Ancillary Services: Regulatory Framework
Ancillary Services

Load-generation balance: Frequency Control

Network control: Voltage & Reactive Power Support

Congestion management: Transmission Reserves

Primary Control

Secondary Control

Tertiary Control

Regulation Up

Regulation Down
Reserves Regulation Ancillary Services: Objective & Scope

- **Objective:** to restore the grid frequency to desired level and to relieve congestion in the transmission network

- All generating stations that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity

- **Regulation Up:** utilize un-requisitioned surplus of regional generating stations to increase supply

- **Regulation Down:** instructions to decrease generation if load is lower than expected
Regulatory Framework

- Nodal Agency - NLDC (through RLDCs) - merit order stack of surplus capacities available based on variable cost of generation
  - Lowest VC to highest VC for Regulation Up
  - Highest VC to lowest for Regulation down
  - Regional / bid area wise stack

- Nodal Agency - forecasts daily region-wise demand on day-ahead basis
- Nodal agency shall direct selected RRAS providers for Regulation Up or Regulation Down based on the trigger events.
- Generation under RRAS scheduled to *Virtual Ancillary Entity* in one or more Regional Grids as decided by the Nodal Agency
- The schedules of the RRAS Provider(s) considered as revised by the quantum scheduled by the Nodal Agency under RRAS
RRAS Provider Rate- Variable Cost
(Paise/kWh for the period 16.07.17 -15.08.17)
Commercials

- Weekly energy accounting by respective Regional Power Committee (RPC) along with Deviation Settlement Account

- Payment to RRAS provider from Regional DSM Pool

- Regulation Up- RRAS Provider paid fixed and variable charges, with a mark-up
  - Fixed charges refunded to beneficiary to the extent of quantum surrendered
  - Mark-up : 50p/kWh
  - Fixed & variable charges at the time of delivery to calculate payment

- Regulation Down- RRAS Provider pays back 75% of variable charges corresponding to quantum of RRAS scheduled, to Regional DSM Pool
Building blocks of a reliable grid

- Primary Control- mandated under Indian Electricity Grid Code (IEGC)

- Secondary Control- Automatic Generator Control (AGC)-pilot at NTPC Dadri Stg-II

- Way forward: POSOCO has made suggestions in the half-yearly report, to be included in amendment