Smart Grid In South Asia

Session 2 : Microgrid in Rural Areas 20 May 2015 Asian Development Bank

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Different Types of "Smart Grid" "Smarter Operation" **1. Generation Side:** e.g. Mini-grid for remote area / islands Optimization of power source to reduce fuel consumption **2. Distribution/Transmission Side:** e.g. Advanced Monitoring and Control Automated fault recovery, Facility monitoring for accident prevention, Tampering detection, Power loss evaluation etc. **3. Demand Side:**

- e.g. Demand Response
- Flexible Pricing, e.g. TOU, Peak Pricing, Incentives for customers to shave load curve
 Relevant IT systems should be renovated.

Smart Grid System in Puducherry



Advanced Metering Infrastructure



ICT Used in Puducherry smart grid pilot



Microgrid Project in Maldives

Hybrid Energy System

High Petrol Price

Low Power Generation Efficiency



Diesel Generator



Wind Turbine

Control System







Battery Storage System



PV Power Plant

Findings: Nepal

- Serious electricity shortage
- Low Electrification Rate
- Insufficient management and maintenance practice, heavy losses;
- **Basic LDC but adequate communications capacity;**
- Low PV & Wind penetration;
- **Priorities:**
- **Distribution system Extension;**
- Rural Electrification with Renewable Energy;
- Distribution automation.



Findings: Sri Lanka

- No electricity shortage;
- Much better performance in Colombo on reliability and losses;
- Supply-demand balance issue: low off-peak demand;
- **Concerns about large wind farm development in the near future;**
- **Priorities:**
- **Distribution System Extension in Northern Area;**
- **Distribution automation;**
- Load management



