Highlights from the National Dialogue

Powering India's Future: Policy, Markets and Innovation for a Clean Grid

Wednesday, 12 March 2025 | New Delhi

Overview

The National Dialogue convened key stakeholders to deliberate on how India can accelerate its clean energy transition while meeting rising electricity demand. The event opened with reflections on the sector's achievements, priorities, and challenges during the Plenary, followed by a focused discussion on the critical role of state-level leadership in scaling renewables. The latest CEEW report[1] on "*How can India Meet its Rising Power Demand? Pathways to 2030*" was launched thereafter. Subsequent sessions explored innovations in market design to unlock industrial clean energy procurement and the need for digital and standards-driven approaches to empower consumers.

[1] Agarwal, Disha, Arushi Relan, Rudhi Pradhan, Sanyogita Satpute, Karthik Ganesan, Shalu Agrawal. 2025. *How can India Meet its Rising Power Demand? Pathways to 2030*. New Delhi: Council on Energy, Environment and Water (link).

Plenary | Energising *Viksit Bharat*: Secure, Smart, and Sustainable

Shri Shripad Yesso Naik, Hon'ble Minister of State for Power and New & Renewable Energy

In his keynote address, Hon'ble Minister Shri Naik underscored India's remarkable progress in clean energy, from 76 GW of non-fossil capacity in 2014 to 220 GW in 2025. He remarked that **renewable energy forms the bedrock of India's future energy security**. Appreciating the timeliness of CEEW's latest report, he urged the states to harness their unique renewable potentials to build a financially sustainable and consumer-centric clean grid.

Dr Suresh Prabhu, Trustee, CEEW and former Cabinet Minister

In his special address, Dr Prabhu highlighted that the **Electricity Act of 2003** transformed India's power sector from scarcity to opportunity by unbundling generation, transmission, and distribution and inviting private participation. As India's per capita income and GDP grow, energy demand will rise substantially. To secure our energy future, India must scale up to 600 GW of non-fossil capacity by 2030, as highlighted by CEEW's latest study.

He stressed on the need for better **demand-side management (DSM) and leveraging distributed renewable energy (DRE)**. Aggressively prioritising DSM can substantially reduce the need for massive capacity additions, especially as new energy-intensive sectors like data centres rapidly expand. DRE can significantly reduce transmission needs, lower financing requirements, and stimulate local economies through job creation.

Shri Ghanshyam Prasad, Chairperson, Central Electricity Authority (CEA)

In his special address, Shri Prasad reflected on key initiatives by CEA to ensure resource adequacy and optimal generation and transmission planning. He outlined four key focus areas for India.

Joint Centre-State exercises in resource adequacy planning: He shared that soon CEA will initiate annual state-led assessments for optimal generation and transmission capacity planning.

Strengthening intra-state transmission and distribution system: This would be critical for RE integration and optimal transmission utilisation. He also shared about the upcoming National Electricity Plan for the distribution sector.

Ramping up pumped storage projects (PSPs) capacity: He noted how private sector participation has accelerated discovery and development of new PSP sites. In future, we should explore PSP potential in mining sites.

Deepening of Power Markets: At the Ministry of Power, the 2030 roadmap is being deliberated upon where we are looking at (i) introducing capacity markets, (ii) financial products, (iii) 5-minute accounting closer to gate closure, and (iv) exploring Contracts for Difference (CfD).

Shri Prasad also **cautioned against developing dedicated "green-only" transmission** infrastructure, which could result in costly parallel grids. He emphasised India's achievement in maintaining an integrated national grid, contrasting it positively against international examples like the fragmented grid operations in the US, where isolated systems have faced reliability challenges. India's integrated approach, he emphasised, must be preserved for continued grid stability and cost-efficiency.

Dr Arunabha Ghosh, CEO, CEEW

Dr Ghosh discussed the role of **three key drivers — decarbonisation, decentralisation, and digitalisation**— in shaping India's power sector transformation.

India's energy transition is not limited to traditional large power plants but includes a significant revolution in distributed renewable energy, such as urban rooftop solar through *PM Surya Ghar* and agricultural solar under *PM-KUSUM*.

Moreover, India's ongoing digital transformation, driven by the India Stack, will fundamentally alter how green electrons are generated, traded, and consumed, enabling India to meet growing electricity demand reliably and affordably.

Ms Disha Agarwal, Senior Programme Lead, CEEW

Ms Agarwal shared insights from the latest CEEW report on *"How can India Meet its Rising Power Demand? Pathways to 2030*." Below are the key insights.

Existing and planned capacities would be adequate to meet the EPS-projected power demand for 2030. However, if we fall short of the 500 GW target and reach only 400 GW, the nation will face shortages, and we will need 10 GW of new coal capacity and significant transmission enhancements.

India will face significant shortages if demand rises faster than anticipated, as current trends also suggest. To meet this swiftly rising demand, choosing **a pathway with 600 GW of non-fossil capacity, deployed across more states will be most cost-effective**.

A high-RE pathway will reduce generation costs by 6-18 paise per unit, eliminate the need for new coal plants, **save between INR 13,000 crore and INR 42,400 crore** in power procurement costs, and **create 53,000 to 1,00,000 additional jobs** between now and 2030—all while **cutting carbon emissions by 9-16 per cent**, compared to FY24.

Panel 1 | Renewable Leadership: How States can Drive India's Clean Energy Transition

Session moderator: ***Ms Shalu Agrawal****, Director -Programmes, CEEW*

Shri Jai Prakash Shivahare, MD, Gujarat Urja Vikas Nigam Limited (GUVNL)

Gujarat sees the clean energy transition as an opportunity to offer clean and affordable power in the state. GUVNL's resource adequacy assessment indicates that **RE will help the state reduce APPC by 20 per cent by 2030**.[2]

Gujarat's is **proactively addressing land acquisition and transmission challenges** to attract RE investments. The state's innovative "***No Denial Policy***", implemented via the *Akshay Urja Setu* portal, maintains a waiting list for connectivity requests instead of outright approvals or rejections.

He emphasised the **urgent need to rationalise electricity tariffs.** The current tariff structure disproportionately relies on energy charges rather than fully recovering fixed costs. This creates a scenario where open-access consumers selectively draw power from the grid, shifting the burden of unrecovered fixed charges onto other consumers and raising questions about equity in tariff design.

Mr Prashant Choubey, President – Business Development, Avaada Group

The **role of renewable energy implementing agencies (REIAs) is likely to evolve.** REIAs will remain essential for states needing risk management support, even as frontrunner states with robust operational and financial capacities may conduct tenders independently.

Rapid, consecutive REIA bids with continuously decreasing tariffs create expectations of lower future prices, discouraging states from

[2] APPC refers to average power procurement cost

signing PPAs. So, **REIAs must issue tenders based on firm state projections**, and once bids are awarded, PPAs must be signed promptly without delay.

Mr Vishal Sharma, Group Head – Corporate Affairs & Policy, Serentica Renewables

To **streamline transmission build-out**, India must consider creating a **platform similar to the telecom sector's *GatiShakti Sanchar* Portal**. Such a portal would consolidate right-of-way (RoW) applications, transparently display approval status, record minutes of meetings, enable fee payments, and facilitate deemed approvals.

He also emphasised that district authorities (DM/DC) must be empowered to accurately determine and authorise land acquisition costs at market rates to prevent inflated RoW expenses. He also recommended **extending the ISTS waiver by** two years, noting that the financial impact would be minimal.

Mr Subrahmanyam Pulipaka, CEO, National Solar Energy Federation of India

Mr Pulipaka highlighted that **state-level leadership** has driven India's RE growth. Early movers like Gujarat and Rajasthan have set the pace, and now more states like Odisha, are speeding up recognising RE's economic benefits. States are increasingly tailoring their RE based on local advantages to attract investments and boost job creation.

The MoP guidelines on **state-driven REIAs is going to be a game changer**. He expressed optimism that India can achieve its 500 GW non-fossil capacity target by 2030, driven by substantial solar pipelines, decentralised initiatives like *PM-KUSUM* and *PM Surya Ghar*, and the collective momentum generated through effective state-level coordination.

Mr Mohit Bhargava, Senior Advisor, India Energy & Climate Centre

Mr Bhargava highlighted **NTPC's critical role** in establishing pricing benchmarks in solar, wind, hybrid, and recent battery energy storage system (BESS) tenders.

Integrating BESS would be critical to address RE intermittency. With costs now becoming competitive, lender confidence is growing, which will accelerate financing and broader deployment of renewable energy projects paired with storage.

Going forward, **India should move away from the ISTS waiver for RE**. He argued against a graded withdrawal approach (e.g., 50%, then 25% year-on-year), advocating for a clear, hard cut-off.

Panel Discussion 2 | Redesigning Markets: Unlocking Investments in Clean Energy

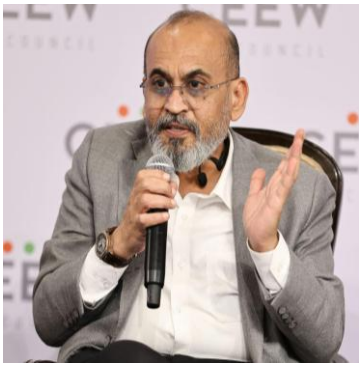
Session moderator: ***Mr Karthik Ganesan,*** *Fellow and Director – Strategic Partnerships, CEEW*

Mr Amit Kapur, Joint Managing Partner, JSA Advocates & Solicitors

As a critical market reform, India must first consider a **national model for pricing externality**. Secondly, India must focus on creating a **robust regulatory ecosystem**. Many regulatory decisions are in litigation before APTEL, which delays sectoral progress.

A **dedicated cadre of regulators** with a 10-15-year career trajectory should be established for consistency. We must pay attention in getting good quality regulators to be able to engage with modern problems.

He opined that **privatisation has been challenging and largely ineffective** in the power sector due to state resistance and financial complexities. The continued reliance on subsidies, delayed subsidy disbursals and political reluctance to increase tariffs have created financial challenges.



Mr Chintan Shah, Group President for Strategic Business Development & Policy, ReNew

The **mismatch between DISCOM preferences (10-year contracts) and lender/banker's requirements (25-year PPAs)** creates a financing gap. Regulatory mandates for 25-year contracts further limit flexibility.

He pointed out the **need for long-term market-based products**. Instead of relying solely on PPAs, India should develop 5-year and 10-year market-based supply contracts to enhance financing and investment confidence. Lastly, he stated that selling RE directly on **power exchanges** can allow **demand to follow supply**, while **storage integration** should be guided by **market price discovery** rather than regulatory mandates.

Shri Samir Chandra Saxena, Director, Market Operations, Grid Controller of India Ltd.

Flexibility is more critical than firmness – the focus should shift from **firm power to dispatchable power**. Power should be available when needed and curtailed when not.

Contracts must be designed for operational flexibility – as rigid contracts hinder dispatchability making system operations difficult. Fair compensation is required for thermal plants providing flexibility services, such as backing down and ramp-up rates.

Going forward, **financialisation of the power sector would be the key to market maturity.** India needs hedging instruments and financial products to enhance market efficiency, but their depth and impact need careful evaluation. Stronger oversight is needed; the interplay between physical and financial markets must be monitored to prevent gaming, requiring active regulatory involvement.

Ms Ann Josey, Fellow, Prayas Energy Group

Market liquidity must be improved by encouraging open access and captive power consumers. The C&I sector's subsidy burden is decreasing, and the solarisation of agricultural demand is also lowering the subsidy burden. Renewable technology is becoming more affordable, enabling quick consumer adoption. We must **consider deregulating high-tension (HT) consumers**, which would allow them to procure power independently.

Privatisation should be pursued only to enhance consumer services and price affordability. The focus should be on eliminating regulated monopolies in distribution (both government and private) and providing consumer choice.

Dr Shaurya Kaushal, Co-founder, Pranos Fusion

Nuclear fusion is expected to mature in 5-7 years, with 40+ organisations working on commercialisation globally.

India needs a dedicated policy on nuclear fusion, separate from fission, to ensure strategic alignment.

Panel Discussion 3 | Empowering Consumers: Innovations to Serve Green Electrons On-Demand

Session moderator:
Mr Dhruvak Aggarwal,
Programme Lead, CEEW

Ms. Rwitika Bhattacharya, CEO, Swaniti Initiative

State governments are leading the charge in implementing *the **PM Surya Ghar scheme**. District Collectors are showing initiative and taking ownership of implementing the schemes,* empowering consumers to use clean energy.

At the same time, several on-ground challenges exist, especially related to system maintenance. There is a need to focus on **localised operations and maintenance (O&M) and skilling models**, such as *Solar Sakhi*, wherein trained women can maintain solar systems. State-backed **digital fault tracking, long-term funding, and workforce training** must be integrated into policies like the *PM Surya Ghar Yojana*.

Mr Sujith Nair, CEO and Co-Founder, Foundation for an Interoperable Economy (FIDE)

Mr Nair highlighted the opportunity to leverage the **Unified Energy Interface (UEI)** for India's clean energy transition. UEI can enable an interoperability framework for energy transactions, similar to ONDC or UPI,[3] which could enable seamless peer-to-peer energy trading, electric vehicle charging, and energy warehousing. This would allow consumers to actively participate in the energy market and accelerate decentralised energy adoption. A **fundamental shift in mindset** is essential for scaling solarisation effectively. Instead of merely scaling what works, the focus must be on what inherently works at scale.

[3] ONDC and UPI refers to open network for digital commerce and unified payments interface, respectively.

Localised skilling is crucial to bridging information asymmetry, and the open network for skilling can help address this gap. Currently, even trained workers **lack visibility** on where solar panels need maintenance. A proposed solution is to **digitise O&M demand**, enabling consumers to report issues seamlessly while allowing skilled workers to track and respond to service needs more efficiently.

Dr Prabhjot Kaur, Co-Founder and CEO, Esmito Solutions

India must establish **national standards for two- and three-wheeler** EV charging and battery swapping to ensure interoperability across manufacturers and charging networks. Unlike four-wheelers, two- and three-wheelers lack global standardisation, leading to fragmentation in battery design, swapping protocols, and charging infrastructure.

If charging infrastructure is being set up, **the government should assure EV charging companies** that at certain levels of charging in a couple of years, Vehicle-to-Grid (V2G) or feeding back to the grid will be mandated, so that chargers don't become obsolete**.** This will ensure that EVs play a critical role in grid stabilisation in the future.

Mr. Akhil Agarwal, Director, ST Telemedia Global Data Centres

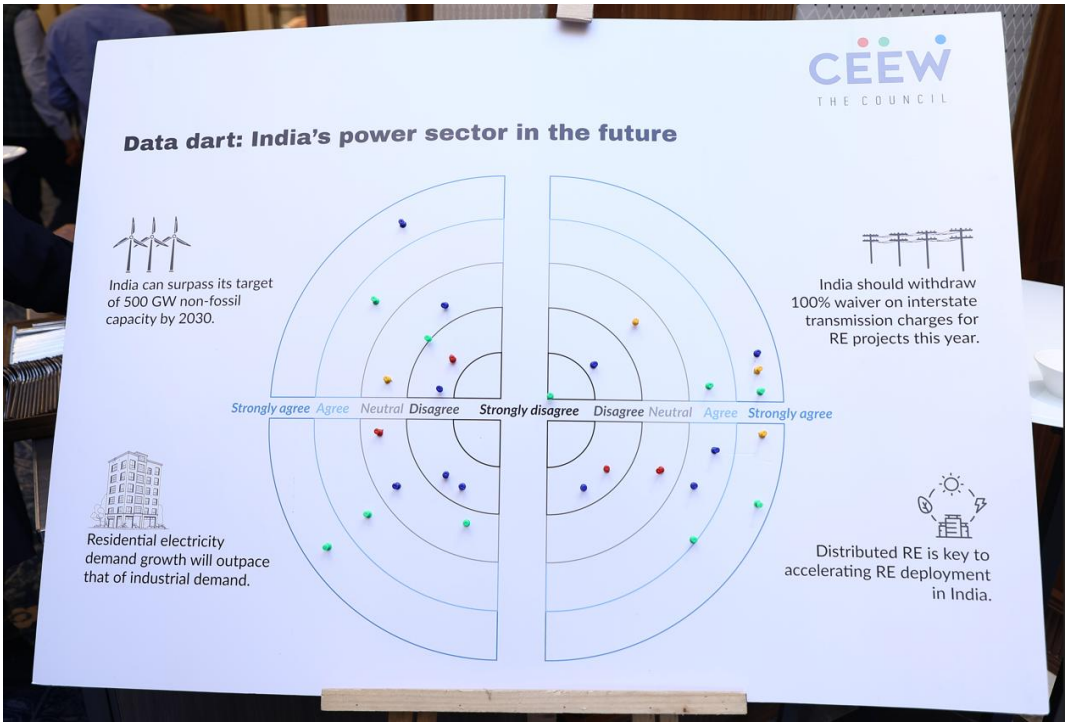
India's data centre power demand could rise from **800 MW to 14 GW by 2030.** Data centres should integrate round-the-clock (RTC) RE by expanding hybrid solar-wind PPAs and battery storage solutions. Regulatory frameworks must support **state-level clean energy procurement**, reducing dependence on fossil fuels while maintaining energy reliability.

Policies should incentivise low-carbon cooling technologies, grid-supporting battery storage, and **transparent energy procurement strategies** to align the sector with India's net-zero targets.

Mr Shailesh Telang, Head of APAC, EnergyTag

India must consider upgrading the renewable energy certificate (REC) system to incorporate **granular time-stamped tracking**, ensuring hourly or sub-hourly verification of renewable energy usage.

This would be essential for compliance with **global green hydrogen** standards and **EU's Carbon Border Adjustment Mechanism (CBAM).**



Audience pinning their views on the future of India's power sector

Audience participating in the Mentimeter Q&A session