



# WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

**TOWARDS A RESILIENT PLANET:  
ENSURING A SUSTAINABLE AND EQUITABLE FUTURE**



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## Virtual Stakeholder Roundtable on ‘Energy’ for COP26 Charter of Actions:

### *Concept Note*

#### **1. Background on COP26 Charter of Actions and World Sustainable Development Summit**

Under the presidency of the UK in partnership with Italy, the 26th UN Climate Change Conference of the Parties (COP26), to be held from 1–12 November 2021 in Glasgow will aim to mobilize the action on mitigation, adaptation, and resilience, and strengthen the narrative for better alignment with sustainable development goals. COP26 is to deliberate on four key goals: (i) Secure global net zero by mid-century and keep 1.5 degrees within reach; (ii) Adapt to protect communities and natural habitats; (iii) Mobilise finance; and (iv) Work together to deliver. COP26 will bring together countries, companies, civil society, and citizens on a common platform to work towards to a more sustainable future through adaptation, mitigation, finance, and collaboration.

There is a need to address the developmental deficit in emerging economies such as India while simultaneously taking measures to limit global warming as agreed in the Paris Climate Change Agreement. TERI is preparing a COP26 Charter of Actions which will assimilate questions and challenges posed by key sectors in India. The Charter will also propose probable and sector specific options which can advance climate action and ambition in the country. The Charter will propose a normative framework for a global agenda on climate ambition and action. The Charter is expected to be released at the COP26 in Glasgow. The discussions from COP26 would culminate in a review at a plenary session at the World Sustainable Development Summit 2022, which would assess the efforts of international climate negotiations in securing a sustainable future, and deliberate on future actions.

Five themes have been identified as key areas for raising ambition. These include energy, clean transport, nature based solutions, adaptation & resilience, and green finance. The research team would like to seek feedback from stakeholders on thematic issues so that the document can be informed and strengthened further.

#### **2. Objectives of the Stakeholder Roundtable**

The objectives of the stakeholder roundtable include the following:

- (1) Engage with stakeholders and experts on themes/ sectors to solicit feedback to strengthen the sectoral/ thematic charter

(2) Solicit inputs for the chapter from stakeholders and experts on aspects related to implications for the international community, equity, actions by 2030, and actions by 2050.

### **3. India's Renewable Energy Vision of 450GW by 2030: A Long Road to Cross**

The electricity sector in India is undergoing transition due to consistent efforts towards achieving country's Nationally Determined Contribution (NDC) targets, increasing consumer expectation coupled with changing consumer behaviour, various supply-side technology innovations and price discoveries. The decline in the cost of Renewable Energy (RE) technologies and that of energy storage holds promise for the transition to be sustainable or it could even witness acceleration depending on the trajectory of cost decline. India has consistently stepped up its RE capacity targets to 175 GW by the year 2022, and 450 GW by 2030. The high RE capacity targets and lower RE tariffs discoveries - solar tariff of Rs 1.99/kWh in December, 2020 - are facilitating much needed transition to a greener power system.

At present, RE capacity (~97 GW) in India is 25% of the total installed capacity of 387 GW, contributing ~10% in the total electricity generation mix. To achieve the 450 GW RE capacity target, India is faced with a challenging annual capacity addition target of the order of 40 GW; our best annual performance so far has been ~11.8 GW. Government of India is promoting domestic manufacturing of RE equipment and is also facilitating investment in renewable energy by allowing Foreign Direct Investment (FDI) of up to 100% through the automatic route. Enhancing domestic production capabilities matching with the requirement for meeting the target of 450 GW RE by 2030 assumes critical importance. Achieving cost effectiveness and quality of domestically produced equipment matching with that of imported equipment would be a challenge. Specifying Renewable Purchase Obligation and waiver of Inter State Transmission System (ISTS) charges in respect of solar and wind power projects constitute demand side/supply side facilitative measures.

Integrated Demand-Supply Studies carried out by TERI<sup>1</sup> for 2030 inform that the share of non-fossil power generation capacity under different scenarios is likely to reach 60%–65%, which is 1.5 times the target of 40% forming a part of INDCs. This will correspond to 42%–48% share of electricity generation. Other studies<sup>2</sup> also show that India is on course to achieve its 40% non-fossil generation capacity commitment by 2030. Studies<sup>3,4</sup> have shown that 30%–40% of RE generation contribution by 2030 (from current level of 10%) does not entail any extra system cost. The variability introduced by such a high level of variable renewables is substantial - varying typically from less than 10% on a summer night to more than 50% during peak solar generation<sup>5</sup>. Accommodating this degree of variability is feasible but challenging as it would call for a step-change in the flexibility of the power system.

Demand-side measures for load shifting and peak shaving are considered to be among the most cost-effective measures, but scaling up them has been a challenge. Supply-side flexibility comes from the dispatchable hydro fleet - plants with reservoir, pondage, or pumped storage plants. India has a substantial coal fleet, which can provide good amount of flexibility during the course of the day. The entire coal fleet including the state-owned coal plants but for the small, old and inefficient units, could very well provide flexibility. There is a necessity to examine possibility of assigning certain categories of plants to meet more stringent flexibility requirements, for example achieving technical minimum of 40% or even 30%, or two-shifting operation. In Germany, Heyden power plant (875 MW) has demonstrated stable operation at 10% minimum load operation<sup>6</sup>. Examining feasibility and cost effectiveness of such an option in Indian conditions assumes importance for providing higher flexibility support.

The draft National Electricity Policy 2021 proposes measures such as encouraging hybrid RE generation, providing two-part tariff as an option, providing long-term trajectory for RPOs, exploring market based

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<sup>1</sup><https://www.teriin.org/sites/default/files/2020-07/Renewable-Power-Pathways-Report.pdf>

<sup>2</sup>[https://cea.nic.in/old/reports/others/planning/irp/Optimal\\_mix\\_report\\_2029-30\\_FINAL.pdf](https://cea.nic.in/old/reports/others/planning/irp/Optimal_mix_report_2029-30_FINAL.pdf)

<sup>3</sup>[https://www.teriin.org/sites/default/files/2021-02/A\\_Modul-Based\\_Assessment\\_Report\\_1.pdf](https://www.teriin.org/sites/default/files/2021-02/A_Modul-Based_Assessment_Report_1.pdf)

<sup>4</sup>[GridPath-Overview-2020\\_11\\_23.pdf](https://www.teriin.org/sites/default/files/2020-11/23.pdf) (prayaspune.org)

<sup>5</sup><https://www.teriin.org/sites/default/files/2020-07/Renewable-Power-Pathways-Report.pdf>

<sup>6</sup>[https://cea.nic.in/old/reports/others/thermal/trm/flexible\\_operation.pdf](https://cea.nic.in/old/reports/others/thermal/trm/flexible_operation.pdf)

options to strike a balance between capping investor's price risk and basic market risks of forecasting, scheduling and balancing, devising a mechanism for sharing of cost incident on the RE rich states due to variability of RE generation, promotion of solar roof top systems, etc.

The chapter on energy in the COP26 Charter of Actions will trace India's journey so far and future outlook. The chapter will seek to discuss the following issues and concerns:

- Addressing challenges and meeting ambitions.
- Policy driven governance for achieving the target.
- Policy and Regulatory imperatives for meeting the challenge of daily and seasonal balancing as well as storagetechnologies.
- Measures for scaling up domestic manufacturing of RE equipment matching the requirement.
- Financing; climate justice/just transition
- Importance of carrying out power system stability studies/reserve requirements for high RE integration.

#### **4. Format of the Event**

- Briefing the audience of the expectations from the discussions.
- Context setting presentation by TERI study team.
- Roundtable discussion comprising experts and stakeholders seeking insights/ inputs/suggestions on specific questions.
- Summary and next steps
- Circulation of a post-event questionnaire for any further inputs.

(The experts who provide inputs will be acknowledged in the COP26 Charter of Actions).

#### **5. Questions for discussions**

The following questions will guide the roundtable discussions:

- i. What gaps need to be filled for realizing the ambition? What actions are needed for the same?
- ii. Where is the scope for enhancing capabilities to match the policy targetsrequiring substantially higher RE integration including through strengthened governance?
- iii. What measures are needed until 2030 and 2050 to address the climate change concerns?
- iv. How can the international community play a role? What are the 'asks' from the international community?
- v. What are implications for equity in terms of gender aspects and socio-economic considerations?
- vi. Based on sectoral/ thematic learnings, what are the normative implications for the global framework on climate ambition and action?