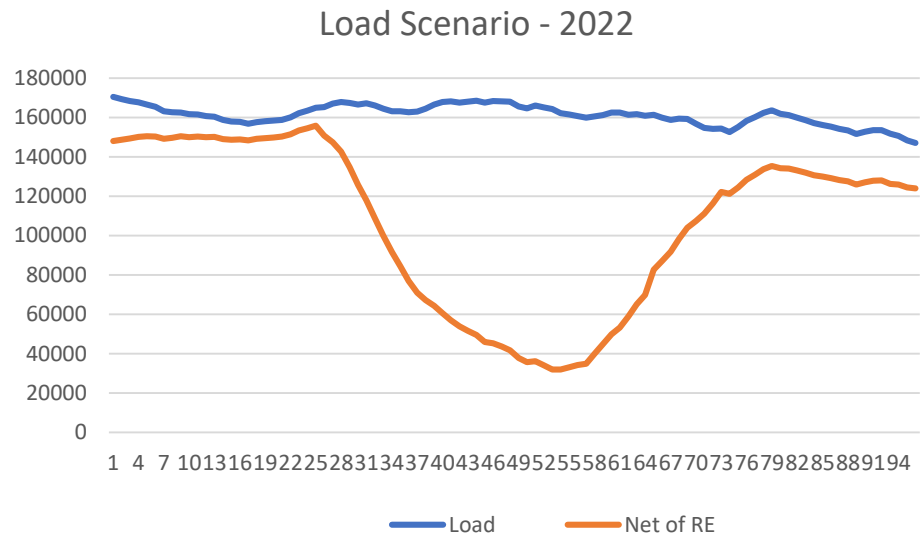
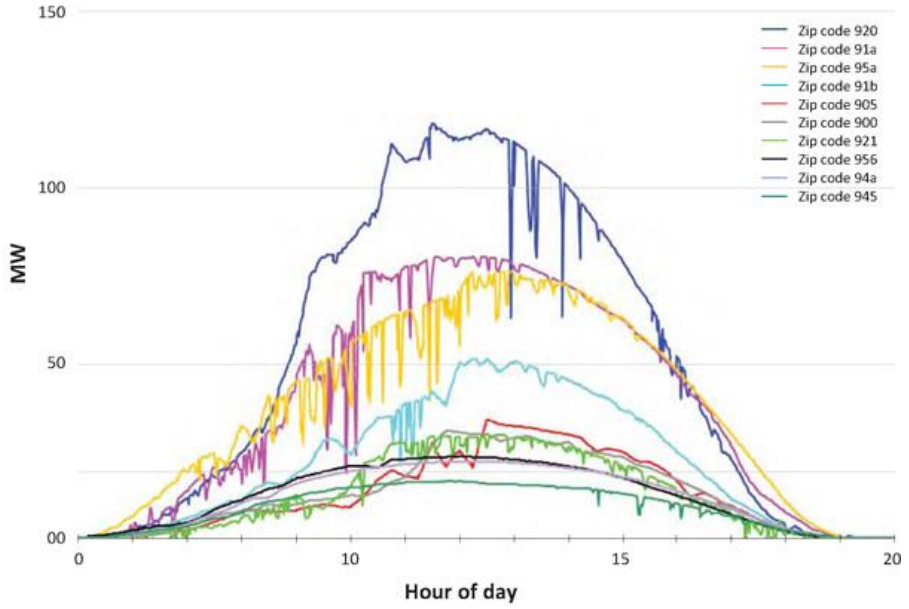
Round the Clock (RTC) RE Projects

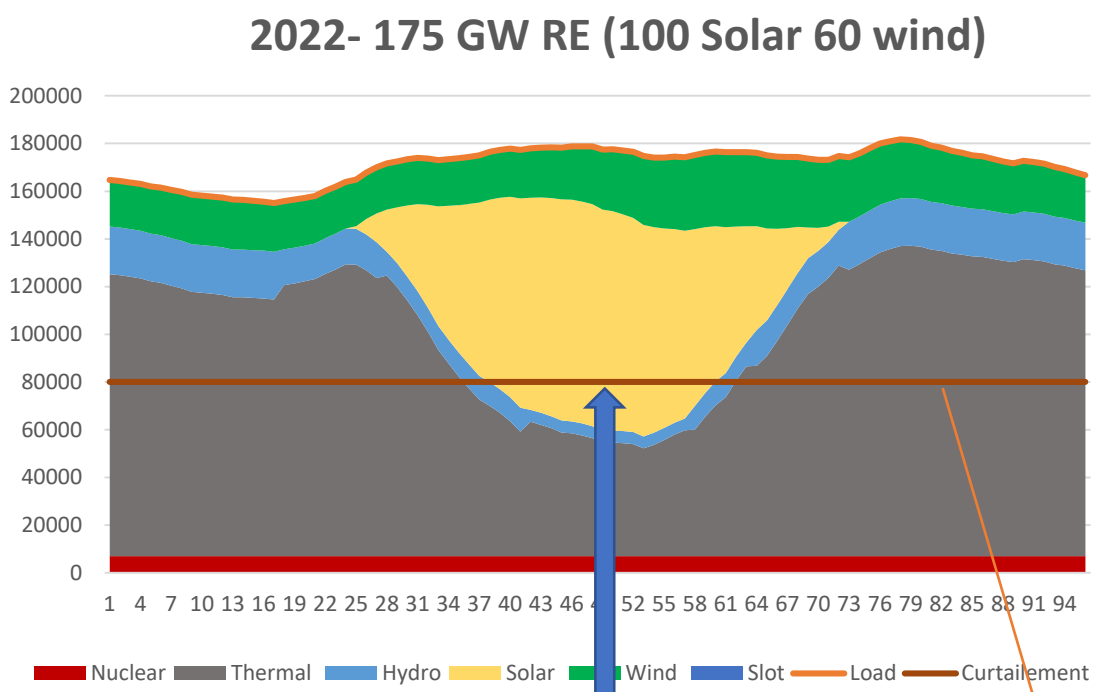
Issues in simple deployment of RE projects

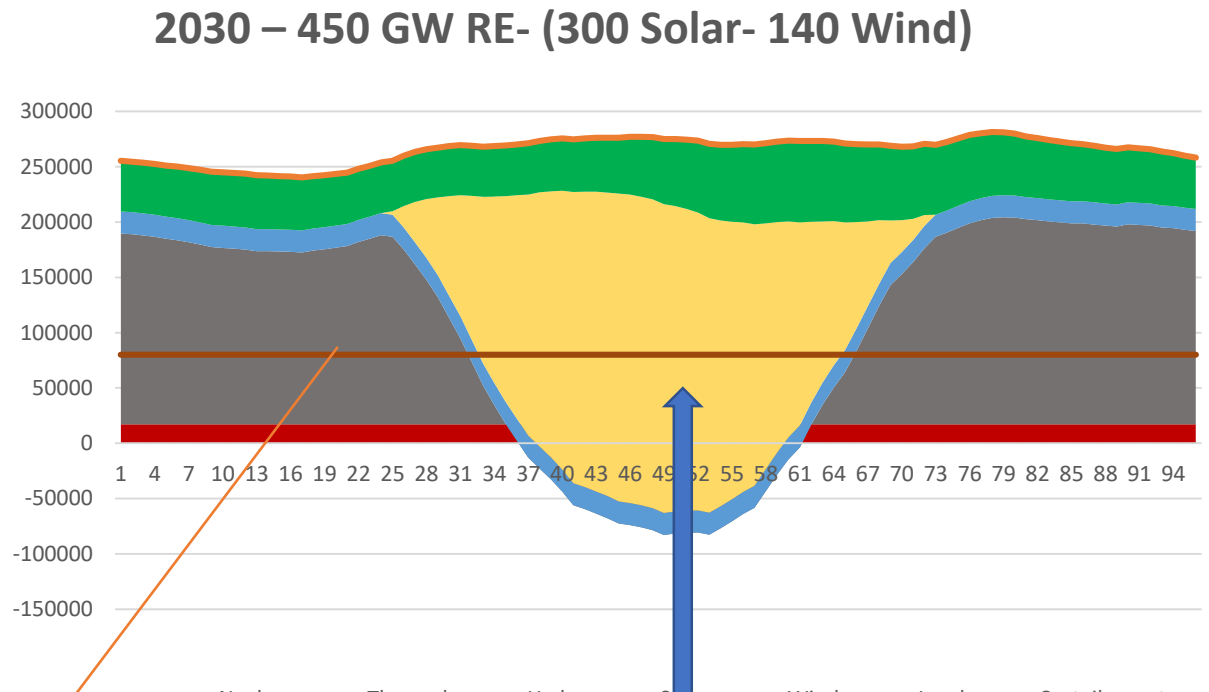
- **Intermittent generation**
  - Continued Dependence of conventional sources.
  - (~ 260 GW* by 2022 & 400 GW* of by 2030) (* after adjusting for unavailability and max loading)
- **Generation and load mismatch**
  - Curtailment of RE power to maintain technical minimum of other sources.
- **Occurrence of Duck Curve**
  - Demands steep ramping rates of conventional power plants
  - Requirement of fast response balancing plants like gas or Storage
- **Fluctuating generation of RE projects .**
  - Difficulty in scheduling due to Intermittent generation.
  - Huge Storage capacity requirement to maintain grid.
- **Requirement of additional transmission network.**





Generation Scenario- Simple RE- 2022/30





Curtailment >20%

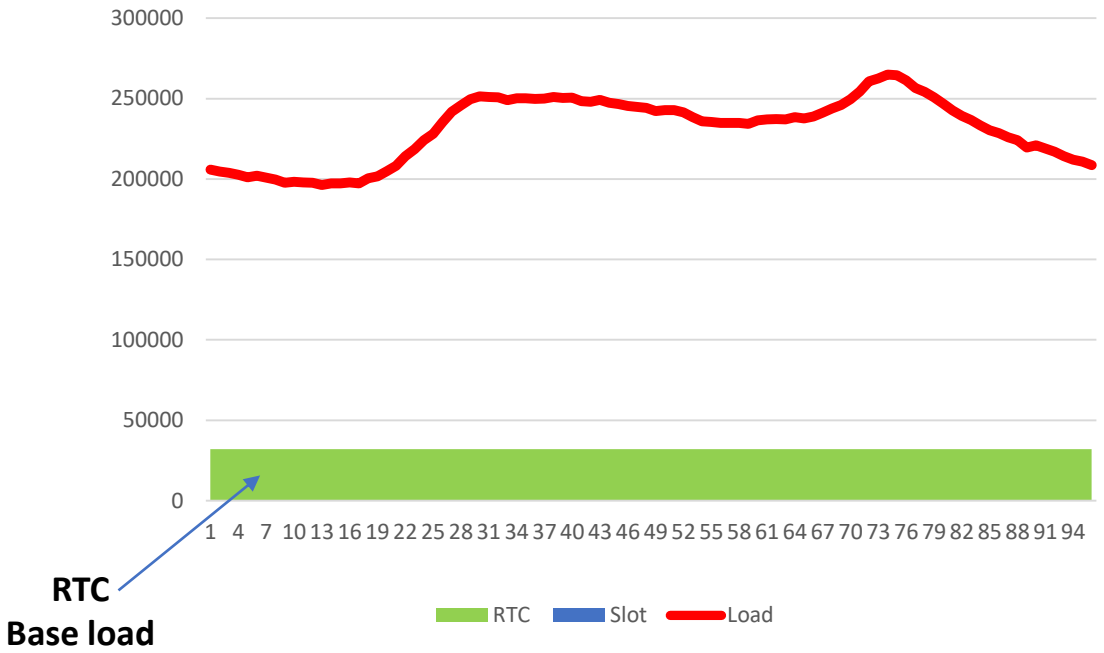
Technical minimum of thermal

Curtailment >47%

- Complete replacement of thermal Projects by RE is the solution.
- Round the Clock RE projects need to be promoted.

RTC RE solutions

- Round The Clock RE projects need to be promoted for
  - Absorption of 175/450 GW RE by the grid
  - Avoidance of Duck curve
  - Reducing curtailment of RE Power.
  - Grid stability.
  - Guaranteed Base load supply.
  - Promotion of quasi-merchant power.
- SECI released first of its kind 400 MW RTC –RE tender on demand by some utilities.
  - Assured round the clock delivery of power
  - 80% CUF annual & 70% CUF monthly
  - Allowed multiple injection points
  - Tariff with 3% annual escalation for 15 years
  - Excess generation can be sold in open market.



- It requires 200 GW of baseload by 2030.
- 50 GW RTC – RE projects required to replace 25% of base load.
- 50 GW RTC RE - needs 150 GW of RE project capacity.

Results of RTC RE tender – Cheaper than thermal

- The tender was oversubscribed by 2.1 times
- First Year tariff of Rs 2.91/kWh.
- Levelized tariff of Rs 3.59/kWh.
- The RTC-RE is clean power and also fulfil the RPO obligation of the utilities.
- Levelized tariff is Cheaper than thermal power in terms of tariff and other impacts
  - Rs 4.9/kWh with escalation in variable tariff. (MP auction)
  - RPO obligation.
  - Environmental impact.
  - High water consumption

Conclusion

- This is the time to work on development of RE projects to suit the base load of the demand
- 400 MW RTC –RE tender is first step in this direction.
- The Power offered through the proposed tender assures round the clock power supply.
- First Year tariff of Rs 2.91/KWh is competitive directly in tariff of conventional power.
- Lean RE power has other benefits over the convectional power.
- SECI will continue to work on such tenders with further improvements based on the market maturity.
- SECI is also focusing on peak, Intermediate needs of power demand of utilities.

THANK YOU