Boosting Solar Energy

What is the issue?

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Solar power in India continues to break records and the recent price of Rs 2.44/kWh in the Bhadla Solar Park in Rajasthan is an unprecedented low.

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Why there is a drastic fall in cost of solar?

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- The observers state that the regulations provide **implicit and explicit subsidies** and give preference to solar when supply exceeds demand.
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- But even without any subsidies, the cost of solar is around Rs 4/kWh only.
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- This is because of drastic fall in module prices, accessibility to **low-cost international finance** and accurate generation forecasts.
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Why there is a need to curtail the growth rate of solar?

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- Already, the **Grid-parity** has been achieved.
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- Grid parity is meant to describe the point in time, at which a developing technology will produce electricity for the same cost to ratepayers as traditional technologies.
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- Solar power now is around **18% cheaper than coal-based generation** in comparable capacities.
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- Some observers argue that the aggressive growth of solar in India will lead to defaults on the huge debt that finances thermal power plant (TPP) projects.

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- In order to prevent such adverse effects on financial institutions, it is recommended that curtailment of the growth rate of solar so that TPPs can operate at higher plant load factors (PLFs).
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What is the real challenge in solar?

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- The real challenges with large-scale solar deployment are not the negative financial impacts on TPPs.
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- The biggest problems posed by India’s aggressive solar plans are **reliability and grid integration.**
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- It is virtually impossible to meet India’s electricity needs with solar alone, since most **load profiles of states show peak demands occurring after sunset.**
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- Because, solar radiation varies and disappears completely after sunset.
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- Even during day time, when industries need a stable supply of electricity, **fluctuations in solar radiation** can cause major issues.
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- The only way to resolve this issue is to have **sophisticated balancing and scheduling mechanisms** so that the grid can absorb intermittent generation and compensate with other fast-ramping generation options.
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What is the way forward?

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- But, until a robust solution with solar and **appropriate storage** is commercialised, we still need coal to provide stable power.
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- So, instead of blaming solar for a potential downfall, existing TPPs under threat need to evolve and innovate to increase their PLFs.

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Source: Business Standard

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