

National Smart Grid Mission Ministry of Power Government of India

NEED FOR SMART METERING

2nd November, 2017, CBIP New Delhi

METERING TO CASH PROCESS

Energy Metering at Distribution level generates revenue for entire energy chain

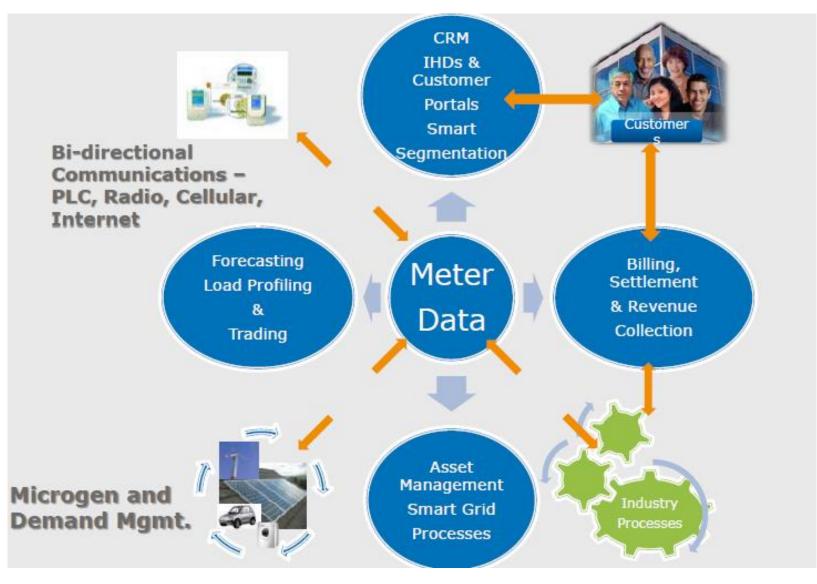


Revenue in 25-30 days post reading

Revenue in 7-15 days post reading

Revenue in 7-15 days – Prepaid also a possibility

Measurements Usage Multiplication



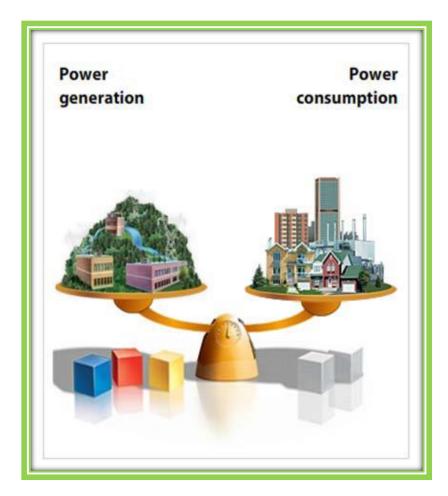
Load Management

Present practice- Majorly from Generation side

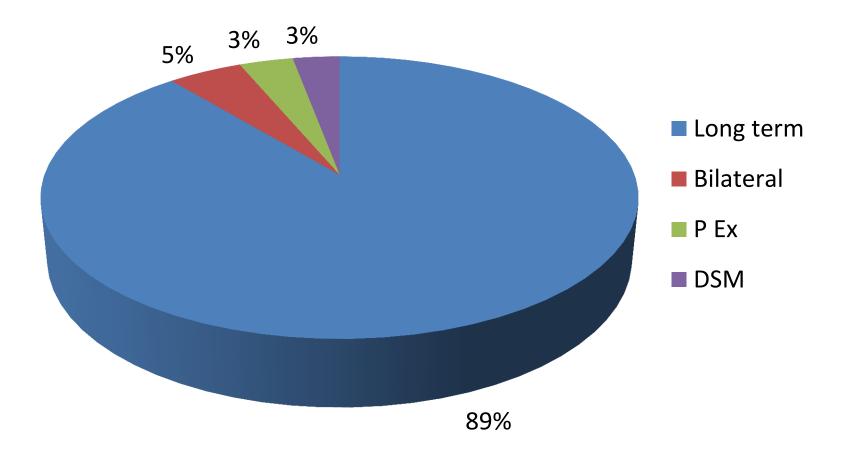
- Long term, Medium term and Short term-Commercial Mechanisms
- Day ahead and intra day- Basis flow of information incl Power exchange
- Information from Consumption end on guesstimation
 - On an average there have been 85 revisions by NRLDC in intra day schedules for States (Oct 17)
 - <u>That's 85/96 -88% so if evenely spread every 20</u> minute there is need for change, if bunched may be 40 minutes – About DR can be effective in some cases

Future with Smart Meters- Increased management from consumption end

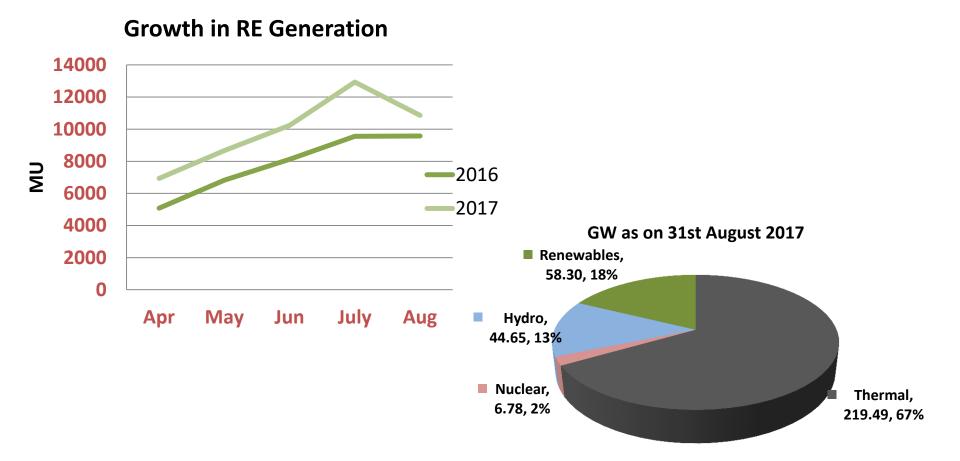
- Records and communicates data at intervals of 30 mins or less
- Credible information for load management



Share in Generation by Electricity Transaction type



RENEWABLE DISRUPTION



Renewables up from 15% in 2016 March to 18%

Renewable Disruption

Electricity Generation (Conventional & Renewable Sources) April, 2017- Aug, 2017 vis-b-vis April, 2016- Aug, 2016									
Month	Generation (April, 2017-Aug, 2017)			Generation (April, 2016- Aug, 2016)			% Growth		
	Generation from Conventional Sources	Generation from Renewable Sources	Total	Generation from Conventional Sources	Generation from Renewable Sources	Total	Growth in Conventional Generation	Growth in Renewable Generation	Growth in Total Generation
		(MU)	(MU)	(MU)	(MU)	(MU)	2	2	M
Apr-17	103,160	6,932	110,092	99,345	5,062	104,427	3.54	42 26	5.42
May-17	107,295	6,666	115,961	99,903	6,620	106,723	7.40	27.07	5.66
Jun-17	97,525	10,228	107,753	97,326	8,118	305,444	0.20	25.99	2.19
Jul-17	97,912	12,928	110,840	96,442	9,554	305,996	1.52	35.32	4.57
Aug-17	94,606	10,457	105,463	95,237	9,571	104,000	-0.66	13.44	0.62

EV Disruption

- ?? 2020 6 Million Evs
- 6 Units/Day
- Leads to 36 Million/ Day and 13 Billion a year
 - May be not to worry
 - Unless one accounts for
 - Concentration
 - Dynamism

Smart Metering Drivers for India

T&D loss reduction and efficiency improvements

• Reduce T&D network losses (including commercial) which is around 25%. Can be Mitigated through smart metering, modernization of lines and substations, automation systems

Access to energy for the masses

• Rural electrification of 100% households by 2017 by implementing micro-grids, rooftop solar, DER etc

Renewable integration to grid

Roof top solar, micro-grids, wind energy integration into the grid

Load Management

• Demand response, Demand Side Management enhancement in energy efficiency etc

System improvements

Reduction in outages/power cuts, improvements in reliability and quality of supply

Customer service

Improved customer service and "prosumer" enablement

Thank You

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