

Market creation for Energy Service Providers through DSM bidding process

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Outline

- ▶ DSM Acquisition process
- ▶ Procuring demand-side resources
- ▶ Stakeholder benefits
- ▶ Context of feeder-based bidding process
- ▶ Market engagement
- ▶ Examples

What is DSM Resource Acquisition?

- ▶ A process that allows the grids to “Acquire” demand-side resources at par with the supply-side resources
- ▶ Allows monetizing demand and energy benefits specific to feeder (choke points)
- ▶ Define program goals that are technology-neutral but that reflect the end-use load profiles and efficiency gains
- ▶ Payments to implementing partners (Energy Service Providers) paid based on monitored kW and kWh savings

Two methods define DSM Acquisition process at utility feeders

DSM Acquisition Options

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graph TD; A[DSM Acquisition Options] --> B[Feeder-based Competitive Bidding]; A --> C[Standard Offer];
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Feeder-based Competitive Bidding

- Utility issues RFP to acquire kW and KWh savings
- Selection done through evaluation of technology, proposed M&V and Rs/kW and Rs/kWh rate structure
- Payment terms usually linked to verified savings
- Implementers may get different Rs/kW and Rs/kWh rates

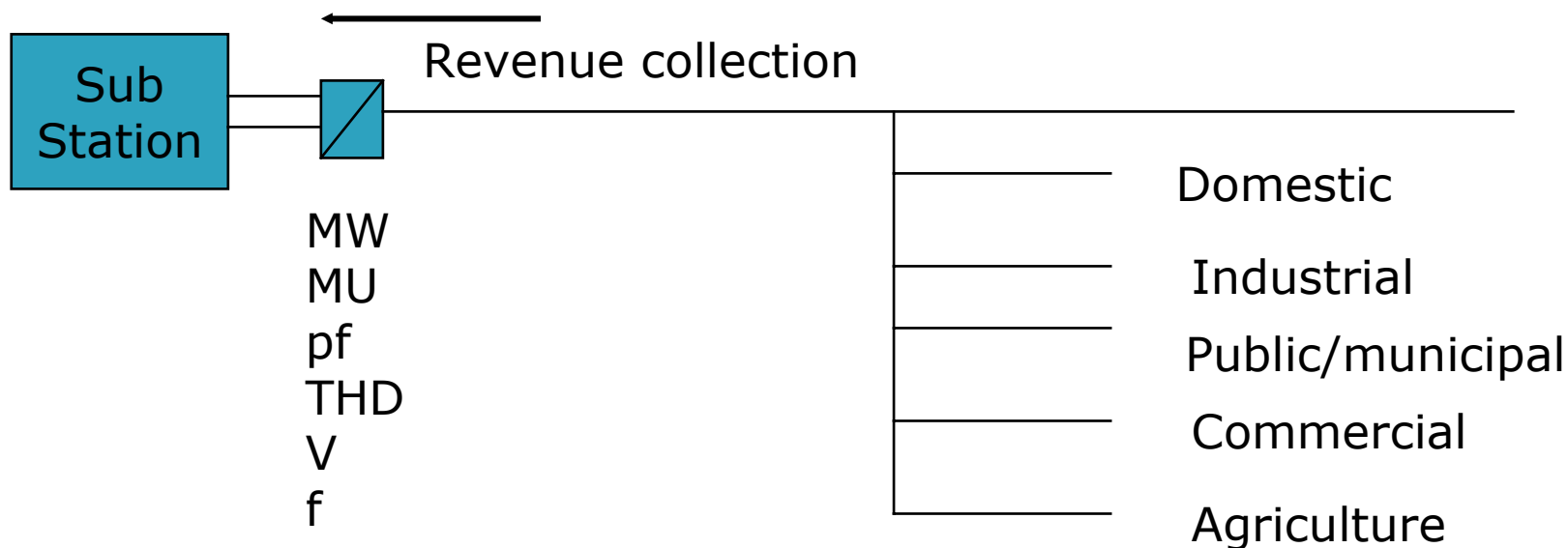
Standard Offer

- Utility pre-determines price that is affordable to pay implementers (Rs/kW and Rs/kWh)
- Provides standardized M&V protocols for certain classes of programs
- Payment terms usually linked to verified savings
- Implementing organizations get same Rs/KW and Rs/KWh rates

Feeder-based bidding can bring ease in monitoring and implementation

- ▶ Easier to implement, measure and monitor
- ▶ Benefits for certain feeders may be greater than others
- ▶ Can involve local consumer groups
- ▶ Can allow for implementation of distributed resources
- ▶ Helps integrate DSM into distribution planning
- ▶ Facilitates program scale up

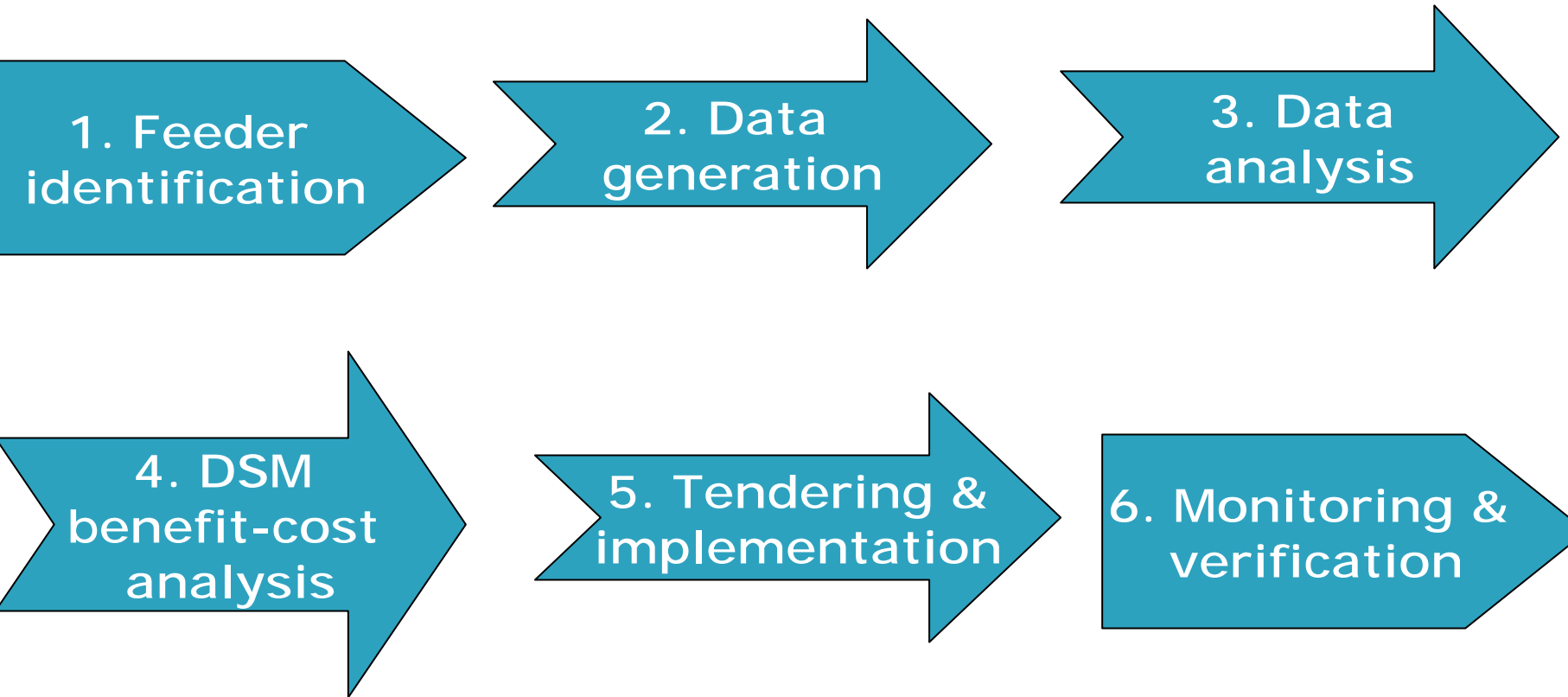
DSM bidding project development process starts at “feeder-point” audits



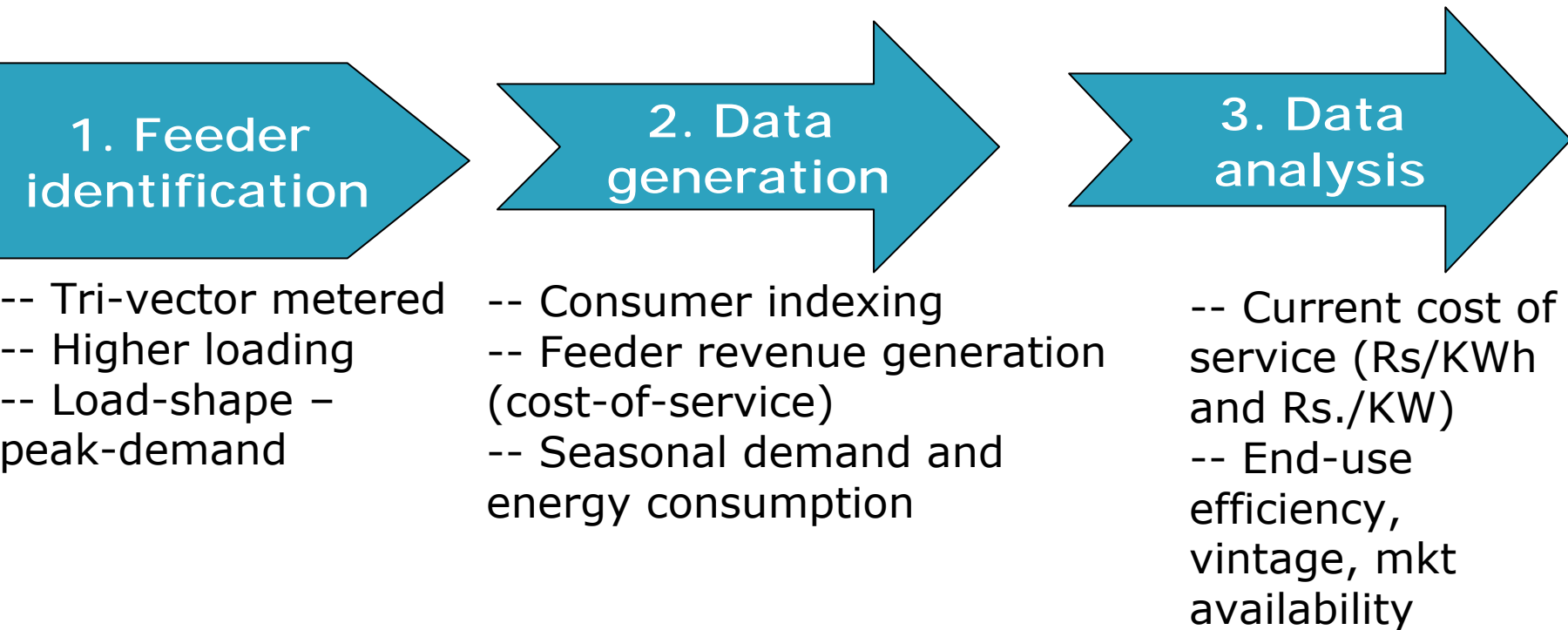
Focused consumer surveys/load-research (design/M&V stage)

| # of appliances/eqpt | Old KW | New KW |
|----------------------|--------|--------|
| | | |

DSM bidding process includes clearly defined project development steps



DSM bidding process needs to consider data and collection process



DSM bidding process would including comparisons of Rs/kW and Rs/kWh

4. DSM benefit-cost analysis

- Three levels – consumers, suppliers/providers and utility
- Simple pay-back, IRR calculations

5. Tendering & implementation

- Evaluation protocol to select private sector and NGOs/consumer groups
- Bid value for Rs/kW and Rs/kWh
- Timeline and benefits
- Options for utility, consumers and vendor involvement

6. Monitoring & verification

- Pre-determine feeder benefits Rs/kW, Rs/kWh
- Linked payment terms for savings

Stakeholder benefits in the DSM bidding process are clear

Consumers - benefits

- Reduced electricity bills
- New appliance/equipment stock
- Multiple technologies

Consumer - costs

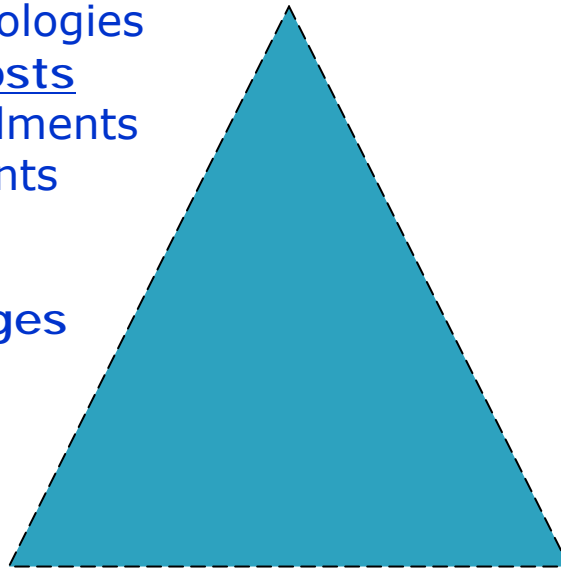
- Monthly installments
- Bidder payments

Utility - benefits

- Reduced demand-charges to generators
- Capacity offset
- Reduced outages
- Higher revenues

Utility - costs

- Bidders payment
- Upfront costs



Bidder - benefits

- Increased market share
- Assured payment with utility pass-through

Bidder - costs

- Implementation costs
- O&M cost

DSM bidding can be used to create larger market for ESPs

- ▶ Energy service provider activities have been limited to:
 - Single facility energy efficiency/demand savings opportunities
 - Benefits sharing with facility owners alone .. leaving utility markets outside the “benefits” equation
- ▶ DSM bidding would scale-up homogenous and heterogeneous feeders in a single bid:
 - Homogenous – multiple users on a Commercial or Agriculture feeder
 - Heterogeneous – small-commercial, residential and public sector end-uses

Examples .. proposed solicitations from Indian utilities

- ▶ Residential feeders:
 - Mumbai – Reliance Infrastructure (solicitation still open)
- ▶ Commercial feeders:
 - Commercial hubs in Mumbai – BKC .. consolidation of HVAC load management related to a load of 50 MVa
 - Bangalore electronics city
- ▶ Agriculture feeder
 - Karnataka – rural DSM
 - Maharashtra – concept-stage

► Thank you!

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- 1. Presentations by Mahesh Patankar and Dilip Limaye at IIEC project workshop organized in October 2008*
- 2. New York State Energy Development Agency (NYSERDA) DSM bidding documentation*
- 3. Author interactions with utilities in India*