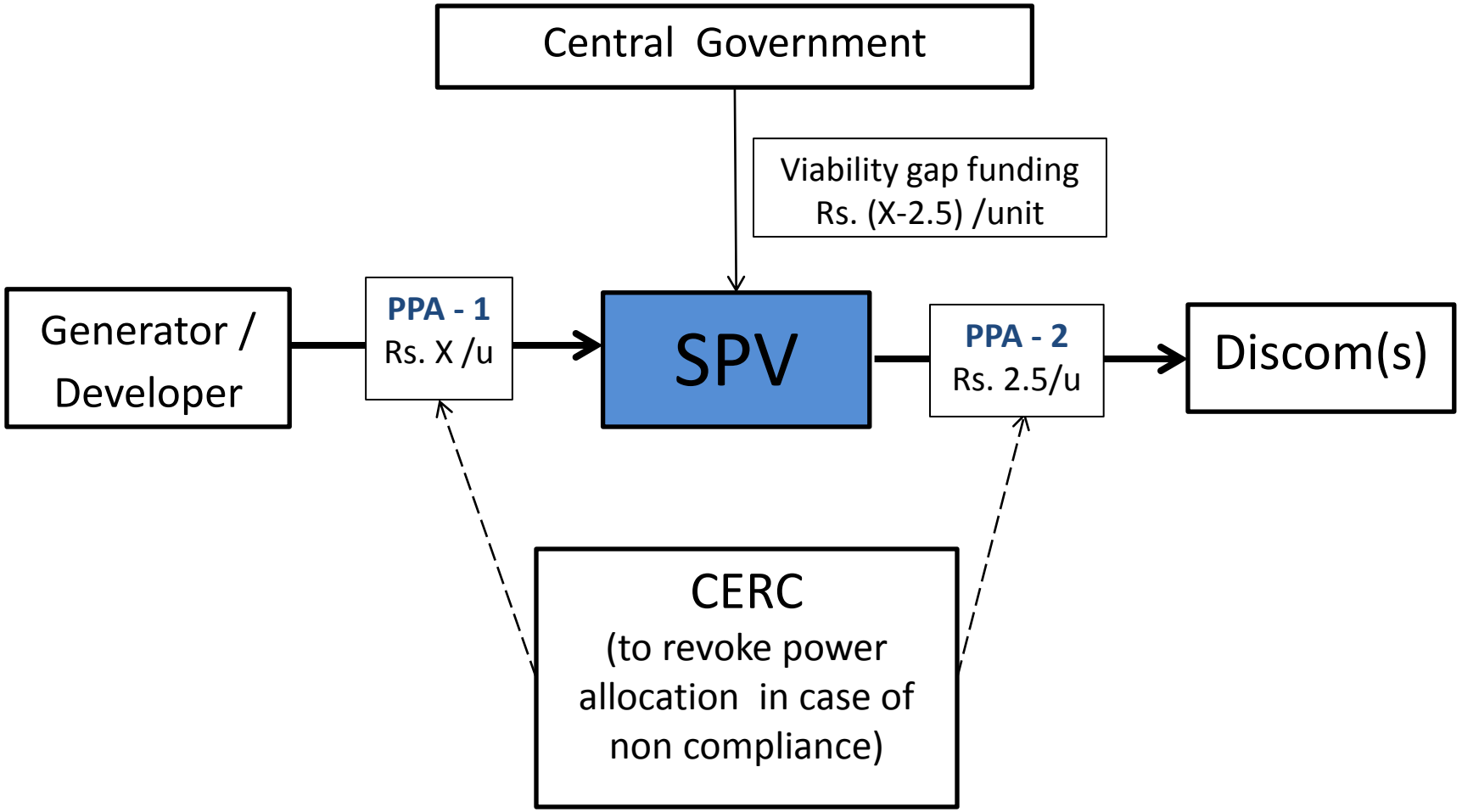
- Deemed OA consumers can opt to stay with DISCOM
  - Should sign at least 1 year contract with DISCOM.
  - Discom obligated to serve such consumers.
  - Conditions of contract and grievance redressal to be addressed in distribution open access regulations

Structural disincentive for DISCOMs to supply power to rural households

Marginal Power purchase cost in Rs/u	3.5*
PP cost after accounting for Distribution loss of ~20%	4.4
Distribution margin in Rs/u	1.0
Total cost of supply in Rs/u	5.4
Revenue from sale to electrified HH in Rs/u	1.5
Loss per unit	3.9

**without accounting for the fact that this power will be required at peak hours and hence will be costlier*

Possible approach for overcoming structural disincentive



Reduction in Structural Disincentive because of suggested approach

Particulars	Current Scenario	Proposed Scenario
Marginal power purchase cost (Rs./ unit)	3.5	*2.5*
Power purchase cost after considering distribution loss of 20% (Rs. / unit)	4.4	3.1
Distribution cost / margin (Rs. / unit)	1	1
Total Cost of Supply (Rs./ unit)	5.4	4.1
Revenue from sale to electrified HH (Rs./ unit)	1.5	1.5
Loss to DISCOM (Rs./ unit)	3.9	2.6
Surplus from sale of additional units (3 units x 0.8 Rs./ unit)		*2.4*
Net loss to DISCOM (Rs./ unit)	***3.9*** →	***0.2***

Factors facilitating innovation

- Credibility and capacity of regulatory institution
  - Due public processes should be followed
- Licensee should be made accountable for load shedding
  - Need for protocol
- Better monitoring and compliance with service quality standards
  - Reporting as per section 59(2)(b)
- All stakeholders i.e. Government, licensees, consumers and the commission need to work in collaboration

Issues related to autonomy and credibility of regulatory institution

Post	Vacancy < 3 months	Vacancy > 4-12 months	Vacancy > 1 year	Vacancy > 2 years
Chairperson	20	17	3	2
Members	41	28	2	15

- Building credibility needs continuous effort over long term
- Need to improve public participation processes
  - Hearings at multiple locations
  - Important information should be made available in regional languages
- SERC should focus on issues that matter to people
  - Compliance with standards of performance, loss reduction, load shedding, improving access, etc.

Concluding remarks

- Tariff has limitations as policy tool but there is scope for innovation
- Possible way forward
  - FOR to issue guidelines for better tariff design
  - SERCs to focus on all factors that would result in 24 x 7 supply to all consumers and not just tariff revision
  - Re-structuring RGGVY to address structural disincentive
  - Revise National Tariff Policy to operationalize open access
  - Improving accountability and autonomy of ERCs by suitable amendment to Electricity Act

Thank you!

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