



The Economics & Politics of Rising NPAs

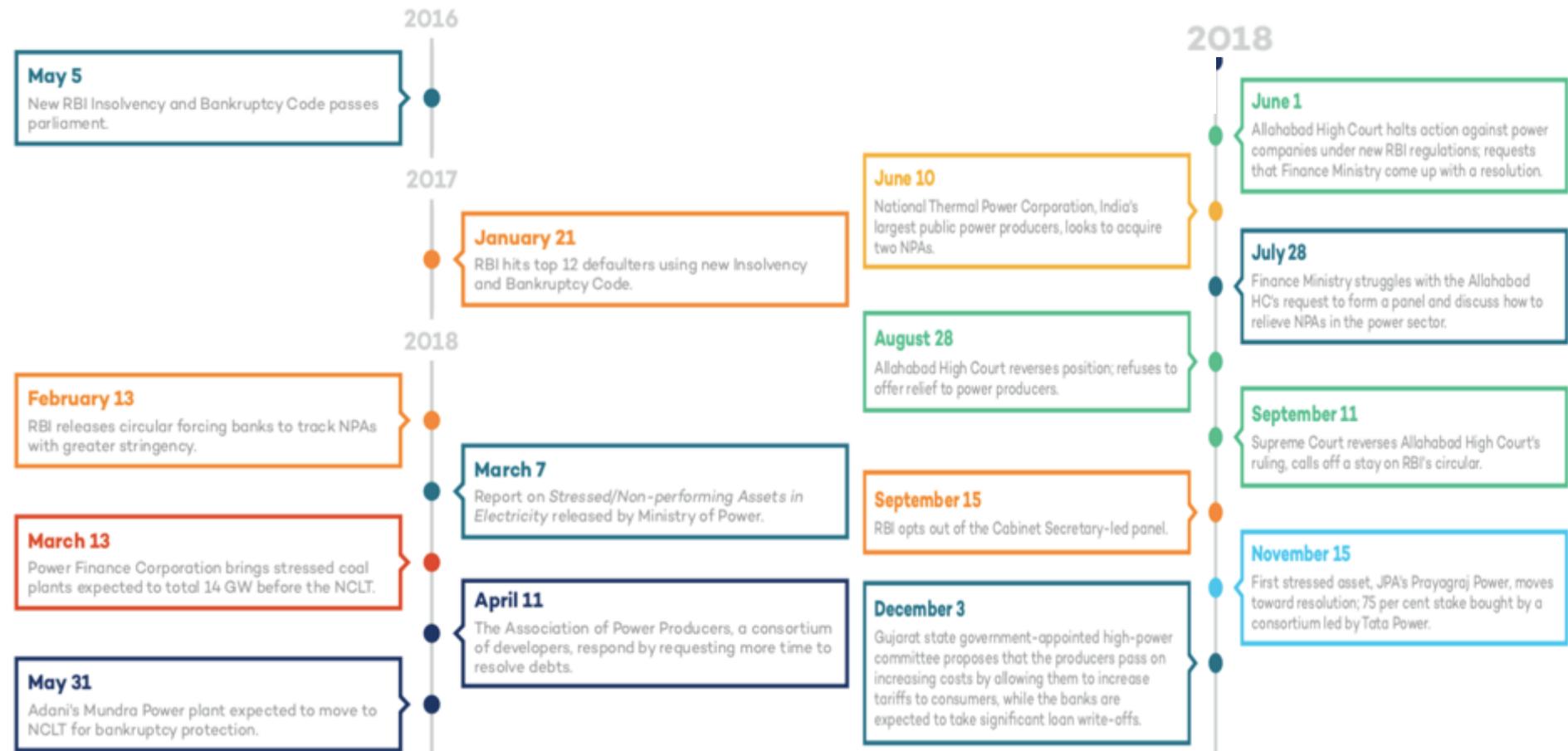
An Inquiry in to the Financial Impacts of the Indian Energy Policy



**Institute for Energy Economics
and Financial Analysis**
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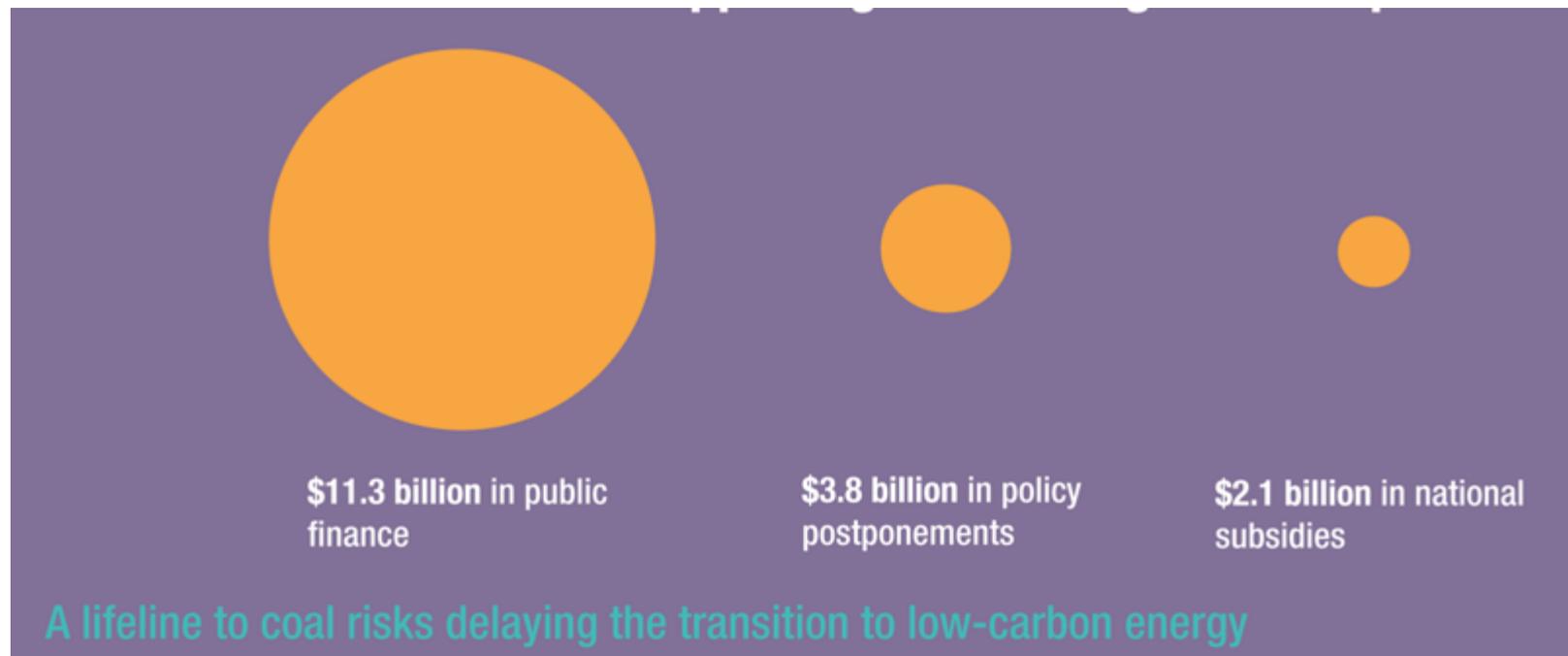
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1. Timeline of India's Stressed Coal Asset Crisis



- Courts
- Legislators
- Private Developers
- Private Lenders
- Public Developers
- Public Lenders
- Regulator

2. Government intervention supporting coal mining & coal power in India



- The Government of India is intervening in coal power (across the value chain from coal mining to power production and distribution) in several ways.
- This include support in the form of an estimated ₹74,114 crore (\$11.3 billion) in public finance, ₹13,960 crore (\$2.1 billion) in national subsidies, and support equivalent to ₹24,724 crore (\$3.8 billion) through policy postponement.

3. Major drivers of stranded assets in India's coal power sector



Cost competitiveness of renewable energy



Financial distress in power distribution companies



Air pollution regulation



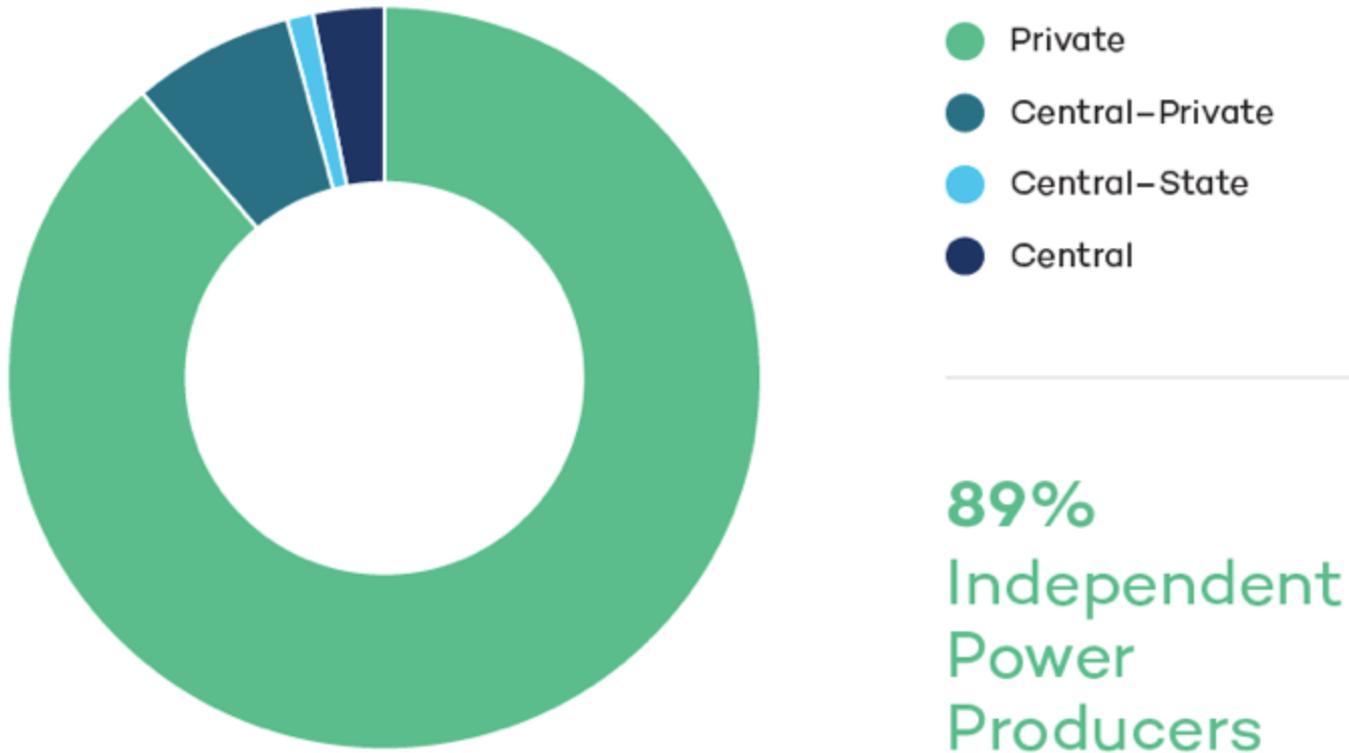
Water scarcity



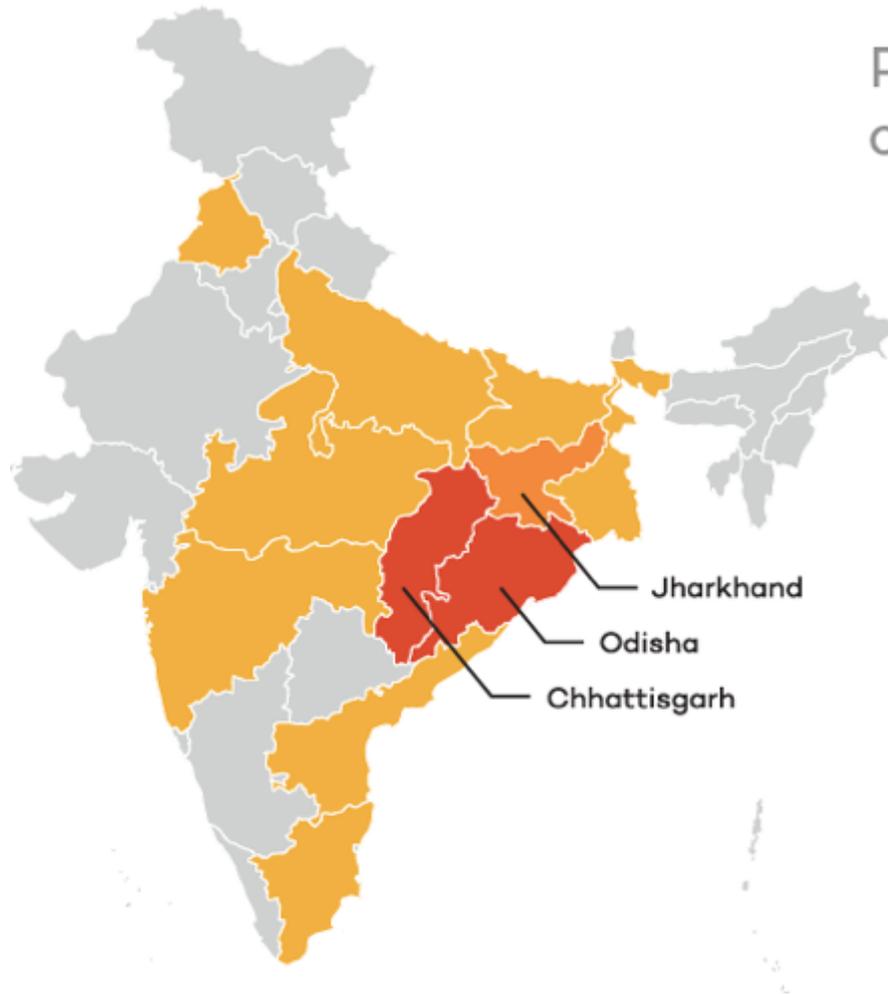
Coal shortages

Government interventions are undermining these signals and giving a lifeline to coal

4. Who's at risk of stranded assets?... (1)



5. Who's at risk of stranded assets?... (2)



Percentage of coal capacity stressed, 2019

Chhattisgarh

58%

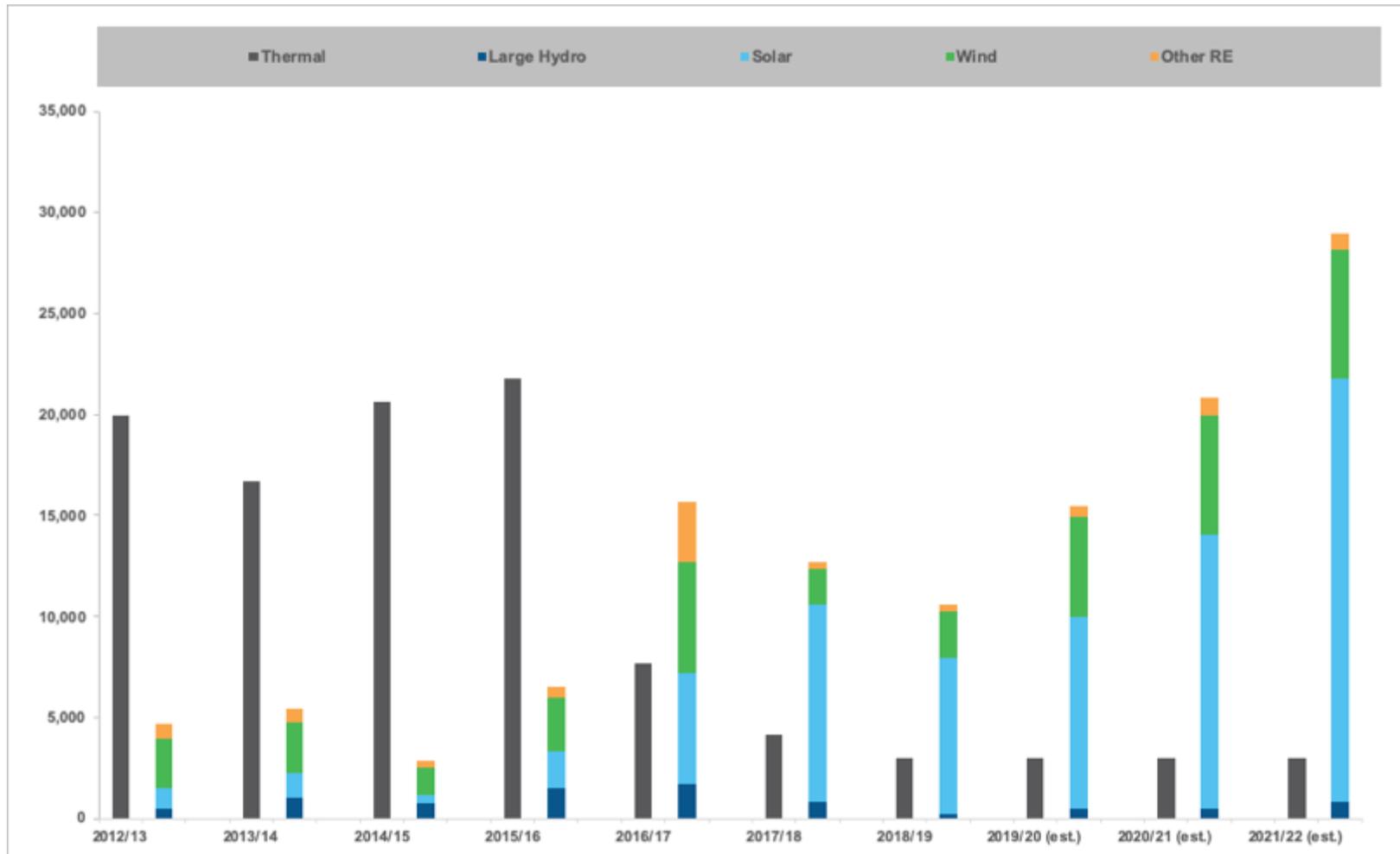
Jharkhand

27%

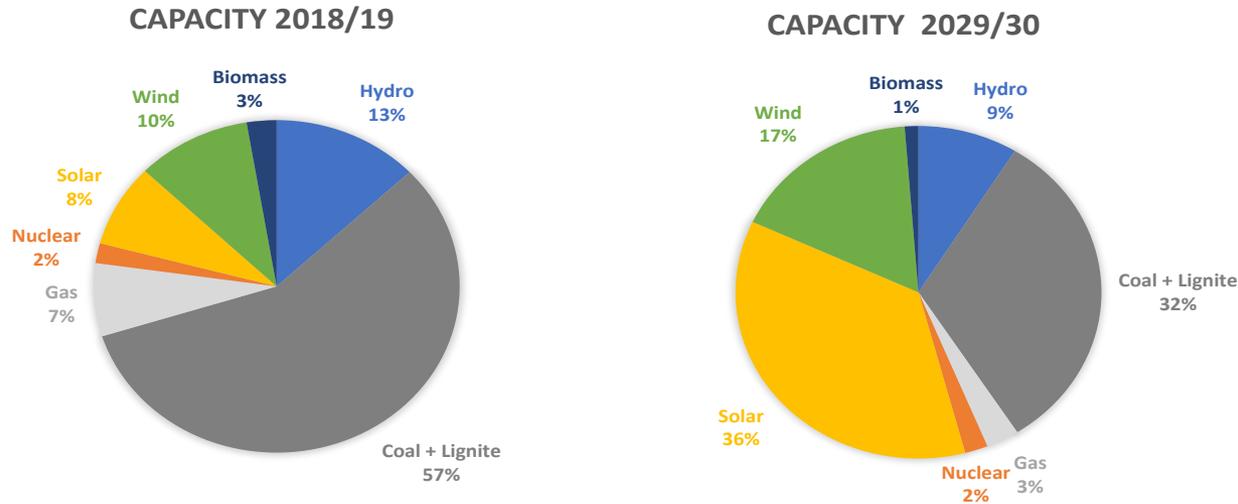
Odisha

55%

6. TPP vs RE Installs

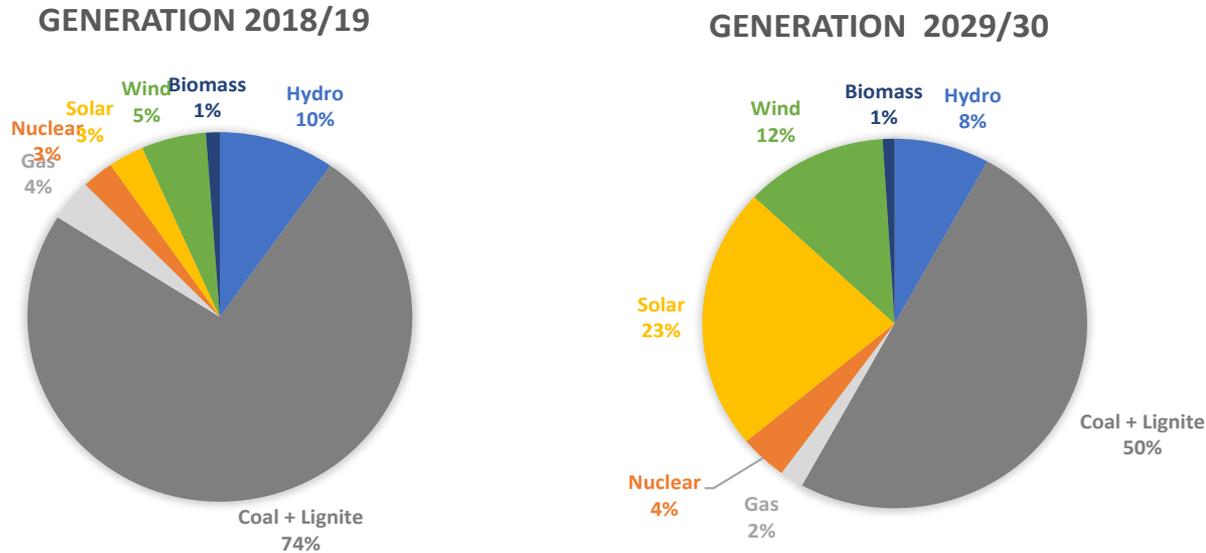


7. Installed Capacity Mix Changing



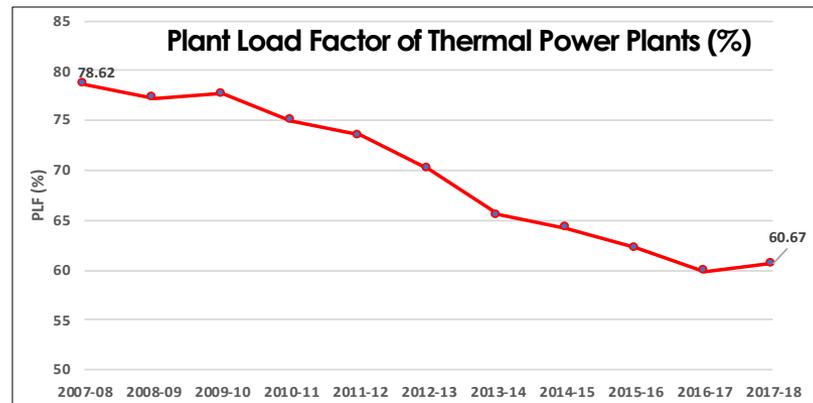
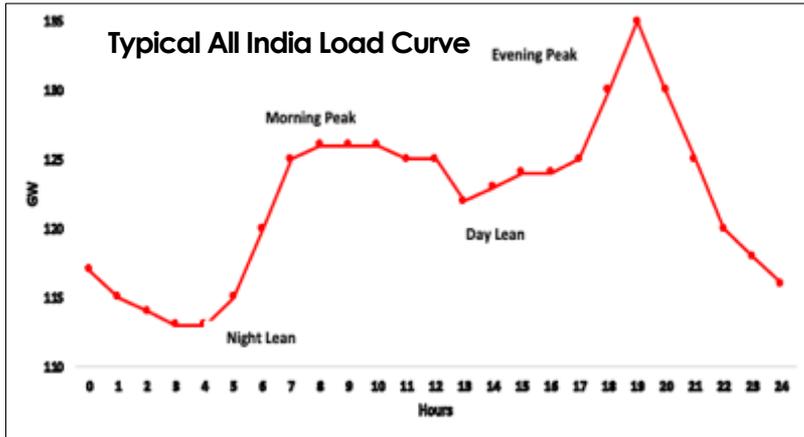
- Thermal capacity could drop from a 64% share to just 35% of total installed capacity in only 11 years
- Growth in renewable energy installed capacity is anticipated to be tremendous, with its share likely to increase from 20% in 2018/19 to over 50% in 2029/30
- If hydro capacity is included, renewable energy's share of total installed capacity increases from 33% in 2018/19 to 63% in 2029/30

8. Generation Mix also changing



- Share of generation from coal and lignite-based capacity is reduced to 50% in 2029/30 from 75% in 2018/19.
- While this estimate is entirely necessary from an air, water and carbon emissions/pollution perspective as well as economically sound, it also represents an unprecedented rate of market share loss for coal-fired power generation.
- The share of generation from variable renewable energy sources would increase from 9.6% to 35% during the same period (44% including hydro and biomass).
- SECI issued a Request for Selection (RfS) for setting up 1.2 GW of renewable projects connected with the interstate transmission system (ISTS) and with a guaranteed peak power supply

9. Need for right market signals for greater RE off-take



- A greater off-take of renewable energy power in India requires grid strengthening, improved interstate transmission capacity, and ideally a stronger price signal for peaking power supply to reward fast ramping and flexible peak supply
- India also needs additional storage in the form of batteries, wind-solar hybrid facilities, pumped hydro storage and gas peaking generators. Use of coal power for flexibilisation
- A time-of-day (ToD) pricing signal would better incentivise variable generation 'kicking in' at times of peak demand.

10. Recommendation

- Government interventions have an opportunity cost: the funds or services allotted by the government could instead be diverted to alternate power producers or general public services.
- Hold capital markets accountable for poor decision making: a quicker pathway to bankruptcy can send signals to better evaluate risks, minimizing the risk of large amounts of bad debt in the banking system and contributing to more stability and higher GDP in the long term.
- Switching promoters, which would not address underlying structure problems. Promoters to be made more accountable
- Assess scenarios for future cost-effectiveness of coal power based on key drivers of current and future stranding.
- Identify and evaluate the role of policy support mechanisms for coal.
 - Faster ramping coal power is a key initiative - both requiring capex and a modernisation of grid management operations, allowing coal to better integrated with ever higher VRE share.
 - Need a TOD pricing incentive to accelerate deployment of the lowest cost firming options eg gas peakers, PHS, batteries.
- Explore the complementary policies that can ensure that stranded assets do not lead to stranded workers and communities.