

Question 2.8 How is co-ordination between the various levels of operational planning and dispatch being maintained to ensure ongoing power system security and reliability?

Structure of Indian Electricity Sector

Policy for the energy sector are formed by CEA and Central/State government in India. Regulations based on the policy are notified by Central Electricity Regulatory Commission and State Electricity Regulatory Commission. Roles & responsibilities of various organisations are mentioned in regulations notified by CERC & SERC and amended from time to time. System operators (NLDC/RLDC/SLDC) are apex bodies at National/Regional/State level for monitoring the grid operations, outage planning and optimum scheduling of generations under their control area. Merit order despatch of state owned generating stations are done by SLDC and that of Regional entities/Central generating stations are done by RLDC. Cross-border energy transactions are monitored and scheduled by NLDC.

Hierarchy of load despatch centres

Data flow from SLDC → RLDC → NLDC for both conventional and renewable energy Management centre. NLDC will monitor and regulate inter-control area transactions and RLDC will monitor and regulate intra-State transactions and flows.

Operational planning and despatch

Annual LGBR preparation is done by Regional Power Committee (RPC) in coordination with RLDC and SLDC for the concerned region. Five year demand projection is done by each SLDC and intimated to RLDC/RPC. Power entitlement for each State from central generating stations are allocated based on the demand by RPC/CEA. Schedules for the commercial transactions will be based on the Available Transfer Capacity (ATC) published by NLDC for the inter-control area.

In REMC module, week ahead, Day ahead & Intraday RE forecasts are published and scheduling entity/RE developer can enter their schedule based on this forecast. Revision of forecast of RE generation happens for every 6-time blocks (1 time block=15 minutes) along with the revision of generation schedule. This helps the developer/scheduling entity to enter their schedule with accuracy. Schedules from REMC module is having interface with existing scheduling tool so that SLDCs will be able to view the consolidated schedule for any time block. Surplus/ deficit power can be sold/bought through Power exchange/ Green day ahead market/Real time market.

Outage planning is done monthly in coordination by RLDC and RPC. Any emergency outage needs approval from real time system operator before execution. Unit tripping/surrender of

power from generating stations are automated through various web based programs to help system operator in real time.