bharat CLIMATE FORUM

Council for International Economic Understanding

Dalberg

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# Bharat Climate Forum 2026

## From India to the World Climate Solutions that work

9 January 2026

ITC Maurya, New Delhi

# Contents

# Foreword

**N.K. Singh**
Chairperson, Bharat Climate Forum
Former Member, Rajya Sabha;
Chairman, 15th Finance Commission

It is a privilege to reflect on the proceedings of **Bharat Climate Forum 2026**, which marks an important inflection point in India's climate and development journey. As a nation, India stands at a moment where climate action is no longer a standalone environmental objective, but a central pillar of economic strategy, industrial competitiveness, and long-term resilience. The Forum has been conceived precisely to respond to this moment—by aligning ambition with implementation, and vision with delivery.

Since its inception in 2025, the Bharat Climate Forum has sought to bring coherence to a complex landscape—one marked by ambitious targets, fragmented institutions, and growing global uncertainty. BCF 2025 laid the foundation by anchoring climate ambition firmly within the framework of **Atmanirbhar Bharat**, culminating in the launch of the Bharat Cleantech Manufacturing Platform. BCF 2026 has built decisively on this foundation, shifting the focus from agenda-setting to execution, and from dialogue to structured pathways for implementation.

The discussions at BCF 2026 underscored the urgency of institutional coordination, policy coherence, and financial innovation. Achieving India's climate goals—whether it is scaling non-fossil energy, building resilient infrastructure, or decarbonizing industry—will require a whole-of-economy approach, supported by credible analytics, predictable policy frameworks, and significant capital mobilization. Equally important is India's role in shaping a more equitable global climate order, particularly through partnerships with the Global South.

I am confident that the outcomes of BCF 2026, including the launch of the Bharat Cleantech Manufacturing Blueprint, will serve as a practical guide for policymakers, industry leaders, and financiers alike. As we look ahead to BCF 2027, the Forum's role as a trusted platform for consensus-building and action will be critical in ensuring that India's climate transition is both economically sound and socially inclusive.

# Foreword

**Sumant Sinha**
Co-Chairperson,
Bharat Climate Forum
Founder, Chairman and
CEO of ReNew

The Bharat Climate Forum was created with a clear conviction: that India's climate transition represents not just a responsibility, but a historic economic opportunity. **BCF 2026** reinforces this conviction by demonstrating how climate ambition, when aligned with industrial strategy and capital deployment, can drive growth, jobs, and global competitiveness.

BCF 2025 established the importance of domestic manufacturing as the backbone of India's clean energy transition, leading to the launch of the Bharat Cleantech Manufacturing Platform. In 2026, the conversation matured. The Forum moved beyond why cleantech manufacturing matters to how it can be scaled—through targeted policy reform, investment-ready project pipelines, technology partnerships, and engagement with states and global partners.

A recurring theme across the Forum was the need to unlock capital at scale. While India has made remarkable progress in deploying renewable energy, the next phase will depend on our ability to mobilize long-term finance, de-risk investments, and crowd in private capital across manufacturing and infrastructure. The Cleantech Manufacturing Technology and Investment Accelerator launched at BCF 2026 is a critical step in this direction, helping convert policy intent into bankable outcomes.

Equally important is India's growing role as a provider of solutions—not only for itself, but for other emerging economies navigating similar transitions. The "India Plus Many" approach discussed at BCF 2026 reflects this shift, positioning India as a partner of choice in building resilient, diversified clean technology supply chains.

As we move toward BCF 2027, the Forum's focus on execution, partnerships, and measurable impact will be essential. I am confident that the momentum generated at BCF 2026 will translate into tangible progress on the ground, reinforcing India's leadership in the global energy transition.

# Foreword

**Ashwani Mahajan**
President,
Bharat Climate Forum
National Co-Convener,
Swadeshi Jagran Manch

The climate challenge before India must be addressed through solutions that are **Swadeshi in spirit, global in outlook, and inclusive in impact.** The Bharat Climate Forum was conceived to uphold this principle ensuring that India's response to climate change strengthens domestic capabilities, safeguards livelihoods, and supports long-term national self-reliance.

BCF 2025 established a clear narrative: that climate action and Atmanirbharta are not competing objectives, but deeply complementary. The launch of the Bharat Cleantech Manufacturing Platform reflected this thinking, emphasizing the need to indigenize critical value chains and reduce dependence on imports. BCF 2026 has taken this vision further by focusing on implementation—how policies, institutions, and markets must work together to enable domestic manufacturing and innovation at scale.

Discussions at the Forum highlighted the importance of building robust domestic ecosystems—spanning manufacturing, finance, skills, and technology while also engaging constructively with the global economy. India's strength lies in its ability to combine local innovation with global collaboration, ensuring that growth is resilient, equitable, and aligned with national priorities.

The emphasis on air pollution, climate resilience, and rural innovation at BCF 2026 is particularly significant. These issues directly affect the lives and livelihoods of millions of Indians and must remain central to our climate discourse. By framing these challenges as opportunities for enterprise, investment, and innovation, the Forum has helped broaden the scope of climate action in India.

As we look ahead to BCF 2027, the Bharat Climate Forum will continue to serve as a platform that champions Swadeshi solutions while engaging confidently with the world, ensuring that India's climate transition is rooted in national strength and collective progress.

# Foreword

**Meenakshi Lekhi**
*Convener,*
*Bharat Climate Forum*
*Former Minister of State,*
*Foreign Affairs*

India's climate journey is increasingly intertwined with its global engagement. As the world looks for credible, scalable solutions to climate change, India stands uniquely positioned—as a large developing economy that has demonstrated both ambition and pragmatism. **Bharat Climate Forum 2026** reflects this reality, bringing together domestic priorities and global partnerships in a manner that is both strategic and forward-looking.

Since its launch in 2025, the Bharat Climate Forum has evolved into a platform that not only convenes stakeholders within India, but also engages meaningfully with international partners. BCF 2026 saw strong participation from multilateral institutions, global leaders, and representatives from across regions, reinforcing India's role as a bridge between the Global North and the Global South.

A key theme emerging from the Forum was the importance of partnership—whether in mobilizing finance, enabling technology transfer, or addressing shared challenges such as climate resilience and air pollution. India's approach, anchored in the "India Plus Many" framework, emphasizes collaboration over dependency and shared progress over unilateral solutions.

The launches at BCF 2026—from the Cleantech Manufacturing Blueprint to initiatives on resilience and air quality—demonstrate India's readiness to lead not just through commitments, but through concrete action. These initiatives also provide a basis for deeper international cooperation, particularly with countries seeking affordable and adaptable climate solutions.

As we move toward BCF 2027, the Forum's role in strengthening global partnerships will only grow in importance. By aligning India's domestic priorities with international climate objectives, the Bharat Climate Forum contributes to a more inclusive, cooperative, and effective global response to climate change.

# Executive Summary

## Bharat Climate Forum

The **Bharat Climate Forum (BCF)** was established in 2025 as India's national platform to align climate ambition with economic priorities and accelerate the transition from vision to implementation. Hosted by the **Council for International Economic Understanding (CIEU)** in collaboration with **Dalberg Advisors**, BCF convenes government leaders, industry, financiers, multilateral institutions, and technical experts to advance **Swadeshi climate solutions** rooted in domestic innovation, industrialization, and strategic global engagement.

The inaugural **BCF 2025**, held in January 2025, marked a decisive starting point for the Forum. It brought together over 300 participants across government, industry, finance, and global institutions to focus on scaling cleantech manufacturing as a pillar of India's net-zero and Viksit Bharat ambitions.

*<<Details of the inaugural Bharat Climate Forum 2025 are set out in* ***Annexure I****.>>*


## BCF 2026

Building on this foundation, **BCF 2026** represented a clear shift from agenda-setting to execution. The Forum convened **over 500 participants**, supported by **40+ knowledge partners**, bringing together senior leadership from the Government of India, state governments, industry, financial institutions, multilateral development banks, academia, and international organizations. This scale of participation reflected BCF's growing stature as India's flagship platform for climate–industrial strategy.

BCF 2026 was inaugurated by the **Honourable Vice President of India**, underscoring the Forum's national significance. Senior government participation included **Shri Manohar Lal Khattar, Union Minister of Power**, alongside leadership from key ministries and states. The Forum also saw strong engagement from the international and multilateral community, including **Johannes Jütting**, **UN Assistant Secretary-General Selwin Hart**, **UN ASG Damilola Ogunbiyi**, and **former President of the Maldives, Mohamed Nasheed**, highlighting BCF's role as a platform for global climate collaboration and South–South engagement.

Discussions at BCF 2026 emphasized **implementation readiness**, focusing on cross-cutting challenges such as policy coherence, investment mobilization, technology transfer, and integration into global supply chains. The Forum reinforced the need for evidence-based reforms, blended finance and de-risking mechanisms, deeper engagement with states, and a more coordinated global approach under an **"India Plus Many"** framework. Collectively, BCF 2026 underscored India's opportunity to emerge not only as a manufacturing hub, but also as a provider of affordable, scalable climate, resilience, and air quality solutions to the Global South.

## Key Launches @ BCF 2026

BCF 2026 was marked by a set of flagship launches that advanced the Forum's focus on implementation, innovation, and impact. Central among these was the launch of the **Bharat Cleantech Manufacturing Blueprint**, unveiled by the **Honourable Vice President of India**. The Blueprint provides a structured, actionable roadmap to scale domestic cleantech manufacturing, identifying priority policy, financial, and institutional interventions across key value chains and bridging the gap between ambition and execution.

*<<Further details on the key launches and plan ahead are outlined in the **Launches** & Plan Ahead section of this report.>>*

# Forum Agenda

## Agenda for Plenary Sessions

| TIMINGS | THEME | DESCRIPTION |
|---|---|---|
| 08:00-09:30 | Registration | Delegate registration and networking tea |
| 09:30-09:45 | Guests to be Seated | All participants are to be seated in the Kamal Mahal Plenary Hall, as the VVIP security will lock the perimeter of the plenary. |
| 10:00-10:30 | Receiving the Chief Guest, Inauguration & Welcome Address | Welcome by the President, Convener, Chair and Co-Chair of the BCF Governing Committee, setting the tone for the Forum and its national and global ambitions |
| 10:30-10:55 | *CHIEF GUEST*<br>High-level Inaugural Address | **Inaugural address by the Hon'ble Vice-President of India,** highlighting Bharat's commitment to sustainable and inclusive development with an emphasis on balancing economic progress with ecological responsibility. Hon'ble Vice-President will launch the Blueprint of the national Cleantech Manufacturing Plan. |
| 10:55- 11:00 | Vote of thanks to the Chief Guest | |
| 11:00- 11:15 | *KEYNOTE*<br>High-Level Address | Address from the **UN Secretary-General's Climate Envoy,** reinforcing India's climate ambition and positioning India as a critical partner in mobilizing global finance and resilience efforts |
| 11:15-12:00 | *IMMERSIVE DISCUSSION*<br>Blueprint 2035: Greening India's Growth Engine | Context-setting session highlighting India's achievements and ambition for a clean, resilient, and green growth trajectory despite global geo-political uncertainties. This session will feature a moderated conversation with senior policymakers and financiers from India and around the world. |
| 12:00- 12:30 | Keynote Ministerial Address | Hon'ble Shri Manohar Lal Khattar, Minister of Power, Housing & Urban Affairs, Government of India (GoI) |
| 12:30-13:00 | *CATALYTIC DIALOGUE*<br>Global High-level Policy Dialogue | A high-level fireside chat on the intersection of global and national agendas of energy, climate and economic growth. |
| 13:00-14:00 | Networking Lunch | |
| 14:00-14:45 | *FEATURED SPEECH & FIRESTARTER*<br>Riding the Storm: Resilience as the New Economic Strategy | This session will explore how climate adaptation and resilience are central to sustaining India's long-term economic growth and development priorities. |

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| **14:45-15:20** | *FEATURED SPEECH & IMMERSIVE DISCUSSION*<br>**From Mines to Gigawatts: India's Cleantech Manufacturing Story** | A high-level panel discussion on India's National Cleantech Manufacturing Implementation Plan and its core pillars: R&D, Skilling, Raw materials, Demand, Capital Infrastructure and Machinery, and Financing. |
| **15:20-16:00** | *IMMERSIVE DISCUSSION*<br>**Bharat Bankable: Investing for the Green Century** | Financing deep dive on mobilizing long-term climate capital, including green bonds, blended finance, sovereign guarantees and new financing institutions to make cleantech manufacturing and green industrialization bankable. |
| **16:00-16:40** | *IMMERSIVE DISCUSSION*<br>**The Cost of Survival: Funding India's Resilience** | A high-level dialogue on how climate impacts and hazards affect all parts of the Indian economy, from agriculture and industry to cities and infrastructure. The session will focus on the solutions and financing needed to climate-proof India's growth. |
| **16:40-17:15** | *IMMERSIVE DISCUSSION*<br>**Inventing for Tomorrow: Rethinking Innovations for an Uncertain World** | This panel will examine how India can enhance research, innovation, and early-stage development of cleantech and adaptation solutions across key sectors, including agriculture, public health, and water security. It will discuss how to fund, regulate, and scale science-led solutions from the lab to the field, addressing issues such as coordination between research and implementation agencies, and financing models that help translate innovation into real-world impact. |
| **17:15-18:00** | *IMMERSIVE DISCUSSION*<br>**From Mandate to Impact: Governing for a Green, Resilient and Viksit Bharat** | A systems-focused panel that will unpack India's evolving green manufacturing, mitigation, adaptation-development priorities and the policy and governance reforms needed to deliver them. It will link these national priorities to state-level governance models for implementation, such as defining clear roles and coordinating across Union, State, and local bodies, along with practical solutions and financing models that drive the last-mile delivery of benefits. |
| **18:20-19:00** | *IMMERSIVE DISCUSSION*<br>**Powering the Economic Growth: The Union of Digital and Green** | An engaging conversation on how India's digital infrastructure can strengthen climate adaptation and resilience for sectors like agriculture and others. The session will explore how solutions, ranging from AI and ML to GIS, IoT, Drones, and DPI-backed platforms, can amplify mitigation, energy transition, and green industrialization, adaptation, and resilience solutions across agriculture, cities, and vulnerable communities. This session will also feature the launch of Climate Resilient Agriculture Innovation Grant Challenge. |
| **19:00-19:20** | **Keynote Address** | Hon'ble Shri Santosh Sarangi, Secretary, Ministry of New and Renewable Energy, GoI |

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| **19:20-19:35** | **Presentation on Cleantech Manufacturing Tech and Investment Accelerator** | |
| **19:35-20:15** | *FEATURED SPEECH & IMMERSIVE DISCUSSION*<br>**Commitments to Collaboration: Aligning Global Partnerships for Climate Action** | This panel will examine how India can translate national climate ambition into global leadership through deepened international collaboration. It will explore how India can align and strengthen global partnerships across governments, multilateral institutions, finance, and the private sector to accelerate climate action at scale. The discussion will highlight the technological innovations, institutional models, and implementation approaches India can share with the Global South, and the partnerships, financing pathways, and domestic readiness required to support shared transitions. |
| **20:15-20:30** | **Valedictory Ministerial Address** | Address from Hon'ble Shri Pralhad Joshi, Union Minister for New and Renewable Energy, and Minister of Consumer Affairs, Food and Public Distribution |
| **20:30-20:40** | **Vote of Thanks** | Closing acknowledgements to Hon'ble Minister, participants, partners, and supporters |

# Agenda for Roundtables

| TIMINGS | VENUE | SESSION | DESCRIPTION |
|---|---|---|---|
| 11:30-12:30 | SAKYA | High level discussion Curtailment Crisis in High Renewable Energy States: Insights from Rajasthan | This roundtable will examine the growing curtailment crisis in high renewable-energy states, using Rajasthan as a case study to highlight gaps between generation build-out and transmission readiness. |
| 14:00-15:00 | BOARD ROOM (KALINGA) | Decongesting the Grid: Managing Concentration and Import Risk in India's Transmission Sector | The roundtable will focus on decongesting India's power grid by reforming ISTS market structures, managing concentration risk, and indigenizing critical HVDC components to reduce import-led vulnerabilities as renewable capacity scales. |
| 14:00-15:00 | SAKYA | High level discussion on SIDS – India partnership | This closed-door roundtable will focus on high level South-South collaboration including Small Island Developing States (SIDS) -India partnership. It will serve as an important anchor in strengthening the discussions and actions around South-South partnerships and advancing climate action in the Global South.<br><br>**Knowledge Partner(s): Dialogues of East and West (DEW)** |
| 14:00-15:00 | CHAITYA | Enabling the Next Wave of Nuclear Energy: Policy Pathways for India's SMR Revolution | India's ambition as part of the Nuclear Energy Mission to develop and deploy Small Modular Reactors (SMRs) requires a bold nuclear governance framework. This closed-door roundtable will explore the legal and policy foundations necessary to enable private sector participation in SMRs while maintaining the highest standards of safety and sovereignty.<br>**Knowledge Partner(s): Knowledge Partner(s): Invest India, Indian Youth Nuclear Society (IYNS)** |
| 15:00-16:00 | SAKYA | Early Action Economics: Insurance as a Catalyst for Climate Resilience | Explore how parametric insurance can be designed and scaled to help MSMEs withstand climate shocks and avoid prolonged business disruption. The session will examine how India can build a viable market for MSME-focused parametric insurance—addressing supply–demand gaps<br><br>**Knowledge Partner(s): Climake & CKinetics** |

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| **15:00-16:30** | **CHAITYA** | **Lab to Market/ India's clean-tech leap: Brasstacks of making India a cleantech R&D hub** | This roundtable will focus on the practical building blocks required to make India a global hub for cleantech R&D and innovation, with particular emphasis on financing, shared infrastructure, and talent. The discussion will examine how India can mobilise sustained R&D finance to bridge the gap from lab to market, build and open-access pilot lines and testing facilities within industrial clusters, and develop a job-ready talent pipeline aligned with mission labs and first-of-a-kind deployments.<br><br>**Knowledge Partner(s): CTIER, Spectrum Impact** |
| **16:00-1700** | **SAKYA** | **India–Africa Partnership: Building a Shared Clean Energy Future** | This roundtable will explore how India and Africa can strengthen collaboration to accelerate renewable deployment while building resilient clean energy supply chains. Drawing on India's experience in solar scale-up, policy design, and manufacturing, the discussion will focus on practical pathways for joint deployment, financing, and co-development of solar value chains<br><br>**Knowledge Partner(s): SEforAll, World Bank, International Solar Alliance (ISA)** |
| **16:30-17:30** | **CHAITYA** | **Hot Future, Cool Tech: Engineering Resilience through Domestic Innovation** | A discussion on indigenization of domestic cooling manufacturing (with a focus on propane-based compressors), especially RACs. The round table will focus on identifying practical pathways to scale up domestic solutions, reduce import dependence and build manufacturing and workforce capabilities for domestic production and positioning India as an export hub for new-age cooling technologies manufacturing.<br><br>**Knowledge Partner(s): National Resources Defense Council (NRDC), IORA Ecological Solutions** |
| **17:30-18:30** | **SAKYA** | **High-level discussion on Cleantech Manufacturing Tech and Investment Accelerator** | This closed-door roundtable will be an interaction with key knowledge partners on the cleantech accelerator led by Invest India and BCF |

# Governing cum Organising Team

**Chairperson Shri NK Singh**
Former Member, Rajya Sabha
Chairman, 15th Finance Commission

**Sumant Sinha**
Founder
Chairman and CEO ReNew

**Dr. Ashwani Mahajan**
Member, Board of Governors CIEU
& National Co-Convenor, SJM

**Meenakshi Lekhi**
Former Minister of State,
External Affairs, Government of India

**Jageet Sareen**
Partner
Global Climate Change

**Bhupinder Singh Bhalla**
Former Secretary,
MNRE

**Hemang Jani**
Senior Advisor to the Indian Executive
Director at the World Bank

**NS Vishwanathan**
Non-Executive Chairman
Axis Bank

**Rajnish kumar**
Former Chairman
State Bank of India

**Shri Anand Shah**
Partner
The Asia Group

# Inauguration & Welcome Address


**The Bharat Climate Forum 2026 commenced with the ceremonial lighting of the lamp, marking the formal inauguration of the convening.** The occasion was graced by the presence of the Hon'ble Vice President of India, Shri C. P. Radhakrishnan, alongside members of the Governing Board of the Bharat Climate Forum, Smt. Meenakshi Lekhi, Shri N. K. Singh, Dr. Ashwani Mahajan, and Shri Sumant Sinha. This opening moment underscored the Forum's national significance and its anchoring in high-level leadership and institutional stewardship.


**The conference then opened with inaugural addresses by the Governing Committee Members of the Bharat Climate Forum.** Their remarks offered a compelling vision for the Forum, setting the tone for a day of dialogue focused on translating climate ambition into action, advancing sustainable solutions, and reinforcing India's emerging leadership in the global cleantech and climate agenda.

# Address from Mrs. Meenakshi Lekhi ji


**Mrs. Meenakshi Lekhi is the Convenor for the Bharat Climate Forum Governing cum organizing team. An accomplished politician and lawyer, she served as Minister of State for External Affairs and Culture (2021–2024) and has been a Member of Parliament from New Delhi since 2014** . She has focused on urban development, cultural diplomacy, and renewable energy, championing initiatives like the International Solar Alliance and the 'Green Highways Policy,' while strengthening India's global partnerships in clean energy and cultural exchange.

Mrs. Meenakshi Lekhi is the Convenor for the Bharat Climate Forum Governing cum organizing team. An accomplished politician and lawyer, she served as Minister of State for External Affairs and Culture (2021–2024) and has been a Member of Parliament from New Delhi since 2014.

**She set the tone for the Forum by positioning climate action as a unifying imperative in an increasingly fragmented world.** Welcoming the Hon'ble Vice-President of India and distinguished participants, she underscored the significance of convening diverse stakeholders at a moment when global divisions risk slowing collective progress on climate change. She emphasized that platforms such as the Bharat Climate Forum are essential precisely because they create cohesion, sensibility, and shared purpose around one of the most pressing challenges facing humanity.

**Mrs. Lekhi stressed that the Forum's core value lies in translating policy ambition into execution through bridge-building and partnership-driven governance.** She highlighted that meaningful systemic change depends on collaborative engagement among like-minded actors working together across institutions and sectors. The presence of senior national leadership, she noted, reflected the Government of India's deep and sustained commitment to climate policy.

**She emphasized that climate change represents the most profound shared risk facing societies worldwide, particularly the most vulnerable.** India is uniquely positioned to advance global climate leadership by combining vast and diverse perspectives, democratic institutions, and delivery capacity. The Bharat Climate Forum, she said, is part of a growing movement to alleviate the long-term damage inflicted on the planet and to respond with urgency, empathy, and coordinated action.

**She framed the Bharat Climate Forum as a bridge-building platform designed to create the systemic change needed to advance climate action.** Since its launch in 2025, the Bharat Climate Forum has grown into India's premier national platform for climate action, bringing together government leaders, industry CEOs, financiers, and knowledge partners to align bold action towards India's net-zero ambitions and domestic clean technology manufacturing priorities.

**Reflecting on the Forum's evolution, she highlighted the shift from idea generation to implementation within just its second year.** At its inaugural convening in January 2025, the Bharat Climate Forum launched the Bharat Cleantech Manufacturing Platform to advance conversations around domestic cleantech manufacturing, while the BCF 2026 marks a decisive next step with the launch of the National Cleantech Manufacturing Implementation Plan.

**Mrs. Lekhi concluded by aligning the Forum's mission with the dual responsibility of global stewardship and national development.** Mrs. Lekhi emphasized the importance of policies that simultaneously address environmental repair and inclusive growth for communities that remain vulnerable. Reiterating her welcome, she expressed confidence that the Forum would deepen collaboration, sharpen collective priorities, and catalyse practical action over the course of the day.

# Address from Shri NK Singh ji


Over the course of his career, Shri Singh has held several key national roles, including as a Member of the Planning Commission and as Chairperson of the Fifteenth Finance Commission of India. He currently serves as a Distinguished Fellow at the Centre for Social and Economic Progress and is associated with several academic and research institutions in advisory and governance capacities.

Shri N.K. Singh is the Chairperson of the Governing Board and Organising Team of the Bharat Climate Forum 2026. A senior bureaucrat and former Indian Administrative Service officer, he served as a Member of Parliament in the Rajya Sabha from 2008 to 2014.

**In his address, Shri Singh, Chair of the Bharat Climate Forum, framed climate action as a challenge defined by practical analysis and execution.** Speaking shortly after the conclusion of COP30 in Belém, he noted that the moment called for a clear-eyed assessment of what has been achieved, what remains unresolved, and what countries like India must prioritise as they balance development with climate responsibility.

**He observed that the issue of climate finance remains the most consequential unresolved challenge in the global climate agenda.** Global estimates, he highlighted, place annual climate finance requirements at over USD 1.3 trillion. Despite

successive commitments by developed countries, reaffirmations of the centrality of the Paris Agreement, and the evolution of quantified finance targets, he noted that delivery continues to fall well short of assessed needs, while key mechanisms such as the Loss and Damage Fund have yet to scale meaningfully.

**Shri NK Singh highlighted India's acute vulnerability to climate shocks and the resulting need for targeted investment.** A large share of the population continues to be dependent on climate-sensitive livelihoods and extensive coastlines exposed to extreme weather events, underscoring the significant economic risks posed by inaction. Effective mitigation and adaptation, he noted, are therefore essential not only for environmental protection but for safeguarding long-term growth and productivity.

**He stated clearly that India's commitment to net zero by 2070 is a strategic act of foresight to secure continued growth and development.** While India's per capita emissions remain a fraction of those in advanced economies, absolute energy demand will continue to rise as incomes grow, urbanisation accelerates, and electricity demand expands. Navigating this pathway, he argued, requires managing development and decarbonisation together through disciplined policy choices and long-term planning.

**He highlighted that delivering on this transition requires coordinated action across capacity-building, financing, and governance.** India's climate transition is fundamentally a systems challenge, one that extends beyond expanding renewable capacity to include energy infrastructure, institutional readiness, and financing mechanisms. He underscored that climate action in India is inherently federal in nature, with states differing widely in fiscal capacity, institutional preparedness, and exposure to climate risks. Translating national ambition into on-the-ground outcomes will require greater alignment across levels of government, clearer institutional frameworks, and sustained mobilisation of finance, including private, philanthropic, and blended capital.

**In conclusion, Shri NK Singh called for a constructive and balanced approach that combines domestic capacity-building with active engagement in global climate processes.** He emphasised that India's pathway forward lies in strengthening institutions at home while continuing to contribute meaningfully to international cooperation. Guided by the ethos of *Vasudhaiva Kutumbakam*—the world as one family—he reaffirmed India's commitment to advancing climate action in a manner that supports resilience, shared prosperity, and long-term societal well-being.

# Address from Dr Ashwani Mahajan ji

Dr. Ashwani Mahajan is the President of the Bharat Climate Forum Governing Council and Organising Committee and a Board Member of the Council of International Economic Understanding (CIEU). He also serves as the National Co-Convener of the Swadeshi Jagran Manch.


**In his welcome address, Dr. Ashwani Mahajan, President of the Bharat Climate Forum, framed climate action as integral to India's long-term economic strength, sovereignty, and resilience.** He noted that the Forum convenes at a moment of global economic uncertainty, geopolitical realignment, and accelerating climate risks—making India's choices today decisive for its environmental future, technological leadership, and social stability.

**Dr. Mahajan reiterated that the Bharat Climate Forum was anchored in the belief that climate ambition must be a central pillar of national growth and development.** He highlighted clean technology manufacturing as a core component of this approach, noting that following the inaugural Forum in January 2025, it was identified as a major pillar of India's national manufacturing mission.

**He underscored the importance of strengthening domestic capability and economic self-reliance in the climate transition.** In today's context, he observed, clean technologies, critical minerals, and advanced manufacturing have become increasingly important to economic competitiveness and long-term resilience. Drawing on the principles of *Swadeshi* and *Atmanirbhar Bharat* to build robust domestic capacity, he noted, enables India to participate more effectively in global value chains while advancing its national development priorities.

**He also noted that Bharat Climate Forum 2026 expands its focus to integrate the global priorities of climate adaptation and resilience into India's growth model.** He emphasized that climate shocks are no longer distant risks but factors that must be accounted for in present-day economic planning, investment decisions, and development strategies. Given India's high exposure to climate risks, he underlined the importance of strengthening adaptive capacity and resilience across sectors to ensure growth remains stable and inclusive even in the face of increasing climate variability.

**He concluded by outlining a clear set of priorities for the path ahead.** These include scaling clean technology manufacturing with speed and quality, building resilient systems that protect people and growth, mobilising long-term capital aligned with national priorities, and investing in domestic skills, innovation, and institutional capacity. Reiterating his welcome, Dr. Mahajan expressed confidence that the Forum would advance practical collaboration to ensure climate action strengthens India's economic rise and long-term resilience.

# High-Level Inaugural Address by Hon'ble Vice President Shri CP Radhakrishnan


**The Bharat Climate Forum 2026 was formally inaugurated by the Hon'ble Vice President of India, Shri C. P. Radhakrishnan, who graced the gathering and underscored the national importance of the Forum's mission.** Welcoming participants from India and across the world, he commended the Council for International Economic Understanding (CIEU) for shaping the Forum as a national platform for serious reflection and purposeful action on one of the most defining challenges of our time.

**In his address, the Hon'ble Vice President situated India's climate engagement within its long civilisational ethos of harmony between human activity and the natural world.** Drawing on philosophical traditions and lived practices embedded in India's history, from water conservation systems and sustainable agriculture to principles of restraint and balance, he emphasised that climate solutions are not only technological, but also cultural and ethical in nature, guided by responsibility to future generations.

**He noted that India's development journey in recent decades has been shaped by a continuous effort to balance growth with equity, aspiration with restraint, and present needs with future**

**responsibility.** Under the visionary leadership of the Hon'ble Prime Minister Shri Narendra Modi, he observed, India has redefined how a developing nation approaches climate responsibility. India's Panchamrit commitments announced at COP26, including the goal of meeting 50% of energy requirements from renewable sources and achieving net-zero emissions by 2070, reflect a holistic approach rooted in equity and sustainability.

**The Hon'ble Vice President emphasised that for India, climate action is a strategic opportunity.** He highlighted its potential to build new industries, create high-quality employment, strengthen energy security, and position India as a global hub for manufacturing and innovation. The vision of Viksit Bharat 2047 and Net Zero Bharat, he noted, are deeply interconnected and must advance together.

**He also underscored the importance of values and behavioural change in advancing sustainability.** Initiatives such as Lifestyle for Environment (LiFE), he observed, remind the world that sustainability is not only a function of technology and policy, but also of individual and collective choices that shape consumption patterns and social norms.

**Highlighting the centrality of clean technology manufacturing to India's climate and development strategy, the Hon'ble Vice President stressed the importance of building domestic capabilities.** A developed India, he noted, must be anchored in homegrown clean technologies, resilient manufacturing systems, and a future-ready workforce. Across renewable energy, energy storage, green hydrogen, electric mobility, sustainable materials, climate-smart agriculture, and digital climate solutions, India is increasingly emerging not just as a market, but as a source of solutions for the world.

**He emphasised that a strong domestic foundation complements, rather than replaces, global cooperation.** India's approach to partnerships, he noted, is one of collaboration without dependence and openness rooted in confidence. Initiatives such as the International Solar Alliance and the Coalition for Disaster Resilient Infrastructure exemplify India's solutions-oriented leadership—strengthening domestic resilience while delivering shared global benefits.

**In closing, the Hon'ble Vice President called upon participants to focus on solutions that are practical, scalable, affordable, and grounded in India's realities.** Encouraging ambition matched with implementation and vision reinforced by perseverance, he expressed confidence that the deliberations at Bharat Climate Forum 2026 would contribute meaningfully to building a sustainable, resilient, and prosperous future for India and the world.

# Vote of Thanks from Shri Sumant Sinha ji


**Proposing the vote of thanks, Shri Sumant Sinha expressed his sincere gratitude to the Hon'ble Vice President of India for inaugurating the Bharat Climate Forum 2026 and graciously lending his presence to the occasion.** He noted that the Forum, now in its second year, reflects the collective effort of many stakeholders committed to advancing meaningful dialogue on climate, development, and clean energy transitions.

**He reiterated the importance of pursuing development in harmony with nature, echoing the themes highlighted during the inaugural session.** Shri Sinha observed that India's development vision, including the goals of *Viksit Bharat* 2047 and achieving net-zero emissions by 2070, must progress together, reinforcing both economic growth and environmental responsibility.

**In closing, Shri Sinha thanked all participants and acknowledged the efforts of the Bharat Climate Forum team in advancing the clean technology manufacturing agenda.** He expressed confidence that the discussions and deliberations at the Forum would continue to inform policy direction and industry action, and once again conveyed his appreciation to the Hon'ble Vice President and all attendees for their engagement.

# High-Level Address by H.E. Selwin Hart

**H.E. Selwin Hart serves as Special Adviser and Assistant Secretary-General for Climate Action at the United Nations.** With decades of experience advancing the global climate agenda, he has played a central role in shaping international efforts on climate action, just transition, and multilateral cooperation. At the Bharat Climate Forum 2026, H.E. Hart delivered a High-Level Special Address, situating India's climate leadership within the broader global transition and underscoring the importance of coordinated action across governments, finance, and industry to advance a fair, secure, and sustainable low-carbon future.

**Framing climate change as a present-day development challenge, H.E. Hart highlighted the intensifying impacts being felt across the world.** Extreme heat, floods, droughts, and storms, he observed, are already disrupting lives, livelihoods, and economies, particularly in developing countries and vulnerable communities that have contributed the least to the crisis. Climate change, he emphasised, is no longer a future risk but a defining constraint on development today.

**Situating the Bharat Climate Forum within a decisive decade for global climate action, H.E. Hart reflected on progress since the adoption of the Paris Agreement ten years ago.** While the world was heading towards nearly 4°C of warming prior to 2015, recent assessments show that current national climate plans, if fully implemented, would place the world on a pathway just above 2°C. This progress, he noted, demonstrates what coordinated multilateral action can achieve, while underscoring the urgency of faster implementation, with national climate plans serving as a floor rather than a ceiling for ambition.

**H.E. Hart underscored India's critical role in shaping the Paris outcome and called for its continued leadership as the world enters the second decade of implementation.** Amid geopolitical uncertainty, economic disruption, and accelerating climate

impacts, he emphasised that India's political and intellectual leadership will be central to ensuring this decade becomes one of delivery rather than delay.

**H.E. Hart highlighted the risks embedded in continued fossil fuel dependence, particularly for importing economies.** With fossil fuel production concentrated in a small number of countries and consumption widely dispersed, he described a structurally asymmetric system of risk, noting that three out of every four people globally live in countries that are net importers of fossil fuels—leaving them exposed to price volatility, supply disruptions, and macroeconomic instability.

**At the same time, he noted that global economic pressures are reshaping the energy transition.** Slower growth, rising debt, supply-chain disruptions, and concerns around affordability and energy security are influencing national priorities, with the transition increasingly driven by cost, competitiveness, resilience, and security. Clear market signals reflect this shift: global investment in clean energy has surged to nearly twice the level of investment in fossil fuels, solar power has become the cheapest source of new electricity in most regions, and renewables now account for the majority of new power capacity additions worldwide.

**For India, these dynamics underscore both vulnerability and opportunity.** As one of the world's largest energy importers, India spends substantial capital each year on fossil fuel imports, resources that could otherwise be directed toward domestic investment in infrastructure, innovation, resilience, and employment. Reducing fossil fuel dependence, he argued, is therefore not only a climate imperative but a macroeconomic and strategic priority.

**Highlighting India's rapid clean energy transformation, H.E. Hart pointed to evidence of what is possible at scale**. India's solar capacity has expanded from just over 30 megawatts in 2010 to approximately 130 gigawatts by early 2026, with renewable energy additions reaching record levels in 2025. Distributed and rooftop solar programmes, he noted, are delivering affordability, resilience, and equity benefits while creating local employment.

**He also underscored India's global leadership beyond its borders.** Through initiatives such as the International Solar Alliance, the Coalition for Disaster Resilient Infrastructure, and the Leadership Group for Industry Transition, India has helped shape global cooperation on clean energy deployment, resilient infrastructure, and industrial decarbonisation—demonstrating solutions-oriented leadership rooted in implementation.

**Looking ahead, H.E. Hart outlined areas where India's leadership is particularly critical.** These include continued domestic action to meet rising energy demand while reducing fossil fuel dependence; leadership in shaping resilient and diversified clean energy supply chains; alignment of trade, industrial policy, and climate action; and efforts to strengthen information integrity in climate discourse through science-based and transparent engagement.

**He emphasised that advancing a just and inclusive transition remains essential to long-term success.** Supporting workers and communities, expanding access to affordable energy, and building public trust, he noted, are central to sustaining economic and social progress.

**In closing, H.E. Hart reaffirmed that the energy transition is already underway and irreversible.** The choice facing the global community, he observed, is not between climate ambition and development, but between leadership and dependence. Given India's scale, capabilities, and global standing, he expressed confidence that India would be among the principal architects of a cleaner, fairer, and more resilient global development model, with the United Nations standing ready to support this leadership.

# Immersive Discussion – Blueprint 2035: Greening India's Growth Engine

The plenary session *Blueprint 2035: Greening India's Growth Engine* explored how India can maintain high economic growth while transitioning towards a cleaner, more resilient development pathway. The discussion focused on aligning economic strategy with climate priorities through coordinated policy action, institutional reform, and scaled investment in low-carbon growth sectors.


## Speakers

**Dr Sanjay Jaiswal**
Member of Parliament
Chief Whip,
Bharatiya Janata Party
Trustee,
Climate Parliament

**Bhupinder Bhalla**
Former Secretary,
Ministry of New and
Renewable Energy,
Government of India

**Johannes Zutt**
Vice President,
South Asia, World
Bank Group

**Amitabh Kant**
Senior Advisor, Fairfax Financial
Former G20 Sherpa to the Prime
Minister of India
Former CEO, NITI Aayog

## Moderator

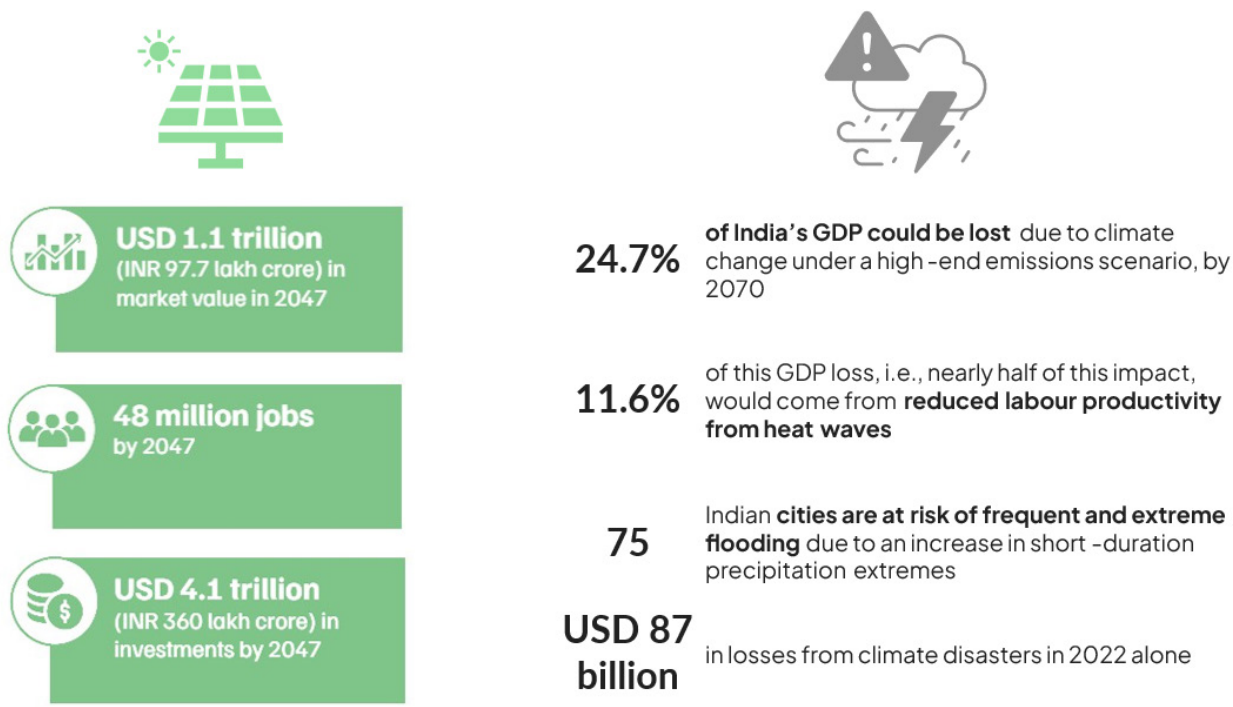
**Hem Kaur Saroya**
Anchor, CNN-News18

## Context

**India cannot realise the vision of Viksit Bharat without fully integrating climate action into its growth model.** Green sectors are emerging as a central engine of economic transformation, with estimates indicating USD 4.1 trillion in cumulative green investments and an annual green market opportunity of USD 1.1 trillion by 2047 across renewable energy, circularity, the bio-economy, and nature-based solutions.

**Climate impacts are already shaping India's macroeconomic outlook and growth trajectory.** Climate-related events caused approximately USD 87 billion in losses in 2022, while high-emissions pathways could erode up to 24.7% of GDP by 2070—nearly half driven by heat-related productivity decline. Sustaining 8–10% annual growth and advancing toward a USD 30 trillion economy will require embedding climate resilience and low-carbon competitiveness across all sectors.

*Exhibit A: Green Growth and Climate Impacts*




*Data Source: CEEW - "Building a Green Economy for Viksit Bharat", 2025, ADB's Asia-Pacific Climate Report*

**Globally, green industrialisation is becoming a defining dimension of economic leadership.** Major economies are aligning climate ambition with industrial strategy, with the United States advancing the Inflation Reduction Act, the European Union implementing the Green Deal, CBAM, and the Net-Zero Industry Act, and China consolidating dominance across key cleantech manufacturing supply chains. Competition across clean technologies is intensifying, placing renewed emphasis on scale, speed, and cost competitiveness.

*Exhibit B: Green Industrialization: The Next Frontier of Global Leadership*

| | USA (#1 GDP) | European Union (#2 GDP) | China (#3 GDP) |
|---|---|---|---|
| **Policy** | | | |
| | **Inflation Reduction Act (IRA)** provides long-term tax credits and financing for clean energy | **European Green Deal** is the EU's new growth strategy, aligning climate with industry, infrastructure, and jobs, reinforced by the **Net Zero Industry Act (NZIA) and CBAM** | The **"1+N" framework for Dual Carbon Goals** embeds carbon peaking & neutrality in national planning; the **Action Plan for Carbon Peaking** before 2030 operationalizes this across sectors |
| **Ecosystem Support for Enterprises** | | | |
| | **DOE Loan Programs Office** deploys large loan guarantees for storage, EVs, grid, and industrial decarbonization | **EU Innovation Fund provides €40 billion in funding** (financed by EU ETS revenues) to scale up innovative industrial decarbonization projects | China **controls >80% of 11 global cleantech supply chains**, enabled by subsidies, scale, and critical minerals dominance |
| **Investments** | | | |
| | **U.S. investment in clean energy rose to USD 280 billion in 2023**, up from ~USD 200 billion in 2020 | Over the course of the **2021–2027 period**, the **EU is set to spend at least 30% of its budget on climate-relevant objectives** (~662B Euros) | **38% of global clean energy investments** in 2023 were made by China |
| **Green Power** | | | |
| | **Renewables supplied ~21% of U.S. electricity in 2023**; projected ~26% by 2026 (EIA)<br><br>While the pace has varied with policy shifts, the green transition remains on course | In 2024, **45%+ of net electricity generated** in the EU came from renewable energy sources<br><br>Note: Includes Germany, the world's #4 GDP if counted separately. | Renewables now comprise **56% of total installed power capacity** and 86% of 2024 additions |

**These shifts have direct implications for India's trade, industry, and competitiveness.** Nearly 68% of India's exports are destined for net-zero economies, while supply chains are increasingly subject to Scope 3 and carbon-intensity requirements. With over half of India's 2050 urban infrastructure yet to be built, the country faces a critical window to localise technologies, strengthen industrial resilience, and capture emerging green markets.

*Exhibit C: Green Growth: Key opportunities*


**India's forthcoming NDC 2035 and National Adaptation Plan will be central to translating these dynamics into a coherent growth strategy.** Together, they will align clean energy expansion, sectoral decarbonisation, circular value chains, and resilience-building with national development priorities, safeguarding productivity and supply chains as climate risks intensify.

## Potential Opportunities and Challenges

**Key Opportunities**

- **Climate-resilient growth and supply chains:** Embedding resilience across systems to protect productivity, infrastructure, and exports as climate risks intensify and net-zero trade standards tighten.
- **Cleantech manufacturing at scale:** Building jobs, exports, and industrial leadership across solar, batteries, green hydrogen, EV components, and circular materials through domestic demand and PLI ecosystems.
- **Scaled green finance:** Lowering capital costs and accelerating investment through taxonomies, disclosures, green bonds, and sustainable debt markets.
- **Global leadership through South–South cooperation:** Expanding India's green development vision via ISA, CDRI, LiFE, and regional value chains.

**Key Challenges**

- **Rising climate disruption:** Increasing frequency of heat and extreme weather impacting labour productivity, infrastructure, and logistics.
- **Carbon competitiveness risks:** CBAM, Scope 3, and supply-chain standards threaten export-oriented sectors, with 68% of exports destined for net-zero markets.
- **Technology dependence:** High import reliance across key cleantech value chains while competing with the scale of the U.S. IRA, EU industrial policies, and China's dominance in 11 cleantech supply chains.
- **Green skills gap:** Insufficient pace of skilling for clean manufacturing, energy, and infrastructure, compounded by heat-related productivity constraints.

### Key Insights

**India's pathway to green growth was framed as an integrated economic strategy rather than a climate-only agenda.** Sustaining high growth while transitioning to a cleaner and more resilient economy will depend on aligning energy security, industrial competitiveness, and climate action through consistent policy, system-wide planning, and large-scale execution.

**Greening India's growth model requires parallel progress on clean energy supply and energy demand.** Rapid expansion of renewables must be complemented by sustained improvements in energy efficiency across sectors to enhance affordability, strengthen household and firm resilience, and reduce overall system costs. Efficiency-led growth was positioned as a critical lever for decoupling economic expansion from energy consumption.

**Reliable power delivery emerged as a foundational requirement for the transition.** Expanding renewable capacity alone is insufficient without commensurate investments in grid expansion, modernisation, digitalisation, and storage. Integrating storage into procurement and bidding frameworks was highlighted as essential to manage variability, enable firm power, and support the next phase of deployment.

**Stable and predictable policy frameworks were identified as the primary enabler of scale.** Mobilising public, multilateral, and private capital at the required pace depends on transparent and consistent policy signals, particularly in India's federal context. Domestic manufacturing strategies must extend beyond assembly to deepen value addition across clean technology supply chains.

**India's ability to deploy solutions at scale was positioned as a core comparative advantage.** Demand aggregation, standardised procurement, and competitive bidding have driven rapid cost reductions and adoption. Applying these mechanisms to emerging areas such as battery storage and green hydrogen can support a shift from fossil fuel imports to clean energy exports.

**The session underscored that India's green transition represents a structural economic opportunity.** By aligning clean manufacturing, resilient infrastructure, and scalable finance with long-term development priorities, India can strengthen competitiveness, create jobs, and emerge as a credible green growth leader for the Global South.

# Keynote Ministerial Address from Hon'ble Shri Manohar Lal Khattar, Minister of Power, Housing & Urban Affairs


**Hon'ble Shri Manohar Lal Khattar, Union Minister for Power, Housing and Urban Affairs, Government of India**, delivered an impactful keynote ministerial address at the Bharat Climate Forum 2026, outlining India's accelerated clean energy transition and its integrated approach to development, energy security, and climate responsibility.

**In his address, Shri Manohar Lal Khattar situated India's climate action within its cultural and historical ethos, noting that environmental stewardship has long been embedded in India's civilisational values.** He emphasised that respect for nature and a sense of shared global responsibility continue to shape India's approach to climate action and sustainable development.

He highlighted India's rapid transition toward clean energy, underscoring the pace at which the country has advanced its renewable energy ambitions. India, he noted, has not only set ambitious targets but has moved decisively to meet them ahead of schedule—reflecting strong institutional commitment and an emphasis on delivery.

Shri Khattar pointed to India's clean energy journey as evidence of what is possible at scale when clear policy direction is combined with effective implementation.

He emphasised that progress across renewable energy has been driven by coordinated action between the central government, states, industry, and citizens.

Underscoring the parallel focus on sustainable urbanisation, Shri Khattar highlighted the expansion of environment-friendly urban transport systems. He noted that investments in mass transit and clean mobility are central to reducing emissions from cities while improving accessibility, efficiency, and quality of life.

He also highlighted the role of cleaner mobility solutions—including electric vehicles and alternative fuels, in reducing emissions, strengthening energy security, and lowering dependence on imports. These efforts, he noted, are being complemented by the growing adoption of decentralised and rooftop renewable energy solutions, which are expanding access and resilience.

Shri Khattar emphasised India's forward-looking approach to industrial decarbonisation and long-term energy security, highlighting emerging clean energy pathways as strategic priorities. He underscored the importance of building domestic capabilities in new energy technologies to support both economic growth and emissions reduction.

Looking ahead, he outlined the role of a diversified clean energy mix in meeting India's long-term development goals, including continued attention to efficiency improvements and next-generation energy systems. Strengthening existing assets while investing in future technologies, he noted, will be critical to sustaining progress.

In closing, Shri Khattar emphasised that development remains essential, but that its environmental and social costs must be carefully managed. India's approach, he argued, demonstrates that economic growth, environmental responsibility, and energy security can be advanced together through sustained policy focus, institutional strength, and collective participation.

# Catalytic Dialogue
# Global High-Level Policy Dialogue

The Global High-level Policy Dialogue examined the convergence of global and national priorities on energy transition, climate action, and economic growth. Through a high-level fireside conversation, the session explored how international cooperation and domestic economic strategy can be aligned to accelerate sustainable energy outcomes at scale.


## Speakers

**Dr Shamika Ravi**
Member, Prime Minister's Economic Advisory Council

**H.E. Damilola Ogunbiyi**
CEO and Special Representative of the UN Secretary-General for Sustainable Energy for All (SEforALL) Co-Chair, UN-Energy

## Moderator

**Timsy Jaipuria**
Policy Editor, CNBC

**The dialogue positioned sustainable energy as a core economic and development imperative for India, rather than a standalone climate objective.** Energy access, affordability, and security were framed as foundational to India's growth ambitions, manufacturing competitiveness, and poverty reduction, underscoring that the energy transition and development outcomes are structurally intertwined.

**India's experience was highlighted as a rare large-scale example of growth-aligned energy transition driven by political will, policy continuity, and execution capacity.** Rapid expansion of renewable energy and near-

universal electrification were cited as evidence that ambitious targets—when supported by stable policy frameworks and effective implementation—can simultaneously deliver economic growth, social inclusion, and resilience.

**The discussion emphasised that India's development pathway cannot replicate the historical, high-emissions growth model of advanced economies.** Achieving Viksit Bharat will require embedding sustainability into the broader development agenda, with shifts in technology, consumption patterns, and lifestyles. Climate action was therefore framed as inseparable from SDGs related to poverty reduction, gender equity, health, and productivity.

**Distributed and decentralised energy solutions emerged as a critical enabler of inclusive growth.** Widespread adoption of solar at the household and community level has reduced dependence on centralised supply, improved resilience, and enabled micro-level productivity gains. Clean energy access, particularly clean cooking, was highlighted as a transformative intervention for women, delivering health benefits, time savings, and increased labour force participation. Energy efficiency was consistently highlighted as one of the most cost-effective and underleveraged levers of the transition

**The transition's success was shown to depend heavily on the role of states, where much of the implementation occurs.** While several states are advancing rapidly, others face binding fiscal and institutional constraints, creating uneven transition pathways. Addressing this divergence will require stronger central–state coordination, differentiated policy support, and mechanisms to recognise and finance non-GDP contributions such as carbon sinks and ecosystem services.

**Private sector participation was identified as indispensable to achieving scale.** Public–private partnerships were framed as essential across generation, transmission, distribution, and last-mile delivery, with emphasis on balanced risk-sharing rather than full privatisation. India's experience demonstrates that policy-led market creation—combined with competition, can effectively crowd in private capital and technology.

**Financing constraints emerged as a central structural challenge.** While the long-term economics of the transition are sound, high upfront costs, delayed returns, and rising geopolitical uncertainty continue to elevate the cost of capital. Gaps between global climate finance pledges and realised flows were noted as increasing pressure on domestic resources, reinforcing the need for innovative financing structures, stronger multilateral support, and scalable domestic instruments.

**India's role as a demonstration economy for the Global South was strongly emphasised.** Beyond meeting its own targets, India was positioned as a provider of tested policy frameworks, institutional models, and implementation expertise. Platforms such as the International Solar Alliance illustrate how India's domestic experience can be translated into South–South cooperation, shaping a development pathway that aligns energy security, growth, and climate responsibility.

# Firestarter – Riding the Storm: Resilience as the New Economic Strategy

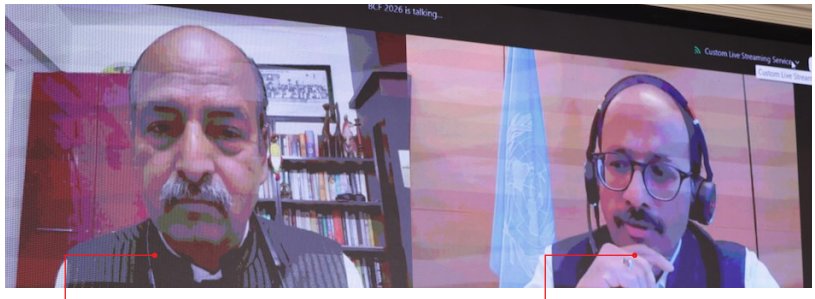
The plenary session *Riding the Storm: Resilience as the New Economic Strategy* examined why climate adaptation and resilience are emerging as core pillars of India's economic planning. The discussion focused on managing macroeconomic risk, safeguarding financial stability, and embedding resilience across public policy, infrastructure, and investment decisions.

## Speakers

**Dr V. Anantha Nageswaran**
Chief Economic Advisor,
Government of India


**Montek Singh Ahluwalia**
Senior Economist
Former Deputy Chair,
Planning Commission of India

**Franziska Ohnsorge**
Chief Economist, South Asia Region,
World Bank Group



**N.S. Vishwanathan**
Non-Executive Chairman,
Axis Bank


**Kamal Kishore**
Special Representative of the
UN Secretary-General for
Disaster Risk Reduction
Head, UNDRR

## Moderator

**Oren Ahoobim**
Partner and Climate Practice
Area Co-Lead,

## Context

**India's vision of Viksit Bharat 2047 depends on sustaining high growth while protecting economic stability.** As the world's fastest-growing major economy, with GDP growth estimated at 6.5% in 2024–25 and projected GDP of USD 7.3 trillion by 2030, India has made strong gains in poverty reduction, employment, and development outcomes aligned with long-term national ambition.

**Climate change is emerging as a structural risk to this growth trajectory.** Nearly 85% of Indian districts are exposed to at least one major hazard—floods, droughts, or cyclones—with river basins, coastal belts, and mountain ecosystems increasingly becoming chronic disaster hotspots. In the Himalayas, glacial lake outburst floods are occurring more frequently than in any other mountain region globally.

*Exhibit A: Hazard Risk Exposure of India*

**Floods: ~12%** of land area is flood-prone due to concentrated monsoon rainfall, poor drainage, and high sediment load in river basins like the Ganga and Brahmaputra.[1]

**Droughts: 68%** of cultivable land is drought-prone owing to erratic monsoons, and overextraction of groundwater.[1]

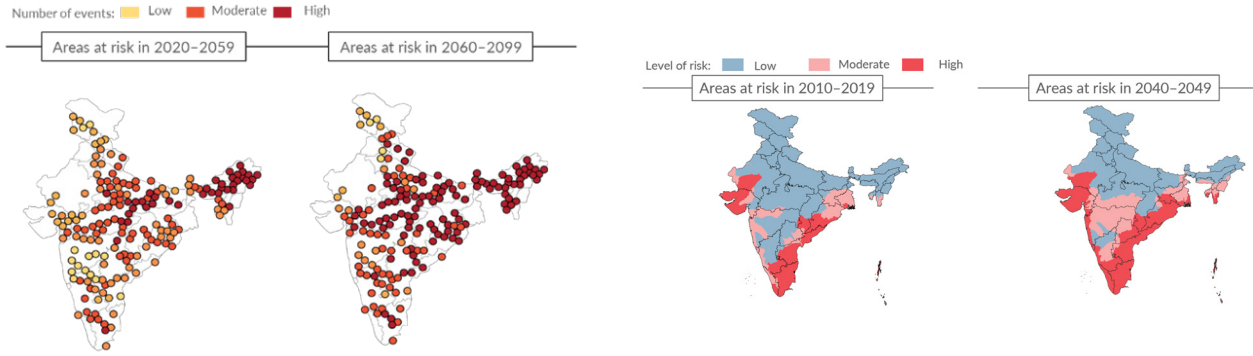
**Cyclones: 76%** of the coastline is cyclone-prone due to warm waters of the Bay of Bengal and Arabian Sea, with climate change intensifying storms.[1]

**Landslides: 15%** of the landmass is vulnerable to landslides, in the Himalayas and Western Ghats, driven by steep terrain, heavy rains, and deforestation.[1]

*Source: NDMA*

**The economic impacts of climate shocks are already material.** Floods routinely damage infrastructure and disrupt services, while extreme heat is reducing labour productivity across agriculture, construction, and manufacturing—working hours are projected to decline by nearly 6% by 2030. In 2023 alone, India incurred nearly USD 12 billion in disaster-related damages, and under high-emissions scenarios, climate impacts could erode up to 24.7% of GDP by 2070.

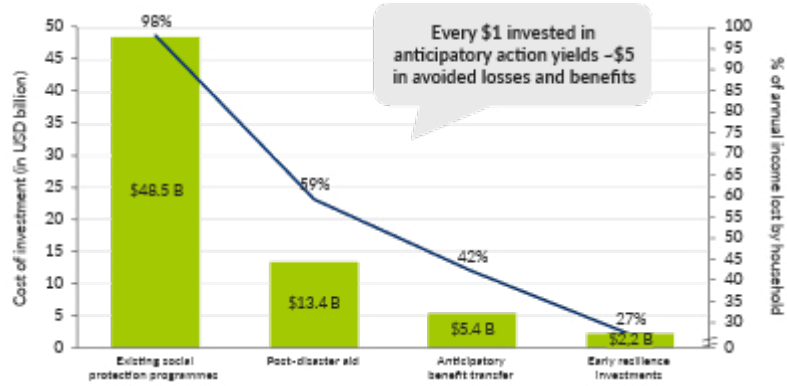
*Exhibit B: Comparison of near future and far future risk of severe fluvial flooding in India; Comparison of current and future risk of category 3 cyclones in India*




*Data source: Dalberg and Climate AI analysis*

**Safeguarding growth therefore requires embedding resilience into economic planning.** Evidence consistently shows that investments in adaptation and disaster risk reduction deliver strong avoided-loss returns, stabilising productivity, public finances, and long-term development outcomes.

*Exhibit C: Modelled costs of early responses for a one-in-20-year climate disaster for India*




*Data source: IIED, Climate resilience through social protection: The economic case for early action, 2025*

**Policy frameworks are beginning to reflect this shift, but scale remains the challenge.** National missions, rising adaptation expenditure, and the forthcoming National Adaptation Plan are strengthening institutional capacity, while states and local institutions play a growing role in preparedness and response.

**Looking ahead, India has a narrow window to scale resilience systematically.** Digital public infrastructure, clearer resilience taxonomies, innovative financing instruments, and community-led delivery systems can help crowd in capital and translate planning into durable, inclusive resilience at scale.

## Potential Opportunities and Challenges

**Key Opportunities**

- **Unlock private capital for resilience**: Crowd in private investment through targeted incentives such as resilience-linked PLIs, concessional finance for climate-resilient technologies, and pilots for parametric insurance, catastrophe bonds, and anticipatory financing.
- **Strengthen financial risk governance**: Establish a national resilience/adaptation taxonomy and mandate climate-risk assessments across banks and insurers, building on RBI's draft climate disclosure framework.
- **Build integrated climate-risk data and DPI**: Develop interoperable digital platforms integrating weather, hydrological, disaster-loss, and social data to support forecasting, planning, and last-mile decision-making.
- **Empower local resilience delivery**: Strengthen the role of PRIs, SHGs, CSOs, and community networks through capacity building, localised risk information, and support for community-led preparedness and response.

**Key Challenges**

- **Insufficient and skewed resilience finance**: Long-term adaptation remains underfunded and heavily reliant on public budgets, with limited financial protection coverage and low private participation.
- **Data and analytics gaps**: Lack of granular, forward-looking climate-risk data constrains effective risk assessment, planning, and anticipatory action at local and sectoral levels.
- **Fragmented institutional coordination**: Siloed mandates across ministries and sectors limit integrated responses to increasingly complex, multi-hazard climate risks.
- **Weak market incentives for resilience**: Private sector engagement remains limited, with resilience largely viewed as a public or CSR responsibility rather than a viable investment opportunity.

## Key Insights

**Resilience was positioned as a core economic strategy for sustaining India's growth trajectory.** While disaster mortality has declined in several contexts, the economic and livelihood impacts of climate shocks are rising. The discussion underscored that long-term growth will increasingly depend on reducing disruption to infrastructure, firms, households, and public finances.

**Mainstreaming risk analytics into economic planning emerged as a foundational priority.** Panellists emphasised the need to move beyond ex-post loss accounting toward systematic estimation of expected losses and contingent liabilities, treating climate and disaster risk as a measurable macroeconomic exposure. Embedding this approach into routine planning and fiscal processes was seen as essential to safeguarding development gains.

**Early warning systems were highlighted as among the highest-return public investments, but insufficient on their own**. India's experience demonstrates the value of forecasting and preparedness, yet the next phase requires scaling multi-hazard systems beyond cyclones to include urban flooding, flash floods, and glacial risks, alongside stronger last-mile response and complementary risk reduction measures.

**Stronger standards, codes, and procurement norms were identified as critical levers for long-term resilience.** As climate extremes intensify, infrastructure decisions must incorporate minimum resilience requirements alongside cost considerations, ensuring durability and reliability are systematically valued across sectors.

**Household- and firm-level adaptation is underway, but constrained by development bottlenecks.** Most households and small firms are responding through low-cost measures, with constraints reflecting broader gaps in finance, skills, assets, and basic services—suggesting that well-designed development investments can deliver significant resilience co-benefits.

**Financing resilience was underscored as the principal barrier to scale.** Despite strong avoided-loss returns, weak incentives limit upfront investment by households and firms, pointing to the need for blended approaches that combine public investment, targeted support, and private capital, supported by financial-sector reforms that integrate climate risk into decision-making.

**The discussion concluded that resilience must align with long-term growth and strategic autonomy.** Integrated planning, stronger standards, indigenous capability, and finance architectures that make prevention investable were framed as central to securing India's resilience at scale.

# Immersive Discussion
# From Mines to Gigawatts: India's Cleantech Manufacturing Story

The immersive discussion *From Mines to Gigawatts: India's Cleantech Manufacturing Story* explored how India can convert its cleantech ambitions into globally competitive manufacturing capacity across the value chain. Anchored in India's National Cleantech Manufacturing Implementation Plan, the session focused on the practical policy, financing, and industrial enablers required to move decisively from targets to execution.

## Speakers


**Gyanesh Chaudhary**
Chairman and Managing Director, Vikram Solar

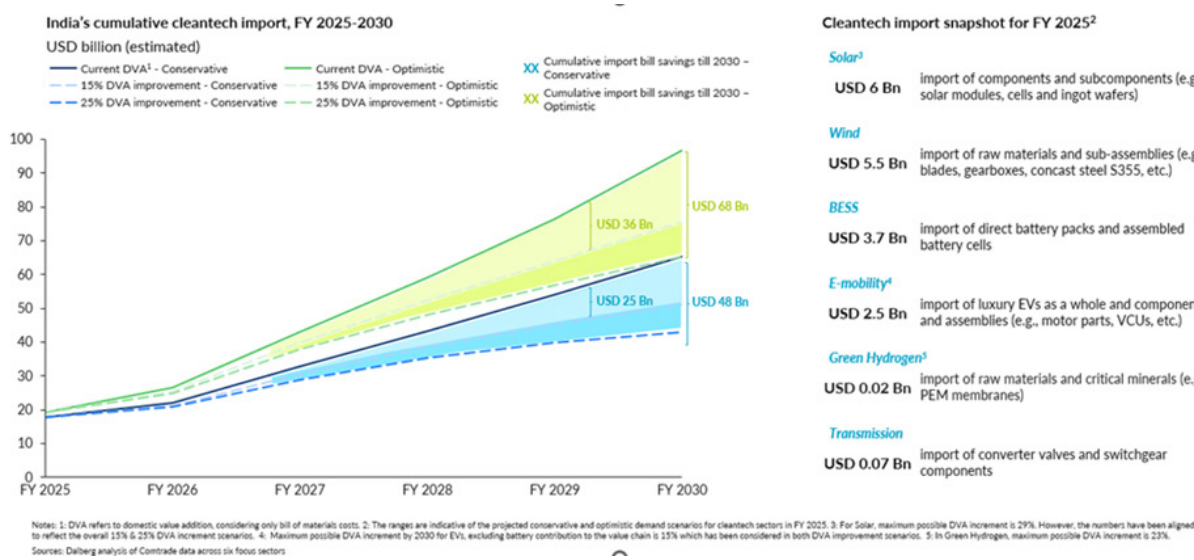
**Diane Jegam**
Regional Director South Asia, Proparco

**Bhupinder Bhalla**
Former Secretary, Ministry of New and Renewable Energy, Government of India

## Context

**India is entering a decisive phase of growth where climate ambition and economic strategy are increasingly intertwined.** As the country advances toward a USD 10 trillion economy by 2047 and net-zero emissions by 2070, electrification, renewable energy expansion, and green industrialisation are becoming central to its development pathway. Rapid deployment across solar, wind, batteries, e-mobility, hydrogen, and grid systems, anchored by the 500 GW non-fossil target and rising electricity demand, has positioned India as one of the world's largest and fastest-growing cleantech markets, creating a deep and durable base of domestic demand.

*Potential import savings under different domestic value addition improvement scenarios*




**However, demand is scaling faster than domestic manufacturing can keep pace.** Annual clean energy investments crossed USD 100 billion in 2024–25, yet domestic value addition remains limited, typically 25–40% across priority sectors, as upstream materials, capital equipment, and IP-intensive components continue to be imported. As a result, India captures only a fraction of the economic value generated by its own energy transition.

**This gap carries growing economic and strategic costs.** Cleantech imports reached USD 18–19 billion in 2024–25 and could rise to USD 65 billion annually by 2030 without deeper localisation, exposing India to price volatility, supply-chain disruptions, and rising project costs. Increasing domestic value addition by even 25 percentage points could deliver substantial foreign-exchange savings, strengthen the trade balance, and generate meaningful GDP gains through higher industrial output.

**Beyond economics, concentrated global supply chains for critical minerals and key components create systemic vulnerabilities.** Building resilient domestic manufacturing can mitigate these risks while unlocking large-scale employment, MSME participation, and new industrial clusters. Delivering this transition requires a coordinated manufacturing blueprint that addresses six horizontal levers—demand, R&D, raw materials, capital equipment and infrastructure, skilling, and financing—recognising that progress on any single lever in isolation will be insufficient.

## Potential Opportunities and Challenges

### Key Opportunities

- **Use India's demand scale to create predictable, multi-year offtake.** Aggregated procurement and clear domestic value-addition signals can unlock capital-intensive manufacturing investment.
- **Fast-track technology access and applied innovation.** Joint ventures, mission-led R&D, shared pilot lines, and testing infrastructure can reduce IP dependence and speed scale-up.
- **De-risk access to critical raw materials.** Diversification, domestic processing, stockpiling, and circularity can stabilise inputs across solar, batteries, motors, and hydrogen.
- **Strengthen domestic capital equipment and industrial ecosystems.** Support for machinery manufacturing and plug-and-play industrial zones can enable higher-value production.
- **Build specialised manufacturing skills at scale.** Industry-linked training, OEM-led certification, and centres of excellence can address cleanroom and precision skills gaps.
- **Lower cost of capital through targeted finance and tax reform.** Guarantees, blended finance, and duty rationalisation can close competitiveness gaps with global peers.

### Key Challenges

- **Uncertain demand and fragmented procurement deter investment.** Stop–start tenders and localisation ambiguity raise risk for upstream manufacturing.
- **Limited translation from R&D to manufacturing.** Weak applied research, testing gaps, and IP lock-ins constrain movement beyond assembly.
- **High dependence on imported materials creates vulnerability.** Price volatility, geopolitics, and duties inflate costs and disrupt supply chains.
- **Capital intensity and infrastructure gaps limit scale.** High capex, imported machinery, and thin supplier ecosystems constrain MSMEs.
- **Skills shortages slow advanced manufacturing adoption.** Training systems remain misaligned with emerging cleantech needs.
- **High financing costs and tax frictions reduce viability.** Expensive capital, liquidity lock-ups, and inverted duties deter high-value investments.

## Key Insights

**Policy clarity and demand depth were positioned as India's primary manufacturing advantage.** Panellists pointed to the combination of large domestic demand and sustained policy instruments (e.g., PLI and localisation standards) as the anchor that makes long-horizon manufacturing investment viable.

**Competitiveness requires moving from end-product assembly to full value-chain depth.** A central lesson from solar was that capacity scale alone is insufficient if upstream materials, components, and equipment remain import-dependent—exposing firms to volatility and limiting export readiness.

**Finance needs to be structured around the realities of commissioning risk and learning curves.** DFIs highlighted their role in providing patient, tailored capital—such as longer tenors, grace periods, guarantees, and technical assistance—to crowd in commercial lenders once performance stabilises.

**Raw-material security must be treated as a strategic manufacturing input, not a procurement afterthought.** The discussion emphasised identifying "critical" inputs early, combining domestic mining and processing with global partnerships, and building recycling/circularity pathways to reduce vulnerability.

**Skills and manufacturing excellence were framed as the make-or-break constraint for scaling.** Industry underscored that advanced manufacturing requires purpose-built training systems, stronger academia–industry collaboration, and standardised protocols that can deliver quality at scale.

**Export competitiveness depends on credibility architecture, not just cost.** Panellists argued for an "India cleantech brand" backed by common standards, testing and certification, and trade arrangements that explicitly open markets for Indian equipment.

# Immersive Discussion – Bharat Bankable: Investing for the Green Century

The immersive discussion *Bharat Bankable: Investing for the Green Century* examined how India can mobilise long-term climate capital at scale to support cleantech manufacturing and green industrialisation. The conversation focused on unlocking bankability through innovative financial instruments, risk-sharing mechanisms, and institutional frameworks required for the next phase of sustainable growth.

## Speakers


**Shalabh Tandon**
South Asia Regional Head of Operations & Climate Change, IFC

**Ashwini Kumar Tewari**
Managing Director, Corporate Banking and Subsidiaries, State Bank of India

**Umesh Revankar**
Executive Vice Chairman, Shriram Finance Limited

**Sanjeev Kaushik**
Principal Financial Sector Specialist, Asian Development Bank

## Moderator

**Kristween Walia**
CNN-News18

## Context

**India has emerged as one of the world's largest clean energy markets, with climate ambition now inseparable from its growth strategy.** National targets—500 GW of non-fossil capacity by 2030, rapid electrification of transport, and large-scale bioenergy expansion—are aligned with Atmanirbhar Bharat and Viksit Bharat, positioning India as a major driver of global clean energy demand and deployment.

**However, clean energy deployment is outpacing the ability of traditional finance to absorb risk.** Cleantech manufacturing and infrastructure require high upfront capital and long payback periods, while lenders face sector-specific constraints. In solar and wind, exposure limits and delayed DISCOM payments elevate credit risk. Batteries, EVs, and storage face uncertainty around technology life and resale value. Green hydrogen and electrolyser manufacturing require patient capital amid volatile global pricing. While NBFCs have stepped in, particularly for EVs and distributed energy, their higher cost of capital limits scale compared to banks and capital markets.

**This gap highlights the limits of a bank-led, debt-dominated financing model.** Institutions such as IREDA play a critical role, but interest rates for cleantech manufacturing remain materially higher than global benchmarks. Capital markets—despite growing depth—remain underutilised, with green bonds accounting for less than 5% of India's corporate bond market and long-term institutional capital from pensions and insurance largely absent due to regulatory and risk constraints.

**Closing this gap will require a coherent financing ecosystem aligned to the full cleantech value chain.** Scaling India's transition will depend on mobilising diversified capital—venture and mezzanine finance for innovation, equity for manufacturing scale-up, long-term debt for infrastructure, and guarantees to crowd in private investors. The next phase of India's clean energy journey will hinge not just on ambition, but on building financial architectures that make cleantech manufacturing and infrastructure truly bankable at scale.

## Potential Opportunities and Challenges

### Key Opportunities

- **Create a unified national cleantech financing architecture.** A central platform can aggregate pipelines, align DFIs, banks, and global capital, and apply a common cleantech finance taxonomy to improve scale, speed, and coordination.
- **Use blended finance to de-risk first-of-a-kind investments.** Targeted guarantees, concessional capital, and risk-sharing tools can crowd in private finance for manufacturing, storage, hydrogen, and grid infrastructure.
- **Mobilise long-term institutional capital.** Unlock pension and insurance participation through rated green bonds, InvITs, and securitised portfolios by easing regulatory and risk-weighting constraints.
- **Leverage capital markets and GIFT-IFSC for low-cost capital.** Scale green and transition bond issuance, pooled platforms, and partial credit guarantees to attract domestic and foreign investors.

### Key Challenges

- **High cost and short tenure of credit.** Interest rates and loan tenures remain misaligned with long-lived cleantech assets, inflating risk premiums and delaying financial closure.
- **Limited participation of patient capital.** Pension and insurance funds remain largely absent due to restrictive norms, weak instruments, and insufficient risk frameworks.
- **Technology and policy uncertainty.** Evolving standards, demand visibility, and shifting duty or incentive regimes raise perceived risk for lenders and investors.
- **Fragmented concessional finance and weak project pipelines.** Small, siloed concessional pools and limited project preparation capacity constrain scale-up of early-stage investments.

## Key Insights

**India's constraint is not "capital" in aggregate — it's the availability of the *right kind* of capital for the riskiest parts of the transition.** Panellists repeatedly noted that money in India largely chases already-bankable deals; what's scarce is lower-cost, risk-tolerant capital for frontier technologies, new green factories, and first-of-a-kind models.

**De-risking the first 20–25% is what unlocks mainstream bank lending at scale.** Banks will fund proven sectors (solar/wind) without enhancements, but hesitate when technologies, cashflows, and offtake pathways are still uncertain. First-loss, partial guarantees, and blended structures were positioned as the bridge until markets stabilise and credit models mature.

**Bankability requires projects that are commercially viable, scalable/programmatic, and impact-positive.** IFC framed this "triple bottom line" as the filter for deploying scarce multilateral capital — not for one-off deals, but to create replicable asset classes that crowd in larger pools of private finance.

**Credit enhancement can move the needle fastest — especially through capital markets.** ADB highlighted partial credit enhancement facilities that lift bond ratings by a few notches, lowering borrowing costs and expanding investor appetite. Similar guarantee-backed structures can also reduce collateral demands and borrowing costs for MSMEs.

Institution-building and execution speed are the missing multipliers. A recurring conclusion was the need for a dedicated platform/green institution to aggregate pipelines, deploy concessional pools quickly, and make blended finance catalytic (time-bound) rather than permanent.

# Immersive Discussion – The Cost of Survival: Funding India's Resilience

The immersive discussion *The Cost of Survival: Funding India's Resilience* examined how escalating climate risks are already influencing outcomes across agriculture, industry, cities, and infrastructure. The session focused on the policy, financial, and regulatory reforms required to mobilise adequate capital and risk-mitigation instruments to climate-proof India's long-term growth trajectory.

## Speakers


**Sivasubramanian Ramann**
Chairman, Pension Fund Regulatory and Development Authority

**Rajnish Kumar**
Former Chairperson, State Bank of India

**Ajay Seth**
Chairman
IRDAI

**Shilpa Kumar**
Managing Director and Head of India, British International Investment

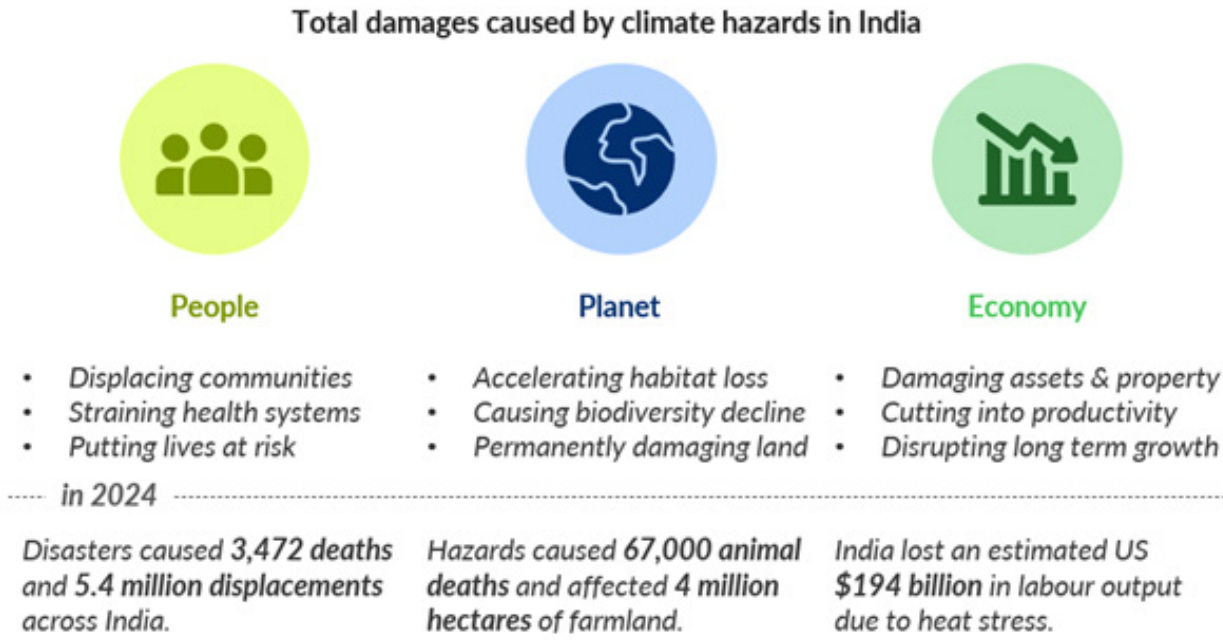
## Moderator

**Kristween Walia**
CNN-News18

## Context

**Climate hazards are now a binding constraint on India's growth, with rising macroeconomic costs.** India is among the world's most climate-affected countries, with over 80% of its population living in high-risk districts exposed to floods, heatwaves, droughts, and slow-onset risks. Climate disasters caused more than USD 12 billion in losses in 2025, while heat stress alone led to the loss of 191 billion labour hours in 2022—equivalent to 6.3% of GDP. As risks intensify, unmanaged physical impacts could reduce annual GDP by 3–10% by century's end, undermining productivity, fiscal stability, and poverty reduction.

Exhibit A: Impact of climate hazards

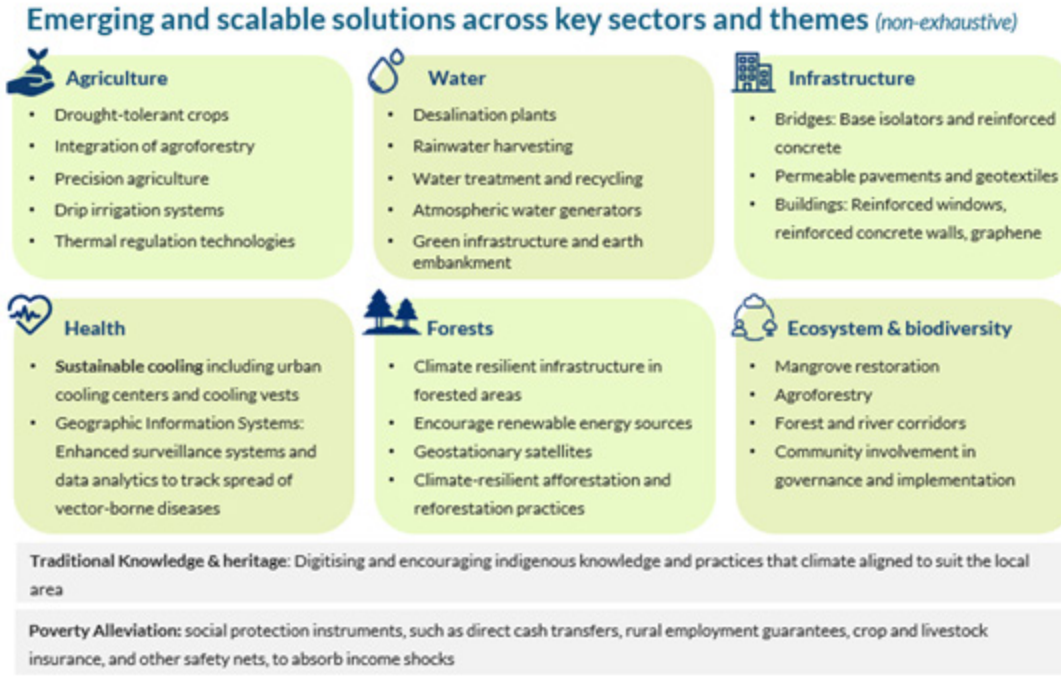



Data Source: Deccan Herald, Deccan Herald, Outlook Business

**Proven adaptation solutions are emerging across key sectors, with early evidence of impact.** In agriculture, drought-tolerant crops, agroforestry, precision farming, and drip irrigation are stabilising yields under water stress. In water systems, improved monitoring, flood warning infrastructure, and climate-resilient storage are strengthening resource management. In health, sustainable cooling and more than 100 heat action plans are reducing heat-related illness and productivity losses. Infrastructure investments—such as flood-safe housing, improved drainage, and reinforced public buildings—are improving resilience, while ecosystem-based approaches like mangrove restoration and watershed rehabilitation are buffering hydrological and coastal risks.

**Cross-cutting enablers are strengthening resilience outcomes but remain unevenly scaled.** Climate risk analytics, satellite monitoring, and digital advisory systems are improving decision-making, while social protection instruments—including cash transfers, employment guarantees, and insurance—are helping absorb climate-induced income shocks. The flagship crop insurance programme alone has paid out approximately INR 1.8 lakh crore since inception.

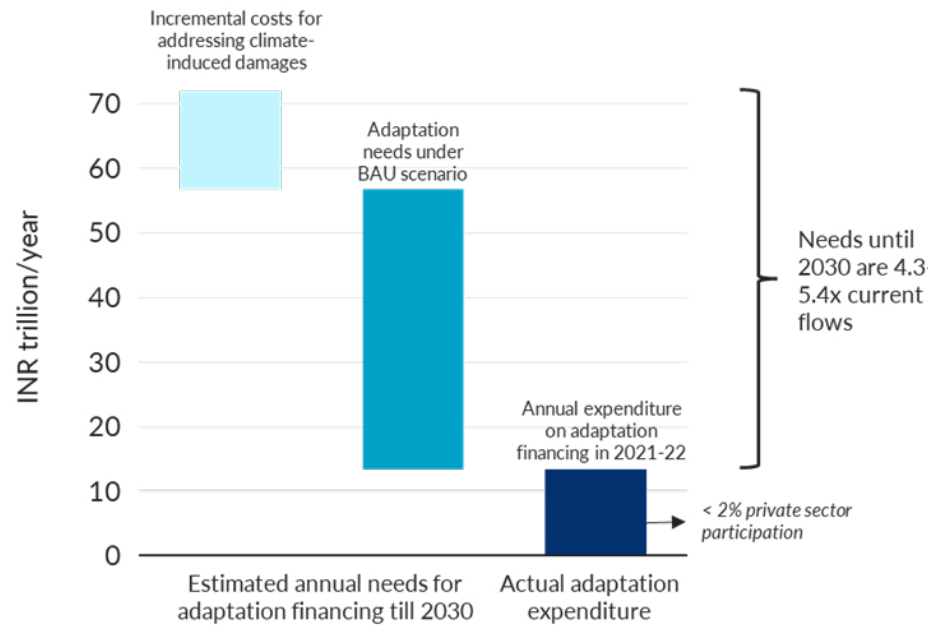
*Exhibit B: Scalable solutions emerging across key sectors and themes*




*Source: Adapted from BloombergNEF, "Adaptation and Resilience: The New Investment Imperative", 2025 and India's communication to the UNFCCC and National adaptation plan*

**The scale of adaptation needs now far exceeds public budgets, creating a financing imperative.** Adaptation-related public expenditure has risen to 5.6% of GDP, yet estimated needs are roughly five times higher through 2030. Despite strong economic returns, over 98% of adaptation finance remains publicly sourced, underscoring the need for better-targeted public spending, innovative financing and PPP models, and stronger data and MRV systems to crowd in private and international capital.

*Exhibit C: India's adaptation finance gap*




*Source: Government of India, "India's Initial Adaptation Communication to the United Nations Framework Convention on Climate Change", 2023.*

## Potential Opportunities and Challenges

### Key Opportunities

- **Large and growing resilience investment market:** Adaptation and resilience technologies represent a sizeable addressable market globally (USD 600 billion–1 trillion by 2030), with strong evidence of high resilience dividends—particularly in LMICs—creating a credible case to scale proven solutions nationally.
- **Innovative finance to crowd in private capital:** Blended finance, guarantees, PPPs, pooled funds, bonds, and insurance-based instruments can unlock private investment for resilience infrastructure, supported by viability gap funding and risk-sharing mechanisms.
- **Improving data and finance architecture:** India's draft Climate Finance Taxonomy and proposed Climate Risk Information System provide foundations for structured adaptation lending, risk assessment, and improved capital allocation.
- **Leveraging MDB and concessional capital:** Rising multilateral commitments create an opportunity for India to anchor large-scale, programmatic resilience platforms and position itself as a leading adaptation finance market for the Global South.

### Key Challenges

- **Weak commercial models for resilience projects:** Many adaptation benefits are public goods, diffuse, and long-term, making them difficult to monetise and challenging for traditional project finance and private investors.
- **Limited financial-sector readiness:** Banks and NBFCs recognise climate risk but lack standardised data, methodologies, tools, and skills to integrate physical climate risk into lending, supervision, and portfolio decisions.
- **Data, MRV, and taxonomy gaps:** Incomplete climate budget tagging, evolving adaptation taxonomies, and weak measurement and verification systems reduce investor confidence and constrain the development of a scalable project pipeline.

## Key Insights

**Scaling MSME resilience finance depends on closing the "missing middle" between pilots and bankable scale.** Innovation exists, but informality, thin credit histories, and limited performance data keep risk appetite low and solutions small.

**Blended risk-sharing was positioned as the most practical way to crowd in capital.** Panellists emphasised layered structures—guarantees, first-loss capital, and co-financing—to diversify risk and unlock larger pools of domestic and international finance.

**For MSMEs, adoption hinges on making payback visible in cashflow terms.** A repeated point was that lenders and MSME owners need clear, granular proof that savings can service EMIs, with credible metrics and reporting frameworks to build confidence over time.

**Affordability remains a binding constraint, even when credit risk is partially covered.** The discussion noted that guarantees may reduce lender risk but do not automatically lower the borrower's effective cost, limiting uptake where solutions require high upfront capex.

**Codification and reporting were framed as prerequisites for scale.** Participants highlighted gaps in defining and tracking what qualifies as "green" or "resilience" finance, which weakens planning, pipeline development, and accountability across the financial system.

**Long-term capital needs clearer climate-risk signals to enter infrastructure meaningfully.** Pension and insurance pools were seen as natural providers of patient capital, but constrained by limited tools to assess climate risk alongside credit risk, and by the need for credit enhancement.

**Insurance was discussed as important but downstream of risk reduction.** Mitigation measures—stronger standards, safer practices, and preparedness—were emphasised as critical complements to improving insurance products and coverage.

**A national resilience finance platform for MSMEs was proposed to coordinate capital and capabilities.** The idea was to bring DFIs, domestic institutions, banks, and global investors into a structured vehicle that can standardise approaches and scale deployment.

# Immersive Discussion - Inventing for Tomorrow: Rethinking Innovations for an Uncertain World

The immersive plenary *Inventing for Tomorrow: Rethinking Innovations for an Uncertain World* explored how India's innovation ecosystem must evolve to address rising climate, economic, and technological uncertainties. The discussion focused on strengthening the pipeline from research to deployment, fostering mission-driven innovation, and aligning public institutions, industry, and capital to deliver scalable, future-ready solutions.

## Speakers


**Mirik Gogri**
CEO, Spectrum Impact and Aarti Enterpr ises

**Prof. Abhay Karandikar**
Secretary, Department of Science and Technology (DST)

**Deepak Bagla**
Mission Director, Atal Innovation Mission

**Vikram Shroff**
Vice Chairman & Co-CEO, UPL

**Prof. Ashok Jhunjhunwala**
Indian Institute of Technology, Madras

## Moderator

**Jagjeet Sareen**
India Head, Dalberg Advisors

## Context

**Climate change and broader global disruptions are increasing uncertainty across India's most climate-sensitive systems particularly agriculture, public health, and water security.** As climate risks intensify and become less predictable, the costs of delayed or incremental responses rise sharply, especially for livelihoods and productivity in vulnerable regions. Strengthening the innovation pipeline for adaptation therefore becomes an economic and resilience imperative, not only a scientific priority.

**India's research base is substantial, and innovation outputs are improving, but the discussion highlighted persistent gaps between scientific discovery, field validation, and scaled deployment.** Low R&D investment and limited private-sector contribution constrain pace, while fragmented mandates and weak coordination slow translation into usable solutions. Regulatory uncertainty and insufficient early-stage risk capital further contribute to a situation where promising technologies remain stuck at proof-of-concept.

**The session examined how India can redesign its innovation ecosystem to translate science-led solutions from lab to field at speed and scale.** It focused on how research agendas can be better anchored in real-world climate-risk realities, how early-stage development and validation can be strengthened, and how financing and institutional mechanisms can be mobilised to accelerate adoption.

## Potential Opportunities and Challenges

### Key Opportunities

- **Leverage India's public agricultural R&D system** (ICAR, SAUs, KVKs, national missions) to build a mission-scale pipeline of deployable resilience solutions.
- **Meet rising adaptation demand in agriculture** through validated climate-resilient seeds, inputs, advisory services, and water and risk-management tools.
- **Orient startup and incubation ecosystems** (including AIM and university hubs) toward adaptation problem statements and rigorous field validation.
- **Structure public–private research partnerships** to align research outputs with farmer needs, regulatory pathways, and commercial viability.
- **Convert translation success into global leadership** by exporting affordable, locally grounded adaptation technologies across the Global South.

### Key Challenges

- **Bridge the early-stage "valley of death"** where adaptation innovations struggle to attract risk capital due to uncertain or long-term returns.
- **Strengthen extension and delivery capacity** so innovations can be absorbed and scaled uniformly across districts, especially in vulnerable regions.
- **Anchor innovation priorities in granular climate-risk realities** supported by stronger ground-level data and state-level coordination.
- **Reduce fragmentation across institutions and implementation systems** by strengthening feedback loops among ministries, agencies, researchers, and end users.

### Key Insights

The dialogue positioned innovation as a **resilience and competitiveness imperative** for India, rather than a standalone R&D agenda. Panellists noted that climate-era uncertainty across energy systems, agriculture, water, and health makes "business-as-usual" innovation cycles too slow. The implication was that India's ability to rapidly develop and deploy practical solutions will increasingly shape development outcomes and strategic autonomy.

**India's binding constraint is not idea generation but translation—the bridge from R&D to**

**commercialisation and scale.** Speakers argued that without deliberate support for prototyping, validation, and first-of-a-kind deployments, many technologies will remain stuck at proof-of-concept even when research quality is strong. This points to the need for funding and institutional support that explicitly targets the mid-stage path to adoption.

**The discussion highlighted an emerging policy shift toward more outcome-oriented funding and clearer pathways for private-sector R&D**. ANRF was framed as enabling solution-focused, multi-PI programmes, while the **₹1 lakh crore RDI Fund** was positioned as a structural instrument to bring industry—startups and established firms—into the national R&D effort. Panellists also emphasised that reducing administrative friction (including procurement flexibility and special rules) is essential if funding mechanisms are to match market and technology timelines.

**Complex climate technologies will not scale through isolated efforts neither a single lab nor a single startup can solve large interdependent challenges alone.** A consortia approach was positioned as necessary for segments such as storage and power electronics, particularly where India seeks to avoid persistent import dependence and compete on cost and quality. The implication is that funding, governance, and evaluation frameworks must reward collaboration across academia, startups, and industry rather than siloed, institution-bound projects.

**Financing constraints emerged as a practical fault line across the innovation lifecycle.** While early experiments can sometimes be supported through patient capital, the session underscored a gap in larger "risk cheques" required for scale trials and commercial readiness. Panellists pointed toward the need for dedicated instruments that can absorb technical risk, crowd in private capital, and fund the expensive middle stages between prototype and market adoption.

**The discussion also surfaced the importance of trust, incentives, and research integrity as innovation accelerators.** Speakers noted that poor-quality or unverified claims can damage credibility and slow adoption, especially when innovations intersect with regulation, trade, and public systems. Strengthening integrity mechanisms, alongside shifting the narrative from fear and constraint to aspiration and execution, was framed as essential for faster and more confident deployment.

**Finally, panellists linked ecosystem momentum to two accelerators: institutional platforms and technological discontinuities**. Atal Innovation Mission was framed as widening India's innovation base across schools, incubators, and deep-tech pipelines, while AI was cited as compressing learning cycles and enabling faster catch-up than earlier industrial transitions. The discussion closed with a forward-looking implication: if India aligns incentives, enables consortia, and unlocks scale capital, the next few years could deliver a step-change in how quickly innovations move from lab to field.

# Immersive Discussion – From Mandate to Impact: Governing for a Green, Resilient and Viksit Bharat

The immersive plenary session on "From Mandate to Impact: Governing for a Green Resilient, and Viksit Bharat" was held between Dr Shikha Meel (MLA, Rajasthan), Smt Anita Bhadel (MLA, Rajasthan), Shri Divya Raj (MLA, Madhya Pradesh), Shri Gaurav Pardhi (MLA, Madhya Pradesh), Dr Sandeep Pathak (MP, Rajya Sabha), and was moderated by Simran Babbar (Senior Correspondent, CNN).

## Speakers


**Dr Shikha Meel**
MLA, Rajasthan

**Smt Anita Bhadel**
MLA, Rajasthan

**Shri Divya Raj**
MLA, Madhya Pradesh

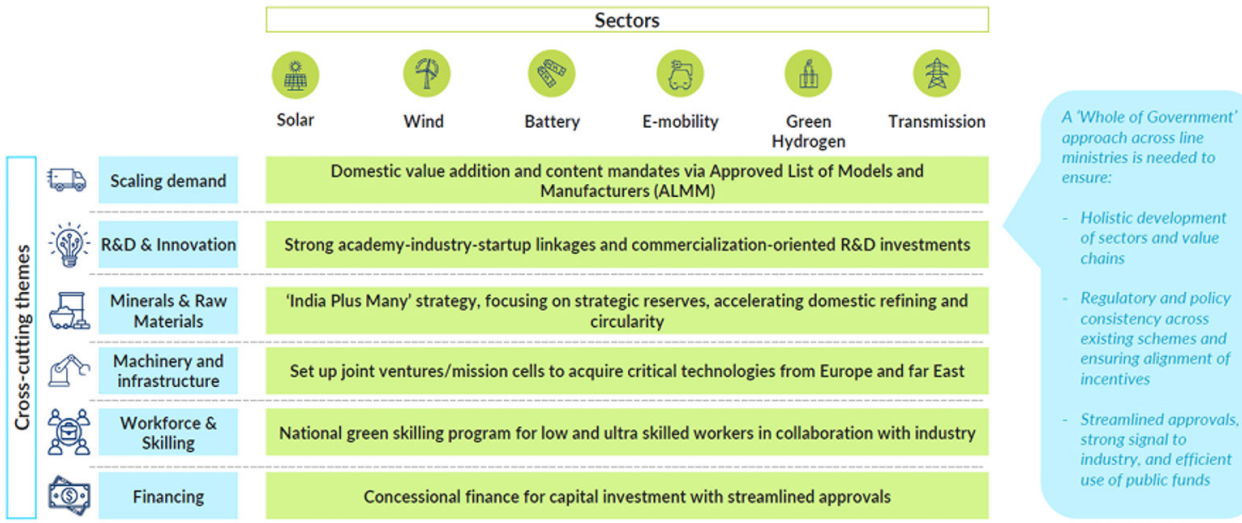
**Shri Gaurav Pardhi**
MLA, Madhya Pradesh

**Dr Sandeep Pathak**
MP, Rajya Sabha

**Moderator**
**Simran Babbar**
Senior Correspondent, CNN

## Context

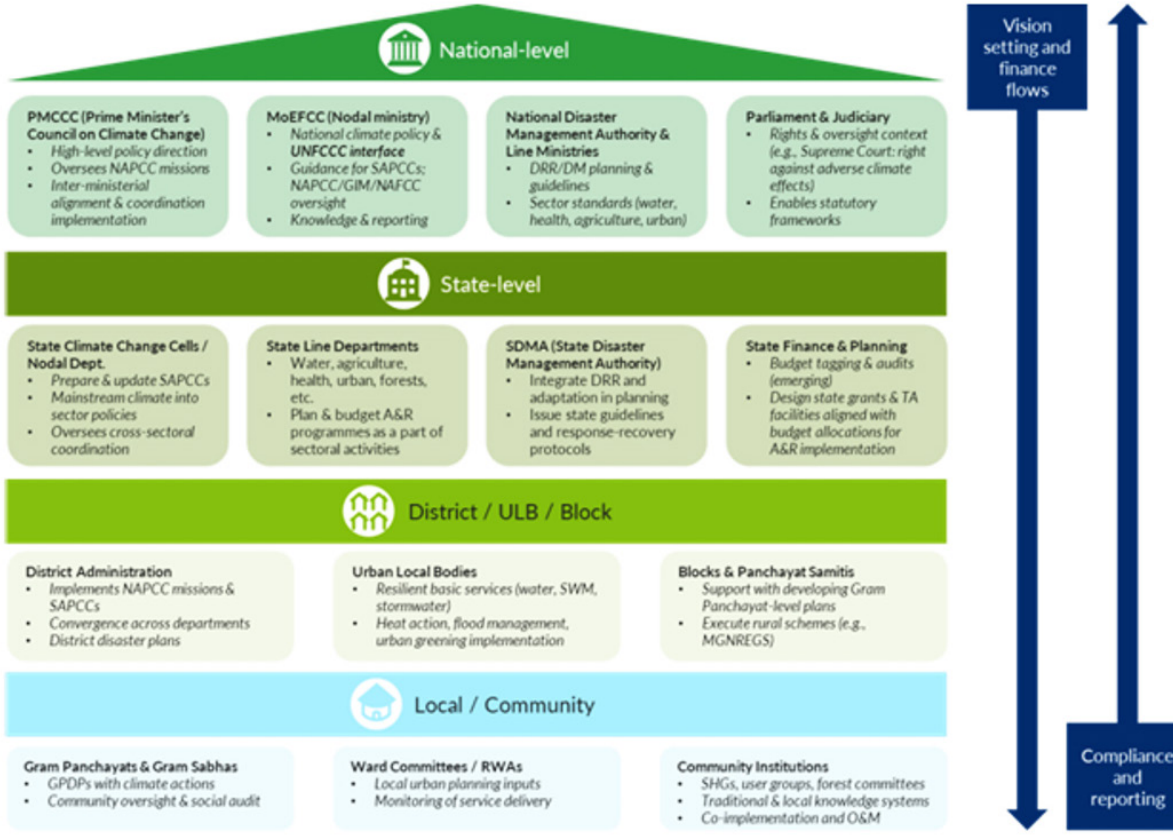
**India is entering a decisive decade in which the credibility of its green transition will be determined not by ambition alone, but by the country's ability to convert policy mandates into durable outcomes on the ground.** As India advances toward its Viksit Bharat 2047 vision, the convergence of clean manufacturing scale-up, climate resilience, and institutional effectiveness has emerged as a central governance challenge for the coming decade.




**Climate action is now firmly embedded within India's growth trajectory, with national commitments under NDC 1.0 already delivering early gains in renewable capacity and non-fossil power share**. At the same time, escalating climate shocks, infrastructure vulnerability, and execution bottlenecks underline the need for a governance architecture that can align mitigation, manufacturing, and adaptation priorities across Union, state, and local levels. Translating ambition into impact will depend on whether India can overcome fragmented mandates, strengthen institutional coordination, and deliver last-mile implementation at scale.

**The session was situated within this broader context, focusing on how governance reforms, political leadership, and institutional capacity can bridge the persistent gap between policy intent and delivery.** Drawing on the concept note's framing, discussions explicitly linked national climate commitments and manufacturing ambitions with state-level execution realities, highlighting the need for clearer role definition, transparent feedback loops, and execution-oriented institutional design. The governance challenge illustrated in *Exhibit B: Current mosaic of climate governance in India across all levels* provided a backdrop for the discussion, underscoring the risks of siloed decision-making and diluted accountability

*Exhibit B: A. Current mosaic of climate governance in India across all levels*




## Potential Opportunities and Challenges

### Key Opportunities

- **Position India as a global hub for climate-resilient cleantech manufacturing.** Strong domestic demand and a growing renewable base create an opportunity to scale solar, batteries, green hydrogen, EV components, power electronics, and grid technologies. Capturing value across supply chains can reduce import dependence, increase domestic value addition, and generate quality employment, provided climate resilience is embedded in industrial locations and logistics corridors.
- **Use NDC 2.0 and the National Adaptation Plan as a unified growth pathway.** Together, these frameworks can integrate mitigation, manufacturing, adaptation, and resilience into a coherent national strategy. They offer a basis to guide state-level sectoral pathways, unlock investment pipelines, and mainstream climate-risk considerations in industrial planning, infrastructure design, and urban expansion.
- **Deploy governance reform as a force multiplier for scale and preparedness.** Improved coordination across ministries, regulators, and states can shorten approvals, harmonise standards, and strengthen investor confidence. Mission-oriented governance models, including SPV-style mechanisms, can align incentives, reduce fragmentation, and enable time-bound execution.
- **Adopt a whole-of-government approach**

**across cleantech value chains.** Aligning energy, industry, mines, finance, skills, and commerce ministries allows simultaneous action on demand creation, R&D linkages, mineral security, infrastructure upgrades, green skilling, and concessional finance. This integrated approach improves regulatory consistency and accelerates end-to-end value-chain development.

### Key Challenges

- **Fragmented governance and weak intergovernmental coordination.** Cleantech manufacturing spans multiple Union ministries, while adaptation and resilience are dispersed across state departments and local bodies. The absence of a unified decision-making architecture leads to misaligned policies, delayed approvals, conflicting incentives, and diluted accountability.
- **Global competition and continued import dependence.** India remains reliant on imported machinery, components, and critical minerals across key cleantech segments. At the same time, industrial policies in China, the US, and Europe are reshaping global value chains, increasing competitiveness pressures.
- **Climate risks outpacing industrial adaptation.** Heat stress, flooding, and supply-chain disruptions are increasingly affecting industrial clusters, logistics, and labour productivity. Many new manufacturing zones and renewable hubs are located in high-risk districts, exposing capacity to operational disruptions without targeted resilience investments.
- **Policy inconsistency and unsequenced mandates.** Uncoordinated policy signals can create overcapacity, distort markets, and weaken investor confidence. Experience from solar manufacturing highlights the need for stable, sequenced, and harmonised policies across the full cleantech value chain.

## Key Insights

- **Execution, not policy design, is the binding constraint.** Participants repeatedly emphasised that India does not face a shortage of policy ideas or technical expertise. The primary challenge lies in execution—specifically in translating policies into outcomes through efficient institutions, transparent processes, and accountable delivery mechanisms.
- **Institutional efficiency and feedback loops are critical.** The discussion highlighted the absence of structured feedback mechanisms linking policy recipients, implementers, and policymakers. Participants noted that transparent, two-way feedback is essential to refine policies in real time rather than relying on infrequent course corrections.
- **Bureaucratic complexity undermines otherwise strong policies**. Panellists underscored that bureaucratic fragmentation and procedural delays often negate the impact of well-intentioned policies. Execution depends on administrative systems that are empowered, coordinated, and incentivised to deliver results rather than merely comply with process.
- **State-level implementation determines real outcomes.** Several interventions stressed that climate and clean-energy outcomes are ultimately realised at the state and local levels. Weak monitoring, limited coordination, and capacity constraints at these levels frequently prevent national schemes from delivering tangible benefits to communities.

- **Infrastructure gaps threaten clean-energy scale-up.** While renewable generation capacity is expanding rapidly, participants pointed to persistent deficits in transmission, distribution, storage, and grid resilience. Without parallel investments in enabling infrastructure, clean-energy ambitions risk falling short of their potential impact.
- **Domestic manufacturing faces competitiveness challenges.** The roundtable highlighted concerns around the cost competitiveness of domestic cleantech manufacturing, particularly in solar equipment. Continued dependence on imported components and price differentials with foreign suppliers were identified as structural barriers to scaling indigenous manufacturing.
- **Large-scale private investment remains uneven.** Participants observed that while smaller players are active in renewable projects, large industrial groups remain more heavily invested in conventional energy sectors. Aligning policy incentives to crowd in large-scale private investment was seen as essential for accelerating the green transition.
- **Public awareness and behavioural change are enabling factors.** Beyond infrastructure and policy, panellists emphasised the importance of public awareness, scientific temper, and behavioural change—particularly in areas such as water conservation, agriculture, and energy use. Education and outreach were seen as foundational to sustaining long-term climate action.
- **Political leadership sets the direction, institutions deliver the outcome.** The discussion converged on the view that political leadership is necessary to set ambition and direction, but institutional integrity and independence determine delivery. Strengthening institutions, insulating them from short-term pressures, and clarifying mandates were identified as prerequisites for moving decisively from mandate to impact.

# Immersive Discussion
# Powering the Economic Growth: The Union of Digital and Green

The immersive plenary *Powering the Economic Growth: The Union of Digital and Green* examined how the convergence of digital public infrastructure and green solutions can unlock inclusive, scalable, and resilient economic growth. The discussion focused on leveraging data, finance, and technology to accelerate climate action across sectors while strengthening productivity and access.

## Speakers


**Shri Goverdhan Singh Rawat**
Deputy Managing Director,
NABARD

**Shri Sanjeev Bikhchandani**
Founder and Executive
Vice-Chairman, InfoEdge

## Moderator

**Gaurav Gupta**
Global Managing Director,
Dalberg Advisors

**Dr Purvi Mehta**
Member, Board of Advisors, World Food Prize Foundation
Director, Board, Advanta Seeds
Senior Advisor, Global Centre for Adaptation

## Context

**India's next phase of economic growth will be shaped by how resilient and adaptive its systems become as climate risk accelerates.** Climate shocks are already imposing economy-wide costs, reducing labour productivity, disrupting supply chains, stressing cities, and exposing vulnerable communities to repeated losses. As India pursues the Viksit Bharat 2047 agenda, sustaining high growth will increasingly depend on the ability to climate-proof agriculture, infrastructure, cities, and public services at scale.

**India also sits at a distinct convergence point: climate urgency, digital maturity, and private-sector capability can be aligned to make resilience outcomes more measurable, investable, and deliverable.** India's **d**igital public infrastructure (DPI) has shown how interoperable rails can enable population-scale service delivery—creating scope to apply similar principles to adaptation and resilience.

Digital technologies, from AI-driven forecasting and GIS-based risk mapping to IoT-enabled systems, drones for monitoring and response, and DPI-backed platforms for early warning, insurance, and social protection, are already shaping how climate risks are anticipated and managed. Yet these solutions remain fragmented, constrained by weak integration with public systems, limited private investment, and unclear pathways to scale.

This session examined how India can leverage its **digital infrastructure** and private-sector technology leadership to translate digital capability into **system-wide resilience** across agriculture, cities, infrastructure, and vulnerable communities while reinforcing **mitigation, energy transition, and green industrialisation** outcomes.

## Potential Opportunities and Challenges

### Key Opportunities

- **Leverage DPI rails** to deliver resilience at scale by integrating climate-risk data, early warnings, transfers, insurance payouts, and advisories into interoperable platforms.
- **Build an investable private-sector space for adaptation** by applying product discipline and platform thinking to under-penetrated resilience markets.
- **Enable results-based resilience finance** by using AI, remote sensing, and data platforms to verify outcomes such as avoided losses and reduced vulnerability.
- **Position India as a Global South reference model** by demonstrating affordable, inclusive digitally enabled resilience and exporting platforms, standards, and solutions.
- **Move from pilots to system-wide delivery backbones** across agriculture, cities, infrastructure, and public services by stitching fragmented use cases into coherent infrastructure.

### Key Challenges

- **Avoid one-to-one "digital playbook" translation** where climate outcomes are context-specific, realised over long horizons, and dependent on institutions and behavior.
- **Create credible engagement pathways for private capital** by addressing weak commercial models, unclear procurement routes, and limited monetisation of outcomes.
- **Fix data quality and interoperability constraints** across states and sectors so resilience systems can rely on decision-grade climate, socio-economic, and geospatial data.
- **Strengthen local institutional capacity for adoption** so tools translate into response, targeting, and delivery—not just dashboards.
- **Prevent "technologies that scale but fail systemically"** due to weak integration with public systems and misalignment with local incentives and behaviours.

## Key Insights

**The discussion framed the digital–green intersection as an economic delivery agenda, rooted in India's competitiveness in digital and the need to translate that advantage into climate outcomes.** Panellists argued that the primary question is not whether tools exist, but whether India can build the enabling infrastructure—data, institutions, and delivery rails—so solutions move from pilots to population-scale impact. The implied priority is to define the "public goods" layer (registries, datasets, interoperable systems) that unlocks widespread innovation.

**A core insight was that resilience adoption depends on ground institutions as much as on technology.** NABARD emphasised that solutions are currently "few and far," and uptake is low unless community organisations—cooperatives, FPOs, SHGs—are capable delivery agents. Digitising cooperatives and improving governance and transparency were positioned as practical steps to make last-mile systems ready for new climate-resilience services.

**The discussion highlighted that digitising records or building platforms only matters if it changes outcomes for farmers through usable services, faster decisions, and tangible value.** The implication was to shift from "more data and more apps" toward purpose-led data systems designed around real decision points in production, risk, and markets.

**The conversation underscored trust and quality assurance as emerging constraints in the advisory ecosystem.** With widespread phone access and many agriculture apps already available, farmers increasingly face inconsistency and variable reliability rather than information scarcity. Panellists suggested that public investment should prioritise validation and quality control mechanisms so digital advisories reduce risk and are linked to institutional support, not left as standalone information flows.

**From an entrepreneurship and finance lens, the panel argued that climate-relevant solutions often combine software with physical systems and therefore face structural scaling barriers.** Climate tech was described as capex-intensive and frequently dependent on policy, regulatory support, or incentives—because what is individually rational can be collectively harmful (stubble-burning was used to illustrate that incentives must change, not messaging). Digital was framed as an enabler for monitoring and verification, but not a substitute for policy design and fiscal alignment.

**The discussion also highlighted that agri-tech and resilience-aligned models may create strong value but rarely follow venture-style "hockey-stick" trajectories.** Examples illustrated how trust-based advisory models can evolve into input marketplaces, and how warehouse aggregation plus credit linkages can improve price realisation—showing the importance of market linkages, conflict-of-interest reduction in advisory channels, and patient capital. The implication is that capital strategies must match agriculture's longer timelines and blended models, rather than expecting purely digital scaling dynamics.

# Keynote Address from Hon'ble Shri Santosh Sarangi, Secretary, Ministry of New and Renewable Energy


**Shri Santosh Sarangi, Secretary, Ministry of New and Renewable Energy (MNRE), Government of India**, delivered a senior official address at the Bharat Climate Forum 2026, reflecting on India's renewable energy journey and the policy, institutional, and market enablers that have driven rapid scale-up across deployment, domestic manufacturing, and citizen adoption.

**In his address, Shri Santosh Sarangi framed India's renewable energy expansion as a deliberate leapfrogging effort anchored in clear objectives and institutional execution.** Installed renewable capacity has grown from 76 GW in 2014 to over 257 GW today, now accounting for more than half of total installed power capacity, with solar capacity increasing nearly fifty-fold. Shri Sarangi emphasised that this progress reflects sustained policy clarity, competitive procurement, and mechanisms that reduced risk while maintaining cost discipline.

**Bridging trust deficits across the power ecosystem**

**emerged as a critical enabler of scale.** Institutions such as the Solar Energy Corporation of India, supported by payment security mechanisms and transparent bidding, helped align DISCOMs and developers, restoring confidence and accelerating deployment. Over time, the expansion of implementation agencies and replication by states further deepened market participation.

**Domestic manufacturing was positioned as essential to sustaining long-term ambition.** With targets of 500 GW of renewable capacity by 2030 and 1,800 GW by 2047, Shri Sarangi underscored that scale requires self-reliance across the value chain. Policy tools including PLIs, ALMM standards, and calibrated duties have catalysed investment, resulting in over 120 GW of module capacity and rapid expansion in cell, ingot, and wafer manufacturing.

**Energy storage and grid integration were highlighted as the next phase of system readiness.** Falling battery costs and record-low solar-plus-storage bids were cited as turning points for firm renewable power. Parallel investments in long-duration storage, grid-forming technologies, and digital tools, such as digital twins and distributed energy resource management systems, were identified as critical to managing intermittency at scale.

**Green hydrogen was framed as a strategic extension of India's manufacturing-led transition.** With a target of five million tonnes of annual production by 2030, India is simultaneously building electrolyser manufacturing capacity and anchoring domestic demand across refineries, fertilisers, transport, and shipping, positioning the country as a future global producer while generating skilled employment.

**Citizen participation was identified as a defining feature of India's clean energy model.** Programmes such as PM Surya Ghar and PM-KUSUM were highlighted for extending the transition to households and farmers, while agri-photovoltaic models were presented as solutions that expand deployment without land trade-offs.

**In closing, Shri Sarangi underscored India's renewable energy journey as a learning system that combines ambition with continuous refinement.** He reaffirmed confidence that strong institutions, adaptive policy tools, and coordinated action across government, industry, and citizens will enable India to consolidate its position as a global leader in clean energy deployment, manufacturing, and system integration.

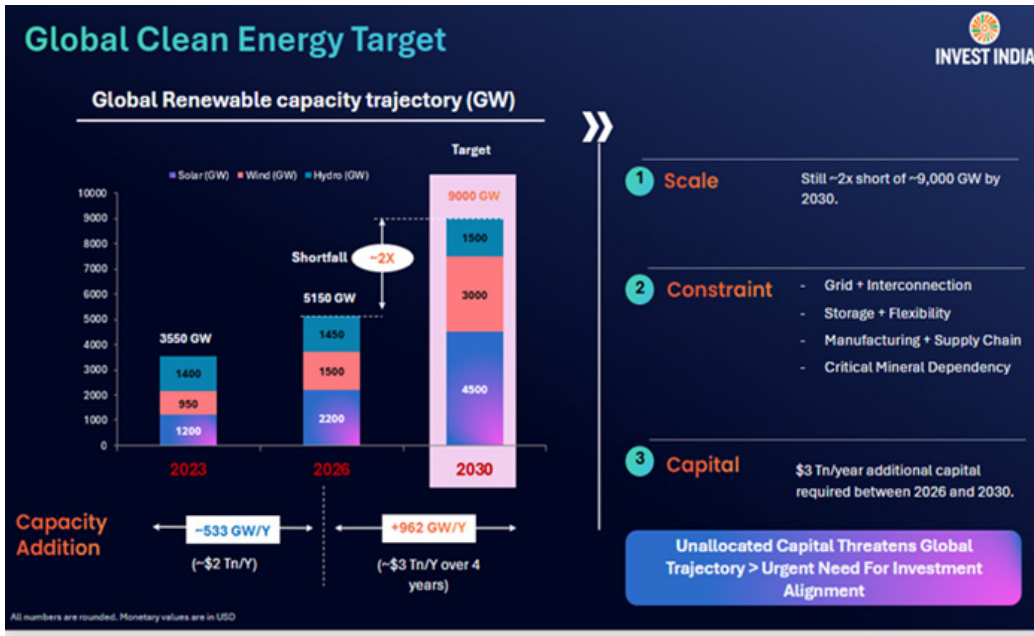
# Presentation on Cleantech Manufacturing Tech and Investment Accelerator


**Nivruti Rai** serves as Managing Director and CEO of Invest India, where she leads strategic investment facilitation and works closely with domestic and global firms across priority sectors. A**t the Bharat Climate Forum in New Delhi, she delivered a keynote-style presentation on a Cleantech Manufacturing Tech and Investment Accelerator,** positioning it as a practical vehicle to translate India's clean energy ambitions into investable, execution-ready pathways across the value chain.

Framing the moment through a long-run historical lens, she argued that the world's largest periods of wealth creation have consistently been tied to **step-changes in power availability and power-linked infrastructure**. Against this backdrop, she emphasised that the global clean energy transition is entering a phase where demand growth is likely to outpace earlier planning assumptions, particularly as emerging technology waves reshape electricity requirements. She illustrated this acceleration by contrasting the timeline of India's **500 GW renewables-by-2030** plan with the speed of technological scale in the AI era, suggesting that the power system must now prepare for demand shocks that were not fully anticipated when targets were set.

She placed the global transition challenge in quantitative terms, noting that while renewable capacity is rising, the world remains materially off-track. Current renewable levels and near-term trajectories, she argued, imply that global renewable capacity must effectively **double** within this decade to close the gap, requiring a step-up in annual additions and enabling infrastructure. She also underscored that annual power additions alone are an incomplete

measure, because variable renewables require complementary investments in **grid flexibility, storage, and system integration** to convert capacity into reliable delivered energy.




**A central message was that the transition will be won or lost in the "middle layer" of the system, grid and distribution, interconnection, and operational optimisation**. Drawing an analogy to the telecom sector's shift toward software-defined orchestration, she argued that the power sector needs a comparable leap in grid software, optimisation, and congestion management. She pointed to real losses already occurring due to insufficient connectivity and slow interconnection processes, highlighting that building generation without matching throughput can lock in curtailment and stranded capacity.

**Storage was presented as the second major hinge. Rai offered a planning heuristic—treat renewables as variable and size storage accordingly—arguing that scaling renewables without a commensurate storage pipeline will constrain reliability and slow adoption.** This, she noted, is not only a technology challenge but also a manufacturing and supply-chain challenge that requires political diplomacy, coordinated partnerships, and innovation across raw materials, power electronics, and component ecosystems. She further suggested that innovation often originates from suppliers, implying that India's strategy must stimulate R&D and manufacturing depth throughout the upstream chain, not only in end products.

**On clean molecules, she highlighted the strategic importance of green hydrogen, ammonia, and e-fuels for hard-to-abate sectors, while noting that cost remains prohibitive and will require structured pilots, learning curves, and demand aggregation.** She emphasised that closing cost gaps will depend on aligning technology readiness with execution capacity, and on creating revenue models that allow new value streams to emerge as variability and flexibility become central features of the power system.

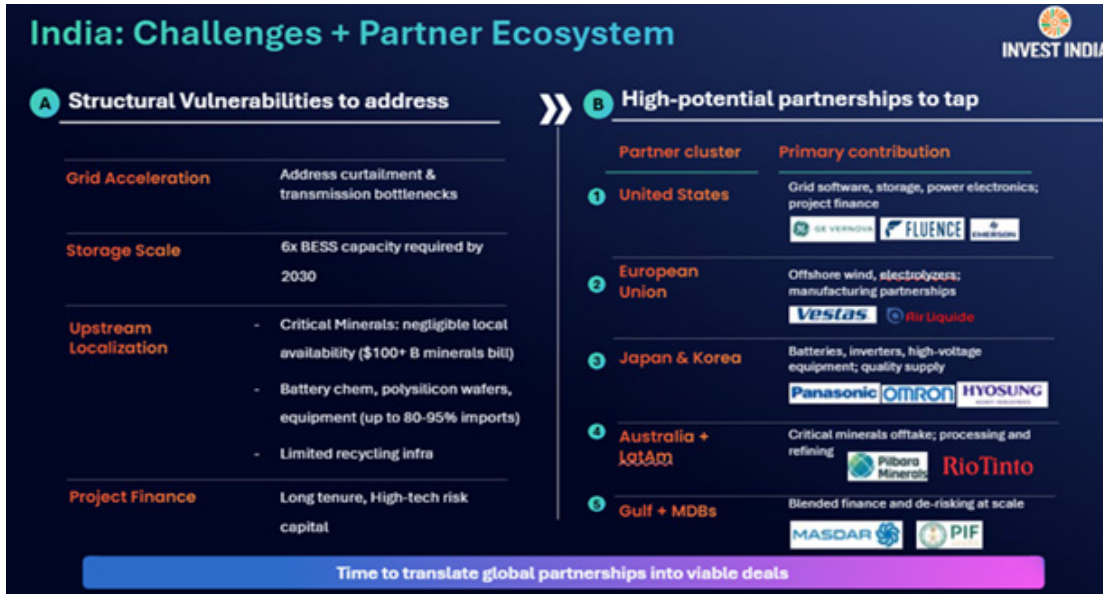
**Rai also drew attention to critical minerals and the structural risk embedded in concentrated refining capacity.** While acknowledging that many "rare earths" are not geologically rare, she stressed that extraction and refining capacity creates scarcity and geopolitical exposure. She argued that recycling must become a mainstream supply lever, noting the material intensity embedded in everyday devices and vehicles and the potential for recycling to

meet a meaningful share of demand. This framing linked circularity to energy security and industrial competitiveness, rather than treating it as an end-of-pipe sustainability measure.

The presentation repeatedly returned to the question of what makes the transition executable: **standardised interconnection**, faster and more digital approvals, and de-risking mechanisms that unlock investment. Rai suggested that cross-sector de-risking is essential, because the capital required is large, the technology mix is evolving, and investment remains concentrated in a small number of geographies. In this context, she highlighted the need to shift from fragmented projects toward **scale execution**, supported by policy coherence, flexible revenue models, and institutional capacity to run pilots into bankable platforms.

**She also outlined why India's demand trajectory amplifies urgency.** With electricity consumption per capita still well below advanced-economy levels, she argued that future growth will be driven by rising appliance penetration, cooling demand, industrial expansion, and data infrastructure. This was positioned as both a development imperative and a planning constraint: the transition must accommodate large increases in demand while keeping the system affordable, resilient, and increasingly clean.

A distinctive element of her remarks was the investment-acceleration approach: rather than describing gaps at a high level, she emphasised Invest India's mandate to **identify specific partner countries and firms** that can fill strategic needs across grid software, storage, offshore wind, electrolyzers, batteries, and high-voltage equipment, alongside mineral diplomacy with resource-rich regions. She stressed that mineral offtake arrangements are critical to unlock upstream development and refining, and that early public investment and blended finance are often necessary to protect early-stage risk and crowd in private capital.




**Looking ahead, Rai described a near-term roadmap focused on unlocking grid throughput, scaling storage manufacturing, building mineral offtake contracts, advancing industrial decarbonisation through green hydrogen and clean-heat pilots, and exploring instruments such as carbon contracts for difference.** She concluded by positioning the accelerator as an enabling backbone—connecting government, companies, investors, consumers, and manufacturers—and framing its objective as accelerating Atmanirbhar Green and Viksit Bharat through targeted partnerships that deliver investment, technology transfer, R&D collaboration, and value-chain connectivity at scale.

# Featured Speech & Immersive Discussion – Commitments to Collaboration: Aligning Global Partnerships or Climate Action


**Mohamed Nasheed**
Secretary-General, CVF–V20 Secretariat)

**Michael Steidl**
Head of Regional South Asia, EIB

**Ashish Khanna**
Director General, ISA

**Amit Prothi**
Director General, CDRI

**Moderated**
Sumit Chaturvedi.

**Hemang Jani**
Senior Advisor to the Indian ED, World Bank Group

**Anand Shah**
Partner-US, The Asia Group

The immersive plenary session on **'Commitments to Collaboration: Aligning Global Partnerships for Climate Action'** was held between **Amit Prothi** (Director General, CDRI), **Ashish Khanna** (Director General, ISA), **Mohamed Nasheed** (Secretary-General, CVF–V20 Secretariat), **Michael Steidl** (Head of Regional Representation to South Asia, EIB), **Anand Shah** (Partner-US, The Asia Group), and **Hemang Jani** (Senior Advisor to the Indian ED, World Bank Group), and was moderated by **Sumit Chaturvedi**.

## Context

**Global climate and industrial realignments are creating a time-bound opportunity for India to translate national climate ambition into global leadership through partnerships**. As major economies accelerate net-zero transitions and supply chains diversify, demand is rising for affordable and resilient clean-energy technologies including solar, storage, hydrogen equipment, and critical minerals processing particularly across developing economies where access gaps persist.

**India is increasingly viewed as a scalable, reliable hub for climate-aligned manufacturing and deployment.** Cooperation frameworks with partners across Europe and the Indo-Pacific are already converging around India's potential in areas such as offshore wind, smart grids, solar, storage, green cooling, batteries, and low-carbon technology goods. This positions India not only as a market, but as a potential anchor for diversified production networks that can serve the region.

**The ability of many Global South countries to absorb clean technologies at scale remains constrained by high upfront costs, limited concessional capital, weak risk-sharing mechanisms, and gaps in institutional capacity for planning, regulation, standards, and long-term operations**. Against this backdrop, India's South–South and triangular cooperation tools (including capacity building through ITEC) and multilateral platforms such as ISA, CDRI, and the Global Biofuel Alliance offer pathways to move from project-level support to system-level solutions. This session examined what it will take for India to align partnerships, financing pathways, and domestic readiness to support shared transitions through 2028 and beyond.

## Potential Opportunities and Challenges

### Key Opportunities

- **Position India as a Global South manufacturing hub** by scaling solar, batteries, cooling, and EV component value chains to supply affordable technologies.
- **Leverage South–South and triangular cooperation** to expand technology access through capacity building, technology transfer, and shared manufacturing models.
- **Showcase India's policy-plus-deployment model** by combining market scale and targeted industrial policy to offer a replicable climate-aligned growth pathway.
- **Use multilateral platforms to institutionalise solutions** through demand aggregation, standards, and financing mechanisms via **ISA, CDRI, and GBA**.
- **Strengthen upstream localisation** (e.g., wafers, cells, battery chemistries, **power electronics**) to reduce exposure to supply-chain shocks and improve competitiveness.

### Key Challenges

- **Bridge the scale-access gap** where many Global South markets face fragmented procurement, high logistics costs, and limited channels to buy at volume.
- **Ensure affordability under constrained fiscal space** given high upfront costs, weak domestic finance ecosystems, and limited concessional capital.

- **Build institutional capacity for adoption and O&M** where regulation, standards, planning capability, and operating systems remain uneven.
- **Align platform ambition with urgency** by mobilising larger pools of finance and strengthening delivery architectures across ISA/CDRI/GBA.

## Keynote Address

In her opening remarks, **Meenakshi Lekhi** framed climate action as a **"mandatory coalition"**, arguing that the issue has moved beyond choice and into the realm of collective responsibility. She contrasted coercive leadership with cooperative leadership, positioning India's approach as one rooted in **inclusion**, continuity of performance "**in spite of constraints**," and a values-based commitment to safeguarding the planet for future generations.

**She emphasised that partnerships must translate into implementation ready solutions, not only ambition.** Drawing from the preceding discussion on grids, she highlighted the urgency of tackling grid congestion and distribution efficiency, pointing to low-cost, high-tech solutions such as sensors and cameras already deployed in other contexts. On storage, she argued that India should expand beyond lithium and "rare" earth narratives toward homegrown alternatives—including sand batteries, air batteries, and vanadium-based systems—and called for financiers to back emerging Indian technologies and accelerate market creation.

**Lekhi also broadened the action agenda to include clean molecules (hydrogen, ammonia, and e-fuels) and the next phase of biofuels, including scaling ethanol applications beyond blending toward pharmaceutical and aviation-grade use cases.** She underscored that the transition must address both production and consumption, linking energy transition to Mission LiFE and the need for responsible consumption alongside responsible production.

**She also made a strong case that circular economy efforts must move beyond recycling toward plastic decomposition.** Citing work using pyrolysis and catalytic pyrolysis, she described a pathway to monetisable outputs (including furnace oil, carbon, and distilled water) and argued that such solutions should be operationalised across municipal systems. She concluded by stressing that climate action requires "global platforms to local action"—a landscape of shared roles rather than a portrait of individual efforts—and called for collaborations that carry solutions from grassroots to global partnerships.

## Key Insights

The discussion positioned global collaboration as a **strategic necessity** in a period of geopolitical fragmentation. Panellists suggested that climate progress will increasingly be driven by a **"coalition of the willing"** that can sustain financing, standards, and delivery even when parts of the global system slow down. The implication was that India's opportunity is to become a trusted convenor—aligning technology, finance, and implementation across partners.

**India's credibility in the Global South is anchored in execution at scale, particularly where outcomes are visible in lives protected and services delivered.** The CDRI perspective argued that India's advances in early warning and response show what is possible when technology and institutions are aligned—reducing fatalities even as climate hazards intensify. The implication was to embed resilient infrastructure as a development narrative and export India's capability through practical cooperation models.

**India can lead by solving Global South problem statements, not only by exporting capacity.** Examples included large-scale solarisation of agriculture, the integration of AI and energy to improve distribution and decentralised renewables, and next-generation deployment models such as building-integrated PV

for land-constrained contexts. The implication was to package solutions with standards, capability building, and financing pathways that partners can adopt quickly.

**Climate capital is increasingly shaped by where value accrues in supply chains.** The EIB perspective highlighted growing scepticism toward financing that ultimately reinforces single-country dependence, and pointed to Europe–India collaboration as a way to improve bankability while diversifying supply chains. This strengthens the case for joint work on grids, storage, and critical raw materials—including processing and recycling—where mutual resilience can be built.

**A Global South viewpoint stressed that partnership must move from extraction to value addition in partner countries.** Nasheed argued that simply buying raw materials reproduces old patterns; instead, partnerships should build local processing, capabilities, and economic outcomes while pursuing low-carbon development. He also suggested expanding revenue pathways such as Article 6 carbon credits for farmers, implying that climate cooperation should be designed around tangible income and development co-benefits.

**From the multilateral perspective, the discussion suggested that MDBs should be treated as de-risking and market-creation platforms, not only as sources of capital.** Hemang Jani emphasised that India is increasingly seen as a platform country that can help deploy clean energy and resilience solutions across the Global South, but that delivery will depend on domestic readiness—inter-ministerial coordination, state-level capacity, and a credible project pipeline. The implied action was to align domestic systems so global partnerships can translate into bankable, scalable programmes.

**Panellists converged on the view that a leadership vacuum does not persist and that India is well placed to fill it if collaboration becomes operational rather than rhetorical.** The discussion suggested that India's differentiator is the ability to combine low-cost innovation, scalable delivery, and partnership-minded diplomacy. The implication is to turn the next COP cycle into an execution milestone—using coalitions to move solutions from grassroots to global with credible pipelines and shared standards.

# Valedictory Ministerial Address from Hon'ble Shri Pralhad Joshi


**Shri Pralhad Venkatesh Joshi, Union Minister for New and Renewable Energy, and Minister of Consumer Affairs, Food and Public Distribution, Government of India**, delivered a valedictory keynote address at the Bharat Climate Forum 2026, articulating India's ambition to anchor its energy transition in domestic cleantech manufacturing while positioning the country as a trusted global hub for clean technology and industrial innovation.

**In his address Shri Pralhad Joshi described the past decade as a turning point in India's energy journey**, marked by sustained political commitment and rapid progress across renewable energy, emerging clean technologies, and domestic manufacturing—signalling India's shift from a large clean energy market to a global hub for clean technology manufacturing and innovation.

**Looking ahead, Shri Joshi underscored that the next phase of India's energy transition must be anchored in strong domestic manufacturing capability**, supported by the National Manufacturing Mission and rising investment across the clean energy value chain. He emphasised that building resilient, end-to-end manufacturing ecosystems is central to meeting domestic demand while serving global markets, and that India's approach—rooted in Atmanirbhar Bharat yet outward-looking—combines domestic capability-building with international collaboration on technology, trade, and innovation to create competitive, transparent, and trusted clean energy value chains.

**Shri Joshi framed the Bharat Climate Forum as a platform advancing India's vision for sustainable growth and global climate leadership,** marking the launch of the Blueprint for India's Cleantech Manufacturing Ambition as a strategic compass aligning national manufacturing priorities with global climate responsibilities. He highlighted the blueprint as a clear and actionable roadmap to accelerate this ambition, outlining its focus on the core enablers required for implementation including access to raw materials, innovation and R&D infrastructure, capital and financing tools, skill development, and industrial readiness, while establishing the foundations for resilient supply chains and coordinated national action.

**In closing, Shri Joshi underscored that the clean energy transition is ultimately about trust, scale, and shared prosperity**. He called for collective effort and unity of purpose to translate the blueprint into tangible outcomes for jobs, growth, and global leadership, reaffirming India's readiness to lead in building a clean energy future for itself and for the world.

# Curtailment Crisis in High Renewable Energy States: Insights from Rajasthan


## Context

Rajasthan has emerged as one of India's leading renewable energy hubs, but is now confronting a transmission-linked curtailment crisis that is testing the credibility of rapid clean energy scale-up. As annual renewable additions accelerate, the ability to synchronise generation commissioning with evacuation readiness is becoming a binding constraint—shaping project viability, investor confidence, and grid stability across high-renewable states.

The immediate challenge in Rajasthan is driven by a structural mismatch between operational renewable capacity and available evacuation margin. The state has approximately 23 GW of operational renewable energy capacity, while the available transmission evacuation margin is approximately 18.9 GW. This gap has translated into the near-complete restriction of 4,289 MW of commissioned renewable energy capacity operating under the Temporary General Network Access (T-GNA) framework during peak solar hours, despite physical connectivity to the grid.

The situation has been compounded by delays and under-delivery in expected transmission relief. Following the commissioning of the 765 kV Khetri–Narela transmission line, incremental evacuation

margin increased by only around 600 MW, substantially below prior expectations. As a result, 26 commissioned projects are reported to be affected—many of which met connectivity timelines but are still compelled to inject power under T-GNA due to delays in associated transmission infrastructure.

The implications extend beyond lost generation. Prolonged restriction erodes cash flows, increases uncertainty around debt servicing, and weakens confidence precisely when India's transition requires sustained private capital at scale. Grid operations also remain suboptimal, as newly commissioned plants equipped with static VAR generators and harmonic filters are often unable to contribute either energy or system-support services. The roundtable was convened to identify practical operational and policy reforms that can reduce unnecessary curtailment, prevent stranded capacity, and strengthen planning credibility as renewable capacity expands rapidly.

### Potential opportunities and challenges

The opportunities for addressing transmission-related curtailment in high renewable energy states in India include:

- Deploy Special Protection Schemes (SPS): Use SPS to manage N-1 contingency risks dynamically and reduce broad, pre-emptive restrictions by limiting generation shedding to specific events.
- Adopt interim allocation frameworks to spread risk: Operationalise equitable approaches—such as a T-GNA-only mechanism for new assets until margins are clarified—to avoid concentrated financial harm on a subset of commissioned projects.
- Improve utilisation of existing corridors through Dynamic Line Rating: Apply Dynamic Line Rating to enable corridors to operate closer to physical limits while maintaining grid security, expanding effective evacuation headroom.
- Reallocate unused GNA margins in real time: Create protocols to reassign unused General Network Access capacity during low-generation periods or seasonal shifts to improve evacuation for T-GNA projects.
- Strengthen commissioning and transmission sequencing: Align award/commissioning timelines with transmission readiness to reduce stranded capacity and improve bankability of new build-out.

The challenges to addressing these opportunities exist across multiple areas:

- Persistent mismatch between build-out speed and transmission lead times: Generation can scale faster than evacuation infrastructure, making congestion a recurring outcome unless planning is front-loaded.
- Low transparency on future margin enhancements: Limited visibility on when and how evacuation margins will expand increases planning uncertainty and elevates perceived system risk for developers and lenders.
- Rising project viability and capital confidence risks: Extended restriction undermines cash flows and debt servicing, weakening investor confidence at a time of high capital requirement for national targets.
- Suboptimal grid operations despite plant-level readiness: Even where plants invest in grid-support equipment, restrictions prevent contributions to energy delivery and ancillary stability benefits.
- Fragmented coordination across planning, regulation, and operations: Gaps between agencies and timelines can leave commissioned assets stranded under interim connectivity arrangements, prolonging congestion impacts.

## Moderators and Participants

| | |
|---|---|
| Moderator | Shri Subrahmanyam Pulipaka, Chief Executive Officer, National Solar Energy Federation of India |
| Participants | Smt. Anita Bhadel, Member of Legislative Assembly (MLA), Rajasthan |
| | Shri Rohit Bohra, Member of Legislative Assembly (MLA), Rajasthan |
| | Shri Pankaj Batra, Senior Advisor, Integrated Research and Action for Development; Former Chairperson, Central Electricity Authority |
| | Dr Ashvini Kumar, Shakti Sustainable Energy Foundation |

## Key Insights

On "curtailment", participants clarified that the binding issue is congestion and evacuation constraints. The discussion noted that Rajasthan's early solar build-out did not face meaningful restriction, but constraints emerged as midday solar peaks began to outstrip available demand and evacuation capacity. Participants also observed that legacy PPAs did not initially anticipate these events, after which compensation clauses were introduced—yet claims have rarely been formally invoked, with constraints often managed through informal coordination between developers and DISCOMs.

On the pace of scale-up, participants highlighted a widening mismatch between ambition, awards, and grid readiness. The roundtable pointed to the acceleration in annual renewable additions—from single-digit gigawatts toward much larger volumes—as creating a pipeline where large numbers of LOAs and connectivity allocations are issued rapidly. The discussion suggested that the resulting mis-sequencing—projects without PPAs, allocated grid capacity without commissioning, or commissioned assets without usable evacuation—has become a core driver of operational stress.

On coordination failures, the discussion emphasised that planning fragmentation is now a system risk. Participants repeatedly returned to the need for tighter alignment between implementing agencies, state planning, and transmission build-out, arguing that "the gap" can be shortened through better coordination rather than treated as an unavoidable by-product of scale. The implicit message was that Rajasthan's experience should be used to redesign sequencing rules so awards, PPAs, connectivity, and evacuation commissioning move in lockstep.

On political economy, legislators stressed that concentrated siting is generating visible local costs without commensurate local gains. The discussion raised concerns that large solar parks concentrated in a few districts are linked—locally—to tree cutting, loss of vegetation, and rising heat stress, alongside claims of limited state revenue and limited employment benefits for affected communities. Participants argued that the distribution of benefits and burdens is becoming a legitimacy constraint, not only an environmental issue, and that deployment strategies must demonstrate clearer development value for the state and host districts.

On land and ecology, participants underscored that

tree cutting for solar is not a defensible trade-off. The roundtable rejected the premise that renewable expansion must come at the cost of forested or vegetated land, with participants calling for solar deployment on degraded or low-ecological-sensitivity land. The discussion also surfaced practical mitigation options—such as air-jet or robotic cleaning to reduce water use—but stressed that safeguards require enforceable planning rules, not voluntary measures.

On evacuation planning, participants stressed that transmission timelines structurally lag solar timelines—and must be front-loaded. The discussion observed that solar can be developed in roughly a year, while transmission systems often take multiple years, making advance planning the decisive lever to reduce congestion. Participants pointed to planned renewable zones as a workable model—where transmission is built first and generation follows—contrasting this with more open-ended bidding approaches that allow projects to locate in dispersed patterns that complicate evacuation and heighten ecological conflict.

On storage, participants noted that regulatory change is opening a pathway to shift delivery beyond solar hours. The discussion referenced a recent amendment enabling "night-time connectivity" at sites with day-time connectivity, allowing developers to install storage and use the same grid interface beyond daytime peaks. Participants noted that storage can be installed quickly once approvals are secured, and suggested that commercial design and uptake—rather than technical feasibility—will determine whether storage meaningfully reduces congestion stress.

On rooftop solar and affordability, participants flagged that consumer economics and delivery design remain weak points. The roundtable noted that rooftop solar uptake in Rajasthan was perceived as slow, with participants attributing this to affordability constraints, scheme design, and uneven awareness and financing access. The discussion suggested that distributed solar will not scale through intent alone—its adoption will depend on workable household financing and implementation capacity, especially for consumers currently dependent on subsidised or free electricity arrangements.

On the way forward, the roundtable converged on a "holistic approach" as the defining requirement for Rajasthan. Participants argued that Rajasthan can remain a flagship solar state only if deployment is planned across the whole state—linking land-use strategy, evacuation build-out, storage integration, and local development outcomes. The closing emphasis was that renewable scale-up must be treated as an integrated infrastructure-and-development programme, rather than a series of disconnected project awards.

# Decongesting the Grid: Managing Concentration and Import Risk in India's Transmission Sector

## Context

According to a document from 9 January 2026, India's clean energy transition is now constrained as much by the grid's ability to *perform* as by its ability to *expand*. Decongesting the grid has become a strategic priority—linking renewable integration, energy security, and domestic industrial capability in a single reform agenda.

India's power transmission sector is entering a decisive phase as renewable capacity becomes more geographically concentrated, variability increases, and new generation is commissioned farther from load centres—placing disproportionate stress on interstate corridors. The investment scale is substantial: the Central Electricity Authority has outlined ~₹2.44 lakh crore of interstate transmission investments by 2032, including ~76,787 ckm of lines and ~480 GW transformation capacity. HVDC is intended to expand sharply, with India intending to double HVDC capacity to ~66 GW by 2032 to support remote renewable corridors (including Rajasthan, Gujarat, Ladakh), offshore wind connectors, and future cross-border trade.

A widening pace mismatch between renewable commissioning and transmission delivery is already translating into operational stress. Renewable plants can be built in 12–18 months, while ISTS projects typically take 3–5 years end-to-end—creating conditions for stranded generation and curtailment when corridor readiness slips. Rajasthan was highlighted as a visible indicator of this mismatch, with ~4 GW curtailed between March–August 2025 and curtailment peaking above 50% in August.

The roundtable located congestion and delay in a linked set of structural constraints—execution delays, market concentration, and import dependence in critical HVDC components—alongside the system-operational challenge of managing variability. Multiple ISTS schemes due in FY 2024–25 missed timelines; Rajasthan SEZ evacuation packages were cited as experiencing 15–24 month delays, with corridor slippages cascading across entire renewable energy zones. Market concentration was framed as an execution-bandwidth and redundancy risk: PGCIL continues to secure ~50%+ of ISTS projects by tariff value over FY21–FY25 and controls ~84% of inter-regional capacity.

In parallel, the next phase of grid build-out is becoming increasingly HVDC-heavy, yet India continues to import ~50% of HVDC substation equipment by cost—especially converter valves and DC switchgear—reflecting concentrated global know-how and a narrow supplier base. Participants noted that this import reliance creates persistent strategic vulnerability, exposing projects to price shocks, lead-time risks, and geopolitical supply disruptions precisely as corridor delivery becomes time-critical for renewable evacuation.

## Potential opportunities and challenges

The opportunities for Decongesting the Grid: Managing Concentration and Import Risk in India's Transmission Sector in India include:

- Modernising planning toward performance outcomes: Shifting transmission planning from static capacity adequacy to system performance—explicitly accounting for variability, ramping needs, and congestion under high renewable penetration—can reduce curtailment risk as renewables scale.
- Embedding storage as a system and transmission-support asset: Formal recognition of storage within planning frameworks—paired with clarity on ownership models and cost recovery—can enable congestion management and transmission deferral where appropriate.
- Reaffirming competitive neutrality in ISTS procurement: Re-establishing TBCB as the default route for new ISTS builds, while tightening RTM/cost-plus exemptions to exceptional public-interest cases with published justifications, can strengthen confidence in market structure and widen participation.
- Strengthening institutional neutrality in planning and allotment: Ensuring CTUIL's functional independence from PGCIL through stronger governance autonomy and statutory neutrality audits can reduce perceptions of overlap in planning and bid coordination.
- Aligning procurement with delivery capability: Replacing pure L1 mechanisms with QCBS (30–40% technical, 60–70% tariff), alongside authority-led RoW facilitation and deeper access to capital instruments, can better reward execution credibility and system reliability.
- Creating predictable demand pull for HVDC indigenisation: Publishing a 10–15 year HVDC project roadmap and a 10-year component-level demand outlook, supported by standardised HVDC templates, can aggregate demand and enable domestic OEMs to invest in capability upgrades.
- Building an indigenous HVDC ecosystem across components, R&D, and skills: Component-focused PLIs linked to phased Minimum Local Content requirements, an industry-led R&D pipeline (including ANRF support), and a dedicated skilling pipeline via Centres of Excellence and upgraded NPTI curricula can reduce import dependence in high-value substation equipment.

The challenges to addressing these opportunities exist across multiple areas:

- A persistent RE–ISTS sequencing mismatch: With 12–18 month renewable construction timelines versus 3–5 year ISTS delivery cycles, corridor readiness slippage can rapidly translate into stranded generation and systemic curtailment.
- Systemic execution delays in critical evacuation packages: Delays such as the 15–24 month slippages in Rajasthan SEZ evacuation packages can cascade across entire renewable energy zones when a small number of corridors slip.

- Limited redundancy under high market concentration: Continued concentration of awards (~50%+ of ISTS projects by tariff value) and control of inter-regional capacity (~84%) centralises execution risk and limits redundancy as project concurrency increases.
- Ambiguity in RTM exceptions and allotment criteria: RTM availability for "strategic/complex" projects without consistently articulated eligibility criteria sustains perceptions of overlap and weakens confidence in competitive neutrality.
- Import dependence in critical HVDC substation components: Importing ~50% of HVDC substation equipment by cost—especially converter valves and DC switchgear—exposes projects to price shocks, long lead times, and geopolitical supply disruptions.
- Weak demand visibility and standardisation for domestic OEMs: Project-by-project design variability and limited component-level demand outlooks erode scale economics, slowing investment in high-value domestic manufacturing capability.
- Fragmented R&D and limited testing infrastructure at ≥400kV: The absence of a deployment-aligned national HV transmission R&D agenda, alongside limited testing infrastructure, can delay indigenisation even where policy intent exists.

## Moderators and Participants

| | |
|---|---|
| Moderator | Mr. Debi Prasad Dash, Co-founder and Executive Director, Netzero Energy Transition Association (NETRA) |
| Participants | Shri Dhanendra Kumar – Former Secretary, Government of India; Former Executive Director, World Bank; Founding Chairman, Competition Commission of India |
| | Shri Pankaj Bhatra – Former Chairperson, Central Electricity Authority (CEA); Senior Fellow, IRADE |
| | Shri Sanjeev Agarwal – Founder & Chairman, AXA Climate (Renewable power developer – solar and wind) |
| | Shri Saurabh Vyas – Founder & Chairman, Solar91 (Independent Power Producer) |
| | Shri Sanil Namboodiripad – COO, IndiGrid; Formerly with NTPC, Reliance, Sterlite Power; Former MD, gas-based power plant |
| | Smt. Anita Bhadel – Member of Legislative Assembly, Ajmer, Rajasthan |
| | Shri Rohit Bohra – Former Member of Legislative Assembly, Rajasthan |
| | Shri Sagar Kumar – Founder, Niti Sara (Energy management and supply-chain technology platform) |
| | Shri Anup Kumar – Senior Vice President, Avant Garde Energy; Former Chief Engineer (Transmission & Evacuation) |
| | Mr. Rasmus Veldt – Energy Counsellor, Danish Embassy (India–Denmark energy cooperation) |
| | Mr. Matt Webb – Associate Director, Global Clean Power Diplomacy, E3G |

## Key Insights

Transmission bottlenecks were framed as system-design failures. Participants noted that while early curtailment was driven by physical shortages, newer constraints reflect temporal mismatches between renewable generation and demand, inflexible operations, and limited ability to dynamically route or absorb surplus power. The discussion highlighted that planning norms must shift from peak-capacity assumptions toward performance metrics that incorporate variability, ramping, and congestion management.

Storage was positioned as a transmission-support resource requiring formal rules. Participants highlighted that storage is increasingly being used to absorb surplus renewables, manage congestion, and improve reliability in weak grid areas—effectively performing transmission-support functions. The discussion noted that recognising storage as a system asset, with clear frameworks for planning treatment, ownership, and cost recovery, is necessary to prevent inefficient deployment and unlock transmission-deferral value.

Competition was treated as an execution-capacity and innovation lever. Participants emphasised that concentration has enabled scale and coordination, but now risks execution bottlenecks, limited redundancy, and heightened sensitivity to delays as project concurrency rises. The discussion highlighted the need to diversify the developer base—while retaining public-sector strengths—to mobilise private capital, accelerate delivery, and support faster adoption of new technologies as transmission digitises and integrates flexibility resources.

Procurement reforms were linked to reliability and transparent accountability. Participants noted that as project complexity increases, system performance becomes as important as asset delivery, requiring clearer criteria for project allotment and reduced ambiguity in exceptions frameworks. The discussion highlighted measures such as reaffirming TBCB as the default route, tightening RTM exemptions with published justifications, and strengthening CTUIL's functional independence to reinforce competitive neutrality.

Quality-weighted selection was seen as necessary for timely delivery. Participants highlighted that tariff-only selection can underweight execution credibility when timelines are system-critical. The discussion pointed to the value of moving beyond e-reverse/L1 toward QCBS structures (30–40% technical, 60–70% tariff), combined with RoW facilitation and improved access to risk-mitigation and financing channels, to align procurement incentives with delivery outcomes.

HVDC import dependence was framed as a strategic and supply-chain risk. Participants underscored that importing ~50% of HVDC substation equipment by cost—particularly converter valves and DC switchgear—creates exposure to price shocks and long lead times, and concentrates supply in a narrow set of global OEMs. The discussion highlighted that addressing congestion and delivery risk requires treating indigenisation as a system enabler, not only an industrial objective.

Long-term pipelines and standardisation were positioned as the anchor for OEM investment. Participants emphasised that domestic manufacturing upgrades require demand certainty and reduced design variability to build scale economics. The discussion highlighted publishing a 10–15 year HVDC project roadmap and a 10-year component-level demand outlook, alongside standardised HVDC templates, to convert India's HVDC pipeline into a predictable market pull for domestic OEMs.

Capability-building was linked to R&D, testing, and skilling systems. Participants noted that indigenising high-value HVDC substation equipment will require an industry-led R&D pipeline supported by enabling

institutions, complemented by shared testing/certification infrastructure and streamlined standards/approval pathways. The discussion also highlighted dedicated skilling pipelines—via Centres of Excellence and upgraded NPTI curricula—to supply manufacturing and commissioning talent at the scale required.

International experience was framed as adaptable operational learning. International participants and think tanks shared approaches on flexibility planning, grid codes, and market mechanisms used in other systems. The discussion highlighted structured cooperation focused on regulatory learning and technical standard-setting, with adaptation to India's federal structure and system scale.

The roundtable converged on a shift to performance-driven transmission. Participants underscored that the next phase requires modernised planning frameworks, explicit recognition of storage's system role, and stronger coordination across institutions to reduce curtailment and improve reliability under high renewable penetration. The discussion further highlighted that a broader, more competitive transmission ecosystem—paired with long-term project visibility and domestic OEM capability-building—will be central to reducing import risk and accelerating technological advancement.

# High level discussion on SIDS India partnership

| | |
|---|---|
| Moderator | Shri Amit Jain, Global Lead on Storage and Senior Energy Specialist, World Bank |
| Participants | H.E. Mr. Neeraj A. Sharma, Honorary Consul General, Republic of Palau |
| | H.E. Mohamed Nasheed, Secretary-General, Climate Vulnerable Forum-V20 Secretariat and Former President of Maldives |

## Key Insights

The discussion emphasised that SIDS are economically viable and development-ready despite extreme climate exposure. Participants highlighted that small island economies can sustain prosperity when ocean resources, tourism, and local value creation are managed strategically, even as climate risks intensify.

Nature-based adaptation was underscored as a cost-effective resilience strategy when paired with better design standards. The dialogue highlighted how ecosystem approaches—such as reef restoration and mangroves—can deliver protection at a fraction of the cost of hard infrastructure, while poorly designed legacy assets can worsen erosion by disrupting natural systems.

Structured risk mitigation was identified as critical to making small-scale projects bankable. Aggregating fragmented demand, establishing payment backstops, and deploying layered guarantees were shown to significantly improve investor participation and reduce tariffs, creating replicable models for scaling clean energy in small systems.

Grid readiness and systems planning were framed as binding constraints on renewable expansion in small economies. Experiences across island and coastal systems reinforced that without investment in transmission, integration capacity, and storage, renewable deployment can quickly outpace grid stability and lead to curtailment.

Governance and legal certainty were positioned as central enablers of climate finance. Clear contracts, credible dispute resolution, and protections around currency convertibility were highlighted as essential for attracting private capital and reducing perceived macro and policy risk.

Capability-building was highlighted as the foundation of durable SIDS–India partnerships. The discussion stressed that long-term impact depends on developing local skills, operations capacity, and implementation ecosystems—ensuring that assets can be operated, maintained, and scaled locally rather than remaining dependent on external support.

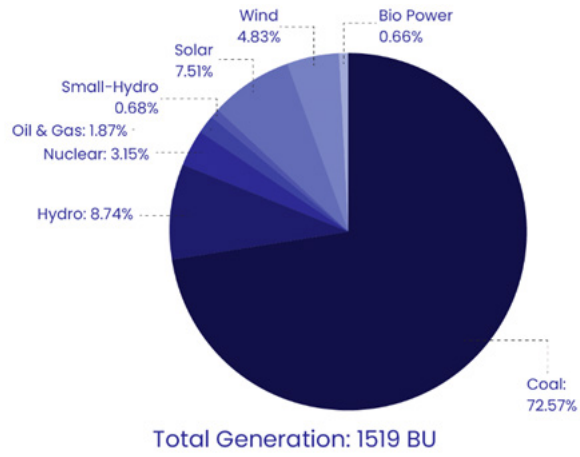
# Enabling the Next Wave of Nuclear Energy: Policy Pathways for India's SMR Revolution


## Context

Nuclear energy is positioned to move from a marginal contributor in India's power mix to a strategic pillar of the country's decarbonisation and energy-security pathway. With India's HDI-linked electricity demand projected to rise sharply over the coming decades, the system requirement is not only additional clean generation, but firm, round-the-clock supply that strengthens grid stability as variable renewables scale.

India's current starting point underscores both the urgency and the transition challenge: as of 2025, installed nuclear capacity is ~8 GW and nuclear accounts for roughly 3% of national electricity generation, as illustrated in *Exhibit* A (power generation mix as of January 2025). Against the government's longer-term projection of nuclear reaching around 11% of India's electricity mix by 2070, the policy question has shifted from whether nuclear expands to how it can expand at the pace required—without diluting safety, sovereignty, and public accountability.

Exhibit A: Power genertion mix as of January 2025




Within this context, Small Modular Reactors (SMRs) were positioned as a complementary pathway to large-reactor deployment. Participants noted that conventional projects have long lead times (from site approval to commissioning), and that large reactors are often ill-suited for off-grid, industrial, and other use cases requiring highly reliable onsite power. SMRs, by contrast, offer a modular, factory-enabled construction approach and smaller footprints that can accelerate deployment timelines and enable new applications—particularly where land constraints, grid congestion, or specialised demand profiles make conventional options less viable.

The roundtable was also anchored in a rapidly evolving policy and market landscape. India's 2025–26 Union Budget earmarked ₹20,000 crore for indigenous SMR development and signalled an intent to commission at least five SMRs by 2033, while public-sector actors have begun exploring deployment pathways including repurposing retiring coal-plant sites. At the same time, global SMR activity has expanded materially—creating both learning opportunities and competitive pressures around licensing models, supply-chain development, and bankable project structures. The discussion emphasised that India's ability to convert ambition into executable deployment will depend less on technology narratives and more on governance readiness: clear legal pathways, credible regulatory systems, workable liability and insurance arrangements, and investment conditions that preserve India's strategic control over sensitive nuclear domains.

## Potential Opportunities and Challenges

The opportunities for enabling the next wave of nuclear in India include:

- Unlocking private capital through liability reform: Establishing predictable, contract-bound supplier exposure—aligned with international norms—can reduce perceived open-ended risk and enable private and foreign participation while maintaining operator responsibility and public protection.
- Meet surging data centre & AI energy demand with clean, reliable nuclear baseload: SMRs can serve mission-critical loads such as data centres and AI hubs that require uninterrupted supply, particularly in locations where land constraints and grid congestion limit large onsite renewable options or extensive transmission buildout.
- Repurposing retiring coal-plant sites to de-risk siting: Converting brownfield coal sites to SMR locations can leverage existing land, grid interconnections, cooling, and transmission infrastructure—reducing acquisition frictions and potentially accelerating timelines.
- Building a public–private innovation ecosystem: Structured public–private collaboration—supported by enabling policy and institutional mechanisms—can accelerate design development, demonstration projects, and commercial pathways, while anchoring localisation and industrial learning-by-doing.
- Deepening international partnerships without diluting sovereignty: Targeted collaboration with global vendors and regulators can support safety standards, design expertise, and capacity-building, while ensuring sensitive fuel-cycle technologies remain under appropriate national control.

- Positioning India as an SMR manufacturing and export hub: Leveraging latent capacity in heavy engineering and enabling serial production can drive cost reduction through standardisation and scale, while advancing "Make-in-India" objectives and creating export potential.

The challenges to addressing these opportunities exist across multiple areas:

- Liability architecture and insurability constraints: Persistent perceptions of unbounded supplier exposure have deterred investment and technology transfer; reforms must balance citizen protection with predictable risk allocation supported by credible insurance arrangements.
- Licensing timelines and regulatory process fit-for-purpose: Existing clearance and approval systems—designed around large, bespoke reactors—risk eroding SMRs' modular-speed advantage unless processes become more standardised, time-bound, and appropriately sequenced (including design approval approaches).
- Bankability constraints and cost-of-capital challenges: High upfront CAPEX and long payback periods require tariff predictability, long-term offtake structures, and early-stage risk mitigation (e.g., guarantees or concessional instruments) to attract investors and enable scalable pipelines.
- Siting, land, and clearance complexity: Even where brownfield options exist, streamlined land-use processes and environmental pathways are required to reduce delays while maintaining ecological safeguards and community consent.
- Security and safeguards implications of wider deployment: Distributed siting can increase the complexity of physical security and material protection; governance must preserve safety and safeguards without creating an overly dispersed footprint of sensitive nuclear assets.

## Moderators and Participants

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|---|---|
| Knowledge Partners | Invest India; Indian Youth Nuclear Society (IYNS) |
| Moderator | Shri Samyak Munot, Vice President, IYNS |
| Welcome Address | Ms Sujatha UG, Vice President, Invest India |
| Participants | Dr. R. Bhushan Grover, Emeritus Professor, Homi Bhabha National Institute |
| | Dr. Arun Kumar Naik, Former Head, Nuclear Controls and Planning Wing, Department of Atomic Energy |
| | MP Shri Sandeep Pathak |
| | MLA Shri Gaurav Pardhi |

## Key Insights

Nuclear was positioned as renewables' reliability complement. The discussion highlighted that variable renewables alone cannot fully meet the reliability needs of a fast-growing, increasingly electrified economy. Participants framed nuclear as a firm, low-carbon backbone that can stabilise the system as solar and wind scale.

The conversation shifted from technology to governance readiness. Participants emphasised that India has moved beyond general debates on whether SMRs are viable toward "next-order" questions: licensing, regulation,

liability, supply chains, and financing. The roundtable focused on what must change institutionally for credible, scaled deployment.

Safety, safeguards, and security were treated as non-negotiables. The discussion repeatedly returned to the need for science-based regulation, lifecycle oversight, and robust accounting and verification to prevent diversion of material. Participants noted that security considerations constrain how widely nuclear assets can be dispersed, particularly given India's geopolitical context.

Regulatory credibility and dispute-resolution pathways shape confidence. Participants underscored that predictable enforcement capacity is central to both investor certainty and public trust. The discussion highlighted the importance of clear institutional roles, operational authority to ensure compliance, and structured pathways to resolve disputes and appeals.

SMR expectations were tempered with realism on economics and sizing. The discussion cautioned against inflated narratives, noting that modularity is fundamentally a construction approach rather than an inherent safety feature. Participants also highlighted that smaller reactors are not necessarily cheaper per megawatt, and that very small designs may be viable mainly for niche applications rather than mainstream grid needs.

Standardisation emerged as a prerequisite for serial production. Participants noted that SMR cost-reduction pathways depend on repeatability, learning curves, and a limited set of bankable designs. The discussion warned that a proliferation of designs risks undermining manufacturability and investor confidence, while also raising sovereignty considerations in design choice and collaboration.

Sovereignty considerations were linked to fuel-cycle and technology control. The discussion emphasised that sensitive nuclear technologies require continued national oversight, even as participation expands. Participants noted that opening investment space must be paired with disciplined governance that protects strategic control while enabling responsible collaboration.

Supply chains were framed as a gating factor for affordability and speed. Participants highlighted that reliance on external supply chains could raise capital costs and reduce affordability in the Indian market. Building domestic manufacturing depth—alongside selective partnerships—was discussed as essential to scaling deployment and reducing costs over time.

Public legitimacy hinges on transparency, communication, and credible compensation. The discussion noted that public risk perception is shaped by historical industrial disasters and radiation fears, amplifying the need for open debate and clear operating rules. Participants discussed the sensitivity of balancing liability caps and compensation arrangements to protect citizens while not deterring private participation through unworkable risk exposure.

# Early Action Economics: Insurance as a Catalyst for Climate Resilience

| | |
|---|---|
| Knowledge Partners | Climake CKinetics |
| Moderator | Ms Simmi Sareen, Co-founder, Climake |
| Participants | Mr. Anuj Kumbhat, Founder, Weather Risk Management Services |
| | Mr. Samuel John, Co-founder, CEO, & CSO, MistEO |

## Context

Climate shocks are now a structural economic risk for India, with losses increasingly exceeding the country's capacity to absorb them. Over the past three decades, India has experienced more than 400 climate-related disasters, resulting in an estimated USD 170–180 billion in economic losses and over 80,000 deaths. Without accelerated adaptation, scientific assessments indicate that climate change could reduce India's GDP by 3–10% annually by the end of the century, with delta and coastal regions facing especially severe economic exposure.

Rapid urbanisation and asset concentration are amplifying these losses and turning climate risk into a macroeconomic challenge. India's cities—expected to generate nearly 70% of new jobs by 2030—are becoming climate hotspots. Urban flooding already causes approximately USD 4 billion in annual losses, projected to rise sharply without intervention, while intensifying heatwaves are suppressing labour productivity and straining infrastructure in dense economic clusters.

MSMEs are among the most exposed yet least protected segments of the economy. MSMEs contribute nearly 30% of GDP, employ over 110 million people, and account for 40% of exports, but many operate in climate-sensitive locations with thin margins and limited buffers. Evidence shows that extreme events can erase 10–25% of annual revenues for affected units, and a significant share of MSMEs that shut down after major shocks never reopen—triggering cascading supply-chain and employment losses.

Existing disaster relief and insurance systems do not provide MSMEs with timely liquidity when shocks occur. Public relief mechanisms largely prioritise households and infrastructure, while indemnity-based insurance remains poorly suited to small firms due to slow assessments, documentation burdens, and low penetration. As a result, MSMEs often rely on high-cost borrowing or prolonged shutdowns, deepening insolvency risk.

Parametric insurance offers a scalable pathway to deliver rapid, rules-based financial protection. Trigger-based payouts linked to rainfall, heat, wind, or flood thresholds can provide liquidity within days, preventing temporary disruptions from becoming permanent economic damage. India's dense climate-data networks, digital public infrastructure, and experience with index-based agricultural insurance position it well to extend parametric solutions to MSME clusters at scale.

## Potential Opportunities and Challenges

Key Opportunities

- A large, untapped market for climate-risk insurance anchored in MSME exposure. With over 6 crore MSMEs operating in flood-, heat-, and rainfall-sensitive clusters, India represents

one of the world's largest underinsured markets for climate-risk protection, creating strong potential for scalable parametric insurance solutions.

- Public systems can unlock private insurance innovation at scale. Government-enabled climate data, predefined triggers, premium co-financing, and reinsurance backstops can sharply reduce insurer risk. Sub-national pilots such as rainfall-index covers demonstrate how public enablers can allow private insurers and reinsurers to focus on product design, modelling, and distribution—moving from pilots to multi-hazard programmes.

- Parametric products can be designed to be affordable, inclusive, and fast. Simple, low-premium parametric covers—distributed through MSME networks, cooperatives, and digital platforms—can deliver rapid payouts during extreme events. Early pilots show that even small, same-day payments can stabilise incomes and prevent disruption from cascading into insolvency.

- Blended finance can convert public spending into sustainable insurance markets. Pooling premium subsidies with concessional and philanthropic capital, alongside guarantees and co-insurance structures, can lower costs and stabilise losses—mirroring how public funds catalysed private participation in large-scale health insurance schemes.

Key Challenges

- Fragmented climate and insurance data increases basis risk and delays payouts. Dispersed hazard, exposure, and beneficiary data across agencies limits reliable trigger design, automated payouts, and insurer confidence, constraining scale.

- Regulatory frameworks are not yet designed for parametric insurance. Existing rules remain centred on indemnity models, with limited clarity on trigger design, approvals, and consumer protection for parametric and hybrid products—slowing innovation and market entry.

- Low insurance penetration and weak trust hinder uptake. With non-life insurance penetration at ~1% of GDP, many MSMEs lack familiarity with insurance or confidence in payouts, requiring simple products, transparency, and credible delivery mechanisms.

- Lack of coordinated institutional ownership limits scale. Climate insurance spans multiple ministries, regulators, and state agencies, but the absence of a unified governance or planning mechanism makes systematic rollout and integration into social protection difficult.

## Key Insights

Climate insurance is emerging as a critical economic resilience tool, not just a risk-transfer product. The discussion underscored how rising climate volatility including heatwaves, floods, rainfall shocks, and extreme weather has turned resilience into an economic imperative. Climate insurance is increasingly being viewed as a catalyst that protects wages, revenues, and asset viability across sectors, particularly where climate events disrupt cashflows rather than destroy physical assets outright.

Parametric insurance is gaining momentum beyond agriculture, driven by data readiness and digital infrastructure. While early traction has been strongest in agriculture, interest is rapidly expanding into MSMEs, renewable energy, services, and informal labour. Improvements in weather data, early-warning systems, and regulatory clarity over the past five to six years have made trigger-based products more viable. The convergence of high-frequency climate data with digital payment rails enables near-real-time payouts—something that was not feasible even a few years ago.

MSMEs and weather-dependent sectors face acute cashflow risk that traditional insurance does not address well. MSMEs experience frequent income and productivity losses from climate events, yet lack buffers, quick credit access, or adequate insurance coverage. Long claims processes and exclusions in indemnity products exacerbate stress, while enterprises value rapid liquidity even at higher premiums over delayed compensation. Similar vulnerabilities are emerging in renewable energy, where weather volatility increasingly affects generation, grid penalties, and project bankability.

Product design, trigger accuracy, and distribution determine whether parametric insurance builds trust. Well-designed products must closely match exposure at the local level to avoid basis risk and payout disputes. Experiences highlighted the importance of city- and asset-specific triggers, integrated climate-risk modelling, and seamless distribution through platforms that already capture real-time economic activity. Fast, transparent settlement is essential to build confidence and scale adoption.

Scaling climate insurance will require ecosystem coordination and blended finance. Demand for parametric insurance is growing across sectors, but affordability, data gaps, and trigger calibration remain constraints. Blended finance, premium support, and public participation are critical to make products viable at scale, while regulatory and institutional alignment will determine whether climate insurance becomes a mainstream pillar of India's adaptation and resilience strategy

# India's Cleantech Leap: Brasstacks of making India a Cleantech R&D Hub


## Moderators and Participants

| | |
|---|---|
| Knowledge Partners | Centre of Technology, Innovation and Economic Research (CTIER)<br>Spectrum Impact |
| Moderator | Shri Mudit Narain |
| Participants | Shri Chaitanya Lekhraju, Centre of Technology, Innovation and Economic Research (CTIER)<br>Shri Mahesh Deodhar, Pune International Centre<br>Shri Sanjeev Agarwal, Group CTO, Blue Star<br>Prof. Sunil Kale, Dean, School of Engineering and Applied Sciences, Ahmedabad University<br>Dr. Anupam Saronwala, Senior Advisor to CEO, Anusandhan National Research Foundation (ANRF)<br>Shri Rohit Bohra, MLA |

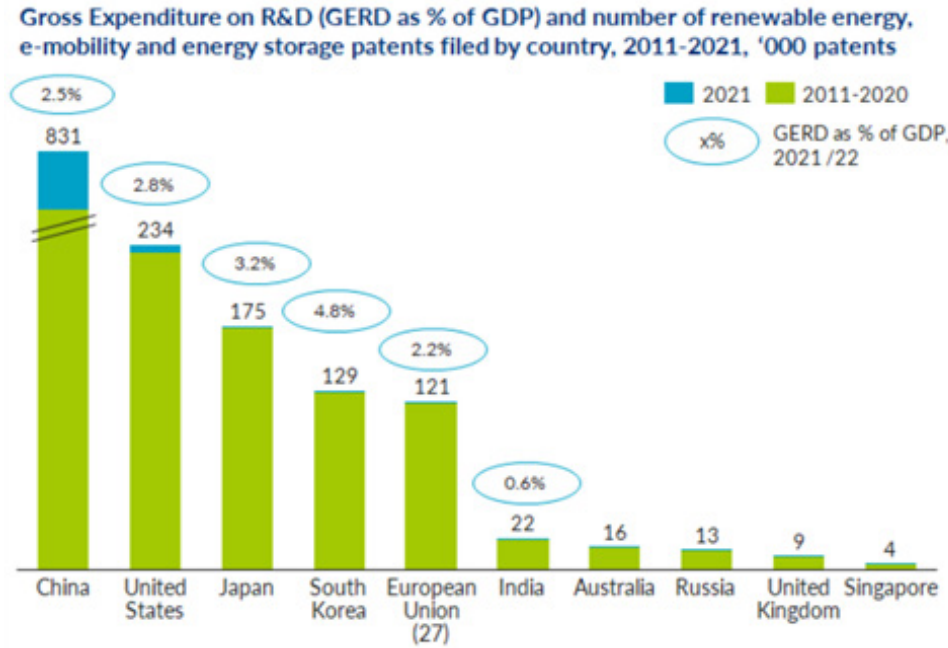
## Context

India has emerged as one of the world's largest clean energy markets, with national climate commitments closely linked to the Atmanirbhar Bharat and Viksit Bharat agendas. Ambitious targets—500 GW of renewable energy capacity by 2030, 5 MTPA of green hydrogen production capacity, and 30% of vehicle sales as electric—signal not only near-term deployment intent but also long-term positioning as a clean energy leader, alongside the net-zero by 2070 commitment.

Yet, rapid scale-up remains highly import-dependent, with solar alone described as ~80% import-dependent and multiple critical technologies—polysilicon and wafers, electrolyzers, and advanced battery chemicals—still largely sourced externally. This dependence exposes India to price volatility, supply-chain disruptions, and geopolitical or trade shocks, while constraining the development of indigenous manufacturing ecosystems and limiting India's influence over global technology standards. Over time, the risk is structural: India could remain concentrated in lower-value segments of clean value chains while innovation and high-value manufacturing stay offshore.

The roundtable located R&D as the principal lever to reverse this trajectory, while acknowledging that meaningful manufacturing outcomes from R&D strengthening would likely materialise beyond 2030 given conventional underinvestment. India's gross expenditure on R&D remains at around 0.6% of GDP—well below commonly cited global benchmarks of 2–5%—with the concept note also linking higher R&D intensity to global clean patent leadership. The comparative chart on page 2 (GERD as % of GDP alongside renewable energy, e-mobility, and energy storage patents filed, 2011–2021) was used to illustrate both the scale of India's R&D gap and the innovation concentration in higher-spending economies.

*Figure: Gross Expenditure on R&D (GERD as % of GDP)*




*and number of renewable energy, e-mobility and energy storage patents filed by country, 2011-2021, '000 patents*

Against this backdrop, recent institutional and programmatic shifts were positioned as an inflection point: the establishment of the Anusandhan National Research Foundation (ANRF) to coordinate a fragmented R&D ecosystem; larger mission-style public investments (including the National Green Hydrogen Mission's R&D earmarks and the Advanced Solar Technology R&D initiative); and the emerging shift from short-term grants toward longer-term financing models under the RDI scheme. The concept note also framed the macroeconomic

stakes—targeted action could unlock "100+" indigenous cleantech innovations by 2030 and catalyse private R&D flows, while inaction could see a significant share of India's long-term net-zero investment leaking abroad through imports.

## Potential Opportunities and Challenges

India can make innovation the default in how it designs, manufactures, and scales clean technologies, ensuring solutions are tailored to its development priorities and industrial strengths.The opportunities for Lab to Market / India's cleantech leap: Brasstacks of making India a cleantech R&D hub in India include:

- Building a coordinated national cleantech funding stack: Aligning AIM grants, ANRF and SIDBI fund-of-funds equity, and line-ministry allocations can create an end-to-end financing continuum from productisation to first-of-a-kind deployment.
- Scaling late-TRL productisation and FOAK support: Earmarked productisation grants and FOAK deployment support can help high-potential technologies cross commercialisation thresholds and demonstrate bankability in Indian conditions.
- Crowding in private R&D through co-investment incentives: Matched or recoverable grants, outcome-linked support, and an industry co-investment window can pull private actors deeper into the R&D pipeline against clear technology milestones.
- Creating shared pilot lines and testbeds in industrial clusters: Upgrading and opening existing IIT, national lab, NIWE/NISE/CSIR infrastructure to startups, MSMEs, and anchor firms can accelerate prototyping, testing, and certification at lower cost.
- Structuring India–UK / India–EU co-development tied to real projects: Targeted partnerships for frontier technologies—supported by reciprocal testbed access, joint certification pathways, and shared IP rules—can accelerate learning while building export-ready capabilities.
- Harmonising testing, certification, and data protocols: A unified national protocol anchored by MNRE/BIS/BEE, complemented by a registry of validated results accessible to lenders and OEMs, can reduce due diligence cycles and strengthen investability.
- Embedding talent development in mission labs and deployments: Aligning curricula and apprenticeships to real pilot lines, shared testbeds, and manufacturing plants can create an R&D-ready workforce measured by placement into roles, not classroom hours.

The challenges to addressing these opportunities exist across multiple areas:

- India's ability to realize the full potential of its cleantech R&D ecosystem is constrained by a set of structural challenges that cut across sectors and stages of the innovation lifecycle. The challenges to addressing these opportunities exist across multiple areas:
- Fragmented technology prioritisation and weak translational incentives: Limited incentives to move beyond basic science, constrained cross-institutional collaboration, and under-capacitated technology transfer functions reduce the flow of India-relevant technologies into commercial pathways.
- Uneven and inaccessible R&D infrastructure: Facilities remain concentrated in select institutes, with limited open-access labs and shared testbeds for startups and MSMEs, and underutilised public Centres of Excellence limiting scale and utilisation.
- Insufficient, poorly targeted risk capital for cleantech R&D: Fragmented public funding and limited private R&D intensity, alongside low venture allocation to cleantech, constrain risk-taking and slow progression across the "valleys of death."
- Siloed governance across ministries and agencies: Parallel programmes without pooled budgets or unified oversight weaken prioritisation, delay commercialisation, and limit systematic linkage between R&D, industrial policy, and deployment.
- Underdeveloped mechanisms for technology transfer and commercialisation: Weak interfaces between academia, startups, and industry—particularly for manufacturing scale-up—leave innovations stranded at lab or pilot stage.

## Key Insights

India's R&D scale gap was framed as structural. The discussion highlighted that while absolute R&D expenditure may be rising, the comparative scale remains far below global peers. Participants noted that global frontier firms invest at a magnitude comparable to, or exceeding, entire sectors' R&D spend in India—underscoring why competitiveness requires a step-change rather than incrementalism.

Clean innovation was linked to strategic autonomy, not only cost. Participants emphasised that import dependence is not merely a pricing issue but a question of resilience, value capture, and long-term industrial capability. The discussion connected cleantech R&D to national competitiveness and security in an era of supply-chain disruption and geopolitical uncertainty.

India's endowments were positioned as innovation starting points. The roundtable noted that India's material strengths—such as sodium and other abundant inputs—create pathways for India-specific technology bets, including alternative battery chemistries and context-suited solutions. Participants also highlighted that some innovation opportunities sit in overlooked segments, such as storage and transport challenges in green hydrogen value chains.

Public lab capability exists, but access and visibility lag. The discussion pointed to persistent gaps in how shared infrastructure is surfaced and utilised by innovators, including incomplete discovery and matchmaking between seekers and facilities. Participants noted that improving access rules, transparency, and coordination is as important as building new labs.

Mindset and risk tolerance were treated as binding constraints. Participants underscored that R&D success requires accepting failure and sustained iteration, contrasting this with a prevailing preference for short-term delivery and "shortcut" solutions. The discussion suggested that changing incentives—across firms, institutions, and individuals—is central to shifting behaviour toward longer-horizon innovation.

Skilling and curriculum alignment emerged as immediate priorities. The roundtable emphasised that industry faces acute gaps in job-ready talent for emerging cleantech requirements, particularly in applied, manufacturing-adjacent roles. Participants highlighted the need for structured industry–university engagement, apprenticeships, and curriculum updates tied to real production and testing environments.

Boards' time horizons were seen as misaligned with research cycles. Participants noted that corporate decision-making often seeks returns within short windows, while meaningful R&D typically requires longer timelines. The discussion suggested that predictable incentives, clearer commercial pathways, and risk-sharing instruments can help close the gap between board expectations and research reality.

Demand-side assurance was discussed as a de-risking lever. The roundtable highlighted that commercialisation stalls not only due to technology maturity but also because early markets are uncertain. Participants discussed procurement and demand guarantees—alongside price and offtake clarity—as mechanisms that can convert lab-stage progress into investable manufacturing decisions.

Policy design was cautioned against entrenching concentration. Participants noted that incentive structures can unintentionally favour large incumbents and disadvantage startups and mid-sized innovators, potentially suppressing investment in emerging technologies. The discussion highlighted the importance of designing schemes that strengthen the innovation base rather than narrowing it.

Governance was framed as the missing "research management" layer. The discussion argued that beyond funding and individual projects, India requires coordination capacity to assemble multidisciplinary inputs into deployable products at the right time and scale. Participants pointed to the need for outcome-linked accountability, clearer funnel governance from R&D to manufacturing, and stronger institutional mechanisms to connect actors who currently operate in silos.

# India–Africa Partnership: Building a Shared Clean Energy Future

## Moderators and Participants

| | |
|---|---|
| Knowledge Partners | Sustainable Energy for All (SEforALL)<br>World Bank<br>International Solar Alliance (ISA) |
| Moderator | Shri Vivek Mittal, Chief Executive Officer, Africa Infrastructure Development Association |
| Chairperson | H.E. Damilola Ogunbiyi, Chief Executive Officer, Sustainable Energy for All; United Nations Special Representative of the Secretary-General (UN SRSG) for Sustainable Energy for All; Co-Chair, United Nations Energy (UN-Energy) |
| Presentation | Jagjeet Sareen, Partner & India Head, Dalberg Advisors |
| Participants | Abhinav Mathur, Senior Consultant to Vice Chairman, NITI Aayog; Advisor to Attero Recycling<br>Gopalika Arora, Deputy Director, Centre for Economy & Growth, Observer Research Foundation (ORF)<br>Amit Jain, Senior Energy Specialist, World Bank Group<br>Barakat Ahmed, Regional Programmes Head – Africa, International Solar Alliance (ISA) |

## Context

A deepening India–Africa clean energy partnership is increasingly defined not only by deployment outcomes, but by the ability of both regions to jointly build resilient clean-tech value chains that can deliver scale, affordability, and long-term energy security. India and Africa have established a credible track record of cooperation in renewable energy deployment, supported by institutional collaboration and multilateral platforms. As India advances a cleantech manufacturing agenda across solar, storage, grids, and other transition technologies, the partnership opportunity is shifting toward demand aggregation and coordinated industrial strategy—leveraging combined market growth to strengthen utilisation, improve economics, and build manufacturing competitiveness.

The roundtable was framed around three interconnected priorities: building speed and scale in clean-tech manufacturing, securing and responsibly integrating critical minerals into manufacturing strategies, and strengthening the enabling ecosystem required for bankable projects and investable value chains. Participants noted that realising this next phase will require addressing binding constraints—particularly patient capital, technology development and transfer, and cost competitiveness against entrenched global producers—while ensuring that cooperation on minerals supports value addition, safeguards, and trust.

## Potential Opportunities and Challenges

- Enabling demand aggregation for manufacturing scale: A structured India–Africa demand corridor across power generation, storage, grids, and productive-use applications can

improve market predictability and utilisation rates for manufacturers, strengthening investment viability and supporting phased industrial deepening from deployment-linked manufacturing to joint ventures and component production.

- Linking deployment to supply chain development: Aligning Africa's near-term deployment priorities with manufacturing and assembly pathways—where feasible—can support energy access outcomes while creating a clearer bridge between project pipelines and local/regional supply chain development, improving affordability and resilience.
- Building integrated critical minerals value chains: Africa's mineral endowment and India's growing manufacturing demand create an opportunity to move beyond raw-material sourcing toward integrated value chains that include responsible mining, selective local processing, skills development, and industrial diversification—supporting supply security for manufacturers while increasing development returns for resource-rich economies.
- Strengthening concessional and blended finance platforms: Coordinated use of concessional finance, guarantees, and development finance instruments can reduce risk barriers that currently limit project bankability and manufacturing competitiveness, especially where cost of capital and perceived risk remain high.
- Institutional platforms for implementation pipelines: Regular, structured platforms linking governments, industry, financiers, and multilaterals can translate strategic intent into coordinated pipelines—aligning standards, planning practices, capability-building, and financing approaches across both regions.
- Reducing investment risk and financing costs: Even with strong demand fundamentals, high financing costs and risk perceptions can block scale; without credible de-risking structures, blended finance, and replicable commercial vehicles, private capital remains difficult to crowd in at the pace required.
- Technology access and competitiveness gaps: Cost competitiveness against established global producers remains a constraint; without stronger pathways for technology development, transfer, and scale economies, manufacturing ambitions may face persistent price disadvantages.
- Governance and safeguards in minerals cooperation: Minerals partnerships require clarity on transparency, environmental and social safeguards, and equitable value sharing; weak governance frameworks can undermine trust, public support, and the durability of cross-border supply arrangements.
- Capacity and institutional readiness across the ecosystem: Manufacturing and project delivery require workforce development, strong operations and maintenance ecosystems, and regulatory certainty; gaps in these enabling conditions can weaken investor confidence and long-term performance.

## Key Insights

Scaling procurement improves economics and delivery confidence. Participants emphasised that repeated procurement at increasing scale has consistently reduced costs and improved risk–reward outcomes across sectors, positioning scale as a practical pathway to stronger project economics. The discussion framed "readiness" as an integrated function of creativity, capability, and capital—requiring both technical preparedness and financial structures that can execute quickly.

A manufacturing partnership is anchored in complementary needs. The roundtable highlighted that India's cleantech manufacturing ambition and Africa's deployment needs are structurally complementary, but the partnership must be sequenced deliberately—linking supply security and manufacturing scale with demand growth across African markets. Participants noted that minerals availability in Africa will remain a key determinant of how far manufacturing strategies can be domestically strengthened and globally competitive.

Lines of credit and market access require sharper

execution focus. The discussion surfaced the gap between announced financing and realised deployment, underscoring that available credit headroom does not automatically translate into projects. Participants pointed to the potential for combining credit mechanisms with clearer partnership models—including targeted geographies for assembly and joint ventures—to convert intent into implementation.

The financing constraint in Africa is structural, not marginal. Participants noted that Africa attracts a small share of global clean energy investment and faces financing costs that are materially higher than advanced economies, reinforcing a cycle where fiscal stress, climate vulnerability, and borrowing costs compound each other. The discussion highlighted the role of sovereign credit ratings and data quality in inflating borrowing costs, and identified institutional engagement with rating agencies—supported by improved data and sustained dialogue—as a practical, underused lever.

Bankable pipelines and aggregation are essential to crowd in institutional capital. The roundtable observed that a persistent shortage of robust, scalable, investment-ready project pipelines limits capital mobilisation, particularly for institutional investors seeking scale and standardisation. Participants noted that development finance has limits relative to global investment needs, and that achieving material scale requires structures that can attract large pools of institutional capital rather than relying predominantly on grants or fragmented pilots.

Commercial vehicles must replace a grant-first delivery model. Participants stressed the need to move beyond a grant-based mindset toward replicable commercial vehicles at scale, designed around private investor decision logic and risk-adjusted returns. The discussion highlighted that initiatives such as Mission 300 and parallel facilities can play a catalytic role, but their impact depends on translating concessional support into credible, investable structures and pipelines.

Critical minerals strategy is increasingly tied to recycling and midstream capacity. The discussion highlighted India's direction of travel on critical minerals, including emphasis on recycling infrastructure, resource efficiency, and midstream processing capabilities. Participants noted the strategic logic of pairing minerals access with refining, recycling, and technology collaboration, particularly given the projected future volumes of end-of-life solar panels and batteries and the value of recovering critical materials.

Implementation pathways should build on trust and "transferable" models. Participants emphasised that India's deployment and execution approaches may be more readily adapted across developing-country contexts, including in stakeholder engagement and practical delivery sequencing. The discussion underscored that diaspora and long-standing commercial relationships can support trust-based partnerships, but that success will depend on operationalising these advantages into concrete mechanisms—such as policy translation, auction design support, and country-level platforms for planning and execution.

Concrete near-term actions centred on de-risking, capacity, and market creation. Participants highlighted catalytic finance tools such as guarantees that can mobilise larger capital volumes, alongside capacity-building platforms that strengthen institutional readiness and help create durable markets. The roundtable converged on the need to take solutions closer to implementation environments—including more structured engagement in African markets—so that the next phase of cooperation is judged by deliverable pipelines and demonstrable projects within the coming year.

# Hot Future, Cool Tech: Engineering Resilience through Domestic Innovation


## Moderator and Key Speakers

| | |
|---|---|
| Knowledge Partners | National Resources Defense Council (NRDC)<br>IORA Ecological Solutions |
| Moderator | Shri Swapan Mehra, IORA Ecological Solutions |
| Participants | Dr. RS Agarwal, IIT Delhi<br>Shri Srinivasu Moturi, R&D Head, Voltas<br>Dr. Satish Kumar, President and ED, AEEE - Alliance for Energy Efficient Economy<br>Shri Kapil Singhal, MD, REFCOOL Refrigeration |

## Context

Extreme heat is rapidly becoming one of India's most consequential climate risks, with profound human, economic, and productivity impacts. India has repeatedly broken temperature records in recent years, with 2024 emerging as the warmest year on record. Heatwaves are growing longer and more intense, while many cities are experiencing "hot nights" that prevent physiological recovery. By 2030, an estimated 160–200 million people are projected to face lethal heat exposure annually. Prolonged heat stress is expected to reduce labour productivity and could lower India's GDP by up to 2.8% by mid-century, disproportionately affecting children, the elderly, outdoor workers, and low-income urban communities.

Rising heat is driving a surge in cooling demand that poses both an energy and emissions challenge for India. Residential air-conditioner penetration, currently at just 8–10%, is projected to rise to nearly 50% by 2037, driven by urbanisation, rising incomes, and worsening heat. Expanding urban heat islands and energy-intensive sectors such as data centres, logistics, and cold chains are further accelerating demand. By 2027, energy consumption is expected to double across space and transport cooling and triple for cold chains and refrigeration, with annual cooling-related emissions projected to double. The India Cooling Action Plan (ICAP) responds to this challenge by targeting a 20–25% reduction in cooling demand by 2037–38 through efficiency improvements and better servicing.

India's growing cooling demand presents a strategic opportunity to deepen domestic manufacturing and reduce import dependence. Despite being a major RAC assembly hub, India's localisation levels remain limited at 30–40%, with critical components—such as compressors, motors, controllers, heat exchangers, and PCBs—largely imported. This import reliance exposes manufacturers and consumers to global price volatility, forex shocks, and supply-chain disruptions, as seen during the 2022 currency fluctuations when higher costs were passed on to households.

Policy momentum is building to indigenise the cooling ecosystem, but structural gaps remain. The Production Linked Incentive (PLI) scheme has committed ₹4,806 crore to indigenise AC components, aiming to reduce import dependence from 60–70% to 20–30% over the medium term. Recent rounds have already attracted over ₹1,900 crore in proposed investments. However, challenges persist—particularly in scaling advanced components like compressors, strengthening local R&D, upgrading testing and quality infrastructure, and building a skilled technician workforce capable of supporting high-efficiency systems.

This roundtable focuses on moving India's cooling sector from assembly-led growth to a resilient, innovation-driven manufacturing ecosystem. The discussion will explore how policy, industry, and technology can align to raise domestic value addition, strengthen component competitiveness, and build future-ready cooling solutions that support India's climate goals, energy security, and industrial ambition.

## Potential Opportunities and Challenges

India's cooling manufacturing transition can deliver climate resilience and industrial value—but only if the sector shifts rapidly from assembly to deep, component-led manufacturing.

Opportunities

- Exploding cooling demand creates scale for domestic manufacturing. RAC ownership is set to rise fivefold by 2037–38, anchoring a large, long-term market that can justify localisation of high-value components and generate significant jobs and value.
- India can become a global supplier of high-ambient cooling systems. By designing efficient, low-GWP RACs suited to hot and humid conditions, India can serve fast-growing Global South markets and convert domestic demand into export leadership.
- Efficiency and refrigerant transitions enable technological leapfrogging. Aligning manufacturing with ICAP and Kigali commitments allows India to move directly into next-generation, low-GWP, high-efficiency cooling technologies.

Challenges

- Refrigerant transition readiness is uneven. Limited safety standards, testing infrastructure, and technician training constrain the shift to low-GWP refrigerants and risk fragmented compliance.
- High upfront costs slow adoption of efficient RACs. Price sensitivity keeps consumers locked into lower-efficiency models, weakening demand signals for advanced technologies.
- Weak R&D and testing infrastructure limits innovation. Cooling lacks sustained national R&D focus, shared testbeds, and strong industry–research linkages.
- Import dependence and skills gaps undermine resilience. Reliance on imported compressors and electronics, combined with poor servicing practices,

reduces competitiveness and erodes efficiency gains.

## Key Insights

Extreme heat has become an immediate economic and industrial stressor rather than a future risk. Rising temperatures are already undermining labour productivity, public health, and urban liveability, while sharply increasing demand for space cooling, transport cooling, and cold chains. Cooling is now a core determinant of India's climate resilience and growth trajectory.

India faces a once-in-a-generation opportunity to anchor large-scale cleantech manufacturing through cooling. Demand growth over the next decade creates a multi-lakh-crore market, but current expansion remains assembly-led, with limited localisation of high-value components that determine efficiency, emissions, and system resilience.

The most binding constraint is capability, not demand. Gaps persist in advanced compressors, refrigerants, power electronics, materials, and testing infrastructure. R&D efforts are largely focused on incremental engineering of existing products, while deeper innovation is slowed by weak industry–academia linkages and the absence of shared centres of excellence.

Policy certainty and demand aggregation emerged as critical enablers of investment. Capital-intensive component manufacturing requires long, predictable regulatory timelines and clear demand signals. Frequent changes in standards and technology pathways raise risk and discourage manufacturers from committing to advanced capabilities.

Affordability and efficiency must be addressed together. Most households continue to purchase lower-efficiency RACs due to upfront cost sensitivity, but better building design, insulation, and right-sizing can reduce cooling loads, lower equipment costs, and accelerate adoption of efficient systems.

Passive cooling and urban design are indispensable complements to mechanical cooling. With rapid expansion of affordable housing and dense urban construction, climate-responsive building design is essential to protect populations from heat stress without locking in unsustainable electricity demand.

Workforce skills and servicing quality determine real-world outcomes. Poor installation, maintenance, and refrigerant handling erode efficiency gains, increase emissions, and weaken consumer trust, making technician skilling a central pillar of the cooling transition.

Delivering a resilient cooling future requires treating cooling as a national strategic priority. Coordinated action across R&D, component suppliers, appliance manufacturers, skilling systems, and policy is needed to build a competitive, future-ready cooling ecosystem aligned with India's climate and development goals.

# High-level Discussion on Cleantech Manufacturing Tech and Investment Accelerator

## Moderator and Key Speakers

| | |
|---|---|
| Moderator | Ms Sujatha UG, Vice President, Invest India |
| Participants | Shri Nishaanth Balashanmugam, CEO & Director, GH2 |
| | Ms Ruchira Shukla, Managing Partner, Green Marble VC |
| | Shri Kavin Kandasamy, Chief Executive Officer, ProClime |
| | Ms Anshita Agarwal, Deputy Vice President, NorthernArc Capital |
| | Shri Jai Mallick, Managing Director India, Intralink Group |

## Key Insights

**Cleantech manufacturing is now central to India's growth, energy security, and competitiveness agenda.** Scaling domestic manufacturing across solar, wind, storage, hydrogen, nuclear-linked systems, and emerging technologies is essential to meet long-term demand, reduce import dependence, and support India's macroeconomic targets.

**Capital deployment depends on coordinated enablers beyond finance alone.** Investment outcomes improve when pipeline curation, technology readiness, policy clarity, institutional alignment, and market access progress together, rather than through isolated funding efforts.

**A national accelerator platform can convert ambition into execution at scale.** By integrating pipeline creation, investor alignment, technology transfer, policy feedback, and industry–investor engagement, a shared platform can shift cleantech manufacturing from episodic deals to a repeatable system.

**The most acute constraint lies in the transition from early equity to scalable operations.** Many firms struggle after initial funding due to governance gaps, weak execution capacity, and limited access to structured debt, highlighting the need for validation, mentorship, and blended finance pathways.

**Technology transfer and international linkages are critical to accelerating localisation.** Global firms are actively seeking entry into India but require clearer market validation, customer access, and regulatory navigation; structured partnerships can shorten learning curves and speed domestic value addition.

**Institutional capital requires clearer risk-sharing mechanisms and standardisation.** Credit guarantees, interoperable taxonomies, and predictable standards can reduce perceived risk and enable pension funds, insurers, and DFIs to participate more meaningfully in manufacturing finance.

**MSMEs represent a major opportunity for broad-based manufacturing depth.** Bringing growth-stage MSMEs onto the platform requires systematic screening, capability building, and access to risk mitigation tools to support technology upgrades and scale.

**State-level coordination is essential to unlock investable pipelines.** Fiscal constraints, fragmented definitions, and capacity gaps at the subnational level limit project readiness; shared frameworks and targeted capacity support can accelerate deployment.

**Early credibility depends on a small number of measurable outcomes.** Focusing on defined deal volumes, priority sectors, or anchor geographies in the first phase can demonstrate value quickly and build momentum for expansion.

# Key Launches @ BCF 2026

BCF 2026 was marked by a series of flagship launches that reinforced the Forum's emphasis on implementation, innovation, and measurable impact. Collectively, these initiatives advanced the transition from strategic intent to on-ground execution across manufacturing, finance, resilience, and air quality.

At the centre of these announcements was the **Bharat Cleantech Manufacturing Blueprint**, formally unveiled by the Hon'ble Vice President of India. The Blueprint presents a structured and actionable roadmap to scale domestic cleantech manufacturing, identifying priority policy, financial, and institutional interventions across key value chains. It is designed to bridge the gap between ambition and execution and position India as a globally competitive clean manufacturing hub.

To translate these pathways into investable outcomes, BCF 2026 also launched the **Cleantech Manufacturing Technology and Investment Accelerator**, in partnership with **Invest India**. The Accelerator is designed to build robust project pipelines, crowd in domestic and international capital, and enable strategic technology partnerships that accelerate manufacturing scale-up.

Recognising the importance of resilience and locally grounded innovation, the Forum further launched a **Climate Resilient Innovation Challenge** in collaboration with **NABARD**, aimed at identifying and supporting scalable solutions for rural and vulnerable contexts. In parallel, BCF 2026 unveiled the **Business of Air Pollution** initiative with the **Clean Air Fund (CAF)**, highlighting the economic and investment opportunity embedded in addressing air pollution through market-driven approaches.

BCF 2026 also served as a platform for advancing evidence and knowledge, including the launch of flagship analytical reports to inform policy, investment, and implementation strategies across India's climate and energy landscape.

## Report Launch: Blueprint for India's Cleantech Manufacturing Ambition


At the inauguration of BCF 2026, the Hon'ble Vice President of India formally launched the report *Blueprint for India's Cleantech Manufacturing Ambition*. The report was developed by Bharat Climate Forum and Council for International Economic Understanding , in collaboration with **Dalberg Advisors** as part of the Bharat Climate Forum 2026, drawing on extensive engagement with government stakeholders, industry leaders, financiers, knowledge partners, and private sector actors across the cleantech ecosystem.

The analysis combines rigorous desk research and data modelling using publicly available sources with structured consultations across value chains, followed by peer review by a broad group of cleantech and manufacturing experts. The Blueprint provides a structured assessment of priority cleantech value chains and the reforms required to unlock domestic value addition at scale.

The report examines six sectors critical to India's green transition—**solar photovoltaics, wind turbines, battery energy storage, e-mobility, green hydrogen, and high-voltage transmission**—alongside cross-cutting enablers such as financing and taxation. For each value chain, it identifies binding bottlenecks and sets out targeted actions required to achieve approximately **50 percent domestic value addition over the next five years**, supported by detailed technical deep dives available online.

## Report Launch: The Business Case for Clean Air and Aironomics 2025


Hon'ble Shri Manohar Lal Khattar formally launched the report *The Business Case for Clean Air*, an independent study commissioned by the **Clean Air Fund** and developed by Bharat Climate Forum and Council for International Economic Understanding , in collaboration with **Dalberg Advisors** as part of the Bharat Climate Forum 2026. The report demonstrates how clean air can act as a catalyst for India's economic growth and public well-being, reframing air pollution mitigation as a high-return development opportunity rather than a cost to be managed.

The report quantifies the economic benefits of implementing India's leading air quality solutions across five dimensions, investment potential, job creation, economic value generated, co-benefits, and cost savings. Building on the Clean Air Fund's earlier study, *The Silent Pandemic: Air Pollution and its Impact on Business* (2021), it assesses the impact of air pollution on business profitability through four channels: reduced consumer spending, premature mortality, lower labour productivity, and lost working days due to illness.

The Hon'ble Minister also formally launched *Aironomics 2025*, a report summarising the outcomes of the **Aironomics 2025** conference. The summit was convened to convert India's clean air ambition into coordinated, execution-focused action across policy, capital, and implementation actors. It brought together over **200 participants across 20 plenary sessions and six closed-door roundtables**, with more than **70 speakers**, including senior policymakers and institutional and corporate leaders.

The convening identified **eight priority sectoral pathways**—electric vehicles, clean cookstoves, flue gas desulfurisation, industrial controls, compressed biogas, material recovery facilities, mechanised road sweepers, and low-cost sensors—supported by cross-cutting enablers such as innovative financing and institutional coordination. Together, these pathways represent over **USD 4 billion (₹35,000 crore)** in investment opportunity. The summit also marked the launch of **Phase II of the Air Quality Action Forum** and the presentation of a Delhi action plan and national roadmap proposing a **Shuddh Vayu Mission**, a **Chief Ministers' Coalition for Clean Air**, and a **~USD 6 billion (₹50,000 crore) national SPV** to unlock private investment at scale.

## Launch: NABARD Climate Resilient Agriculture Innovation Grant Challenge


The **Climate Resilient Agriculture Innovation Grant Challenge** was formally launched by **Shri Ashwani Mahajan**, Member, Board of Governors, Council for International Economic Understanding (CIEU). The launch was attended by senior leaders from government, finance, industry, and the innovation ecosystem, including representatives from NABARD, Dalberg Advisors, and the private sector.

Positioned as a catalytic mechanism to mobilise India's startup ecosystem, spanning space-tech, deep-tech, and agri-tech, the Challenge aims to accelerate near-term solutions to climate hazards, with a particular focus on risks expected to intensify over the next **10–15 years**. The announcement outlined awards of **₹15 lakh, ₹10 lakh, and ₹5 lakh**, and emphasised that the programme would extend beyond prize recognition to active support for scaling pathways where solutions demonstrate readiness for adoption and commercialisation.

Building on NABARD's earlier innovation initiatives, the Challenge was framed as a step-change in institutional ambition to address climate risks more directly, especially for agriculture and livestock systems. Designed as a **six-month programme**, it seeks to convene technical and entrepreneurial talent across sectors and translate high-potential ideas into implementable, on-ground solutions.

## PV Manufacturing Report

### Report Launch: India's PV Manufacturing & Its Strategic Inflection Points

**The report was formally launched by Shri Santosh Sarangi, Secretary, Ministry of New and Renewable Energy, Government of India, with Dr Vibha Dhawan, Director General, The Energy and Resources Institute (TERI), present at the launch**. Developed by TERI, the report provides a strategic assessment of India's solar photovoltaic (PV) manufacturing ecosystem and examines the policy, financing, and industrial interventions required to strengthen India's global competitiveness across the solar value chain.
**The report situates India's solar opportunity within a context of unprecedented resource abundance,** drawing on TERI's macro-level reassessment of the country's solar potential. It highlights that India's aggregate solar potential—spanning ground-mounted, rooftop, and emerging deployment pathways—fundamentally shifts the strategic question facing policymakers and industry. Rather than focusing solely on deployment capacity, the report emphasises the importance of capturing domestic economic value through manufacturing, technology development, skills, and resilient supply chains, while ensuring the continued affordability of electricity for households and industry.

## Looking Ahead: From Launches to Lasting Impact

Together, these launches underscore BCF 2026's role as a platform not only for dialogue, but for action. The Forum will continue to support the translation of these initiatives into sustained partnerships, investment pipelines, and policy reform—ensuring that India's climate ambition is matched by execution at scale.

## Plan for 2027

Looking ahead to BCF 2027, the Forum will focus on operationalizing these launches and scaling impact across five strategic priorities: analytics and policy advocacy, investment and technology mobilization, global partnerships under the "India Plus Many" strategy, new agendas for climate and industrial innovation, and expansion of BCF's reach and influence. The emphasis will be on converting frameworks, platforms, and partnerships into measurable progress on the ground—across manufacturing capacity, financing flows, and international collaboration.

This journey will culminate in a BCF Week 2027, envisioned as a high-profile, multi-day convening to consolidate achievements, showcase India's leadership in cleantech manufacturing, climate resilience, and air quality solutions, and deepen partnerships with domestic and global stakeholders. Together, these efforts position the Bharat Climate Forum as a catalyst for India's climate decade—bridging vision and implementation to deliver inclusive, resilient, and globally relevant outcomes.

# Bharat Cleantech Manufacturing Implementation Plan: Conclusion of BCF 2026 and the Road Ahead

| STRATEGIC PRIORITIES | KEY FOCUS AREAS |
|---|---|
| Analytics and Policy Advocacy for Cleantech Manufacturing | • Advocate adoption of the Cleantech Manufacturing Blueprint across Union and state governments.<br>• Establish a CEO Council to guide and support cleantech policy reform.<br>• Create a structured engagement platform for parliamentarians and policy influencers.<br>• Organize expert workshops and roundtables to build consensus on priority reforms. |
| Mobilization of Investments and Technology Transfer | • Operationalize the Cleantech Manufacturing Technology and Investment Accelerator with Invest India.<br>• Conduct bilateral outreach with East Asia, West Asia, Nordic countries, the EU, and the UK.<br>• Engage 4–5 Indian states to catalyze manufacturing capacity and EoDB reforms.<br>• Launch a start-up-focused cleantech manufacturing R&D fund.<br>• Mobilize domestic capital from banks, NBFCs, institutional investors, and capital markets. |
| Operationalize the "India Plus Many" Strategy | • Engage Southeast Asia, Africa, and Latin America to secure critical materials and markets.<br>• Leverage platforms such as BRICS Plus, AI4Impact, and the India–Africa Forum Summit.<br>• Partner with island nations on climate resilience and energy transition solutions. |
| Build New Agendas for Climate and Industrial Innovation | • Develop analytics and feasibility studies for SMRs and nuclear component manufacturing.<br>• Identify Atmanirbhar mitigation and localization opportunities across industrial sectors.<br>• Advance a domestic climate resilience agenda integrating industrial innovation. |
| Expand BCF Reach and Impact | • Deepen engagement with UN agencies, MDBs, and global institutions on strategic climate issues.<br>• Expand BCF presence at national, regional, and global climate and energy convenings.<br>• Prepare and deliver a high-profile BCF Week 2027 to consolidate outcomes and partnerships. |

(Figure: BCF 2026 – Plan Ahead)

As BCF 2026 concludes, the Forum enters a decisive implementation phase. In the run-up to BCF 2027, the Bharat Climate Forum will focus on five strategic priorities aimed at translating ambition into execution and positioning India as a global leader in climate-aligned industrial growth. These priorities reflect a deliberate shift from convening to delivery, anchored in policy influence, capital mobilisation, global partnerships, and innovation.

## Strategic Priorities for BCF 2026–27

### 1. Analytics and Policy Advocacy for Cleantech Manufacturing

This priority will focus on driving evidence-based reforms to accelerate domestic manufacturing across priority clean technology value chains. The objective is to ensure that industrial policies, incentives, and regulatory frameworks are aligned with India's climate and economic goals and translated into on-ground outcomes.

**Key initiatives include:**

- Advocating adoption of the Cleantech Manufacturing Blueprint at Union and state levels
- Establishing a CEO Council to guide and strengthen policy reform efforts
- Creating structured engagement platforms for parliamentarians and policymakers
- Convening expert workshops and roundtables to build consensus on priority reforms

**2. Mobilisation of Investments and Technology Transfer**

BCF will act as a catalytic platform to unlock the capital and capabilities required to scale India's cleantech manufacturing ecosystem. The focus will be on converting policy intent into investable pipelines and technology partnerships.

**Key initiatives include:**

- Operationalising the Cleantech Manufacturing Technology and Investment Accelerator with Invest India
- Conducting targeted bilateral outreach with partners in East Asia, West Asia, the EU, the UK, and Nordic countries
- Engaging 4–5 strategic Indian states to catalyse manufacturing capacity and Ease of Doing Business reforms
- Supporting a start-up-focused cleantech manufacturing R&D fund
- Mobilising domestic capital from banks, NBFCs, institutional investors, and capital markets

**3. Operationalising the "India Plus Many" Global Strategy**

This priority will position India at the centre of diversified and resilient global clean technology and critical materials supply chains. The objective is to deepen strategic partnerships while expanding global markets for Indian climate solutions.

**Key initiatives include:**

- Engaging Southeast Asia, Africa, and Latin America to secure critical materials and market access
- Leveraging platforms such as BRICS Plus, AI4Impact, and the India–Africa Forum Summit for climate–industrial diplomacy
- Partnering with island nations on climate resilience and energy transition solutions aligned with Indian capabilities

**4. Building New Agendas for Climate and Industrial Innovation**

BCF will prepare India for the next frontier of climate and industrial transformation by identifying emerging technologies and mitigation opportunities that can anchor long-term competitiveness.

**Key initiatives include:**

- Developing analytics and feasibility studies for Small Modular Reactors and nuclear component manufacturing
- Identifying Atmanirbhar mitigation and localisation opportunities across hard-to-abate industrial sectors
- Advancing a domestic climate resilience agenda that integrates industrial innovation with sustainability

**5. Expanding BCF's Reach and Institutional Impact**

This priority will strengthen BCF's role as India's premier platform for climate–industrial strategy, both nationally and globally, amplifying India's voice and consolidating partnerships that drive implementation.

**Key initiatives include:**

- Deepening engagement with UN agencies, multilateral development banks, and global institutions
- Expanding BCF's presence at national, regional, and global climate and energy convenings
- Preparing and delivering a high-impact BCF Week 2027 to showcase leadership and unlock partnerships

Together, these five strategic priorities mark the evolution of the Bharat Climate Forum from a convening platform to a catalyst for action. By aligning policy, capital, technology, and global partnerships, BCF will help operationalise India's climate and industrial ambitions while advancing an **"India Plus Many"** vision for inclusive, resilient growth. The journey to BCF 2027 will be defined not by dialogue alone, but by measurable progress on the ground.

# Strategic Partners and Collaborators

## KNOWLEDGE PARTNER

## ROUNDTABLE PARTNER

# ANNEXURE 1

## Annexure I: Bharat Climate Forum 2025 – Foundations and Outcomes

### Overview

The **Bharat Climate Forum (BCF)** was established in 2025 as India's national platform to align climate ambition with economic priorities and accelerate the transition from vision to implementation. Hosted by the **Council for International Economic Understanding (CIEU)** in collaboration with **Dalberg Advisors**, BCF convenes senior leaders from government, industry, finance, multilateral institutions, and the technical ecosystem to advance *Swadeshi* climate solutions rooted in domestic innovation, industrialisation, and strategic global engagement.

The inaugural **BCF 2025**, held in January 2025, marked a decisive starting point for the Forum. It brought together over **300 participants** across government, industry, finance, and global institutions, with a clear focus on scaling cleantech manufacturing as a pillar of India's **net-zero 2070** and **Viksit Bharat 2047** ambitions.

A defining outcome of BCF 2025 was the launch of the **Bharat Cleantech Manufacturing Platform (BCMP)** by **Shri Piyush Goyal**, Hon'ble Union Minister of Commerce and Industry. The BCMP established a strategic coalition to advance indigenisation across critical clean technology value chains—including solar, wind, batteries, e-mobility, green hydrogen, transmission infrastructure, and bioenergy—laying the foundation for a coordinated national approach to climate-aligned industrial growth.

## Context and Rationale

### Climate Action as an Economic Imperative

India's aspiration to achieve developed-country status by **2047** and **net-zero emissions by 2070** will require sustained **8–10% annual GDP growth**, driven by digital and green transitions. Traditional growth models—reliant on high-carbon energy, outdated technologies, and resource-intensive mobility and industrial systems—are no longer viable. Persistently high emissions could reduce India's GDP by nearly **25% by 2070**, underscoring the necessity of integrated climate action for long-term competitiveness, resilience, and export readiness.

A core pillar of this transition is the electrification of the economy and the rapid shift to cleaner energy systems. Power demand is projected to reach **708 GW by 2047**, necessitating nearly **2,100 GW of installed capacity**, with a **90% non-fossil energy mix**. Significant investment will be required in grid modernisation, storage, and digital integration, including the use of **AI, IoT, and blockchain** to enable a Digital Energy Grid capable of reducing system costs by up to **25%**. Green molecules—such as biogas, sustainable fuels, and green hydrogen—will play a critical role in decarbonising hard-to-abate sectors while supporting industrial growth and employment.

### Adaptation and Resilience: A Parallel Priority

India remains highly vulnerable to climate risks, with over **80% of its population** residing in regions exposed to extreme weather and slow-onset hazards. Climate shocks are already imposing substantial economic losses and disproportionately affecting smallholder

farmers, informal workers, and the urban poor. While adaptation spending has increased, it remains insufficient relative to projected risks, necessitating a whole-of-society approach as envisaged under the **National Adaptation Plan**.

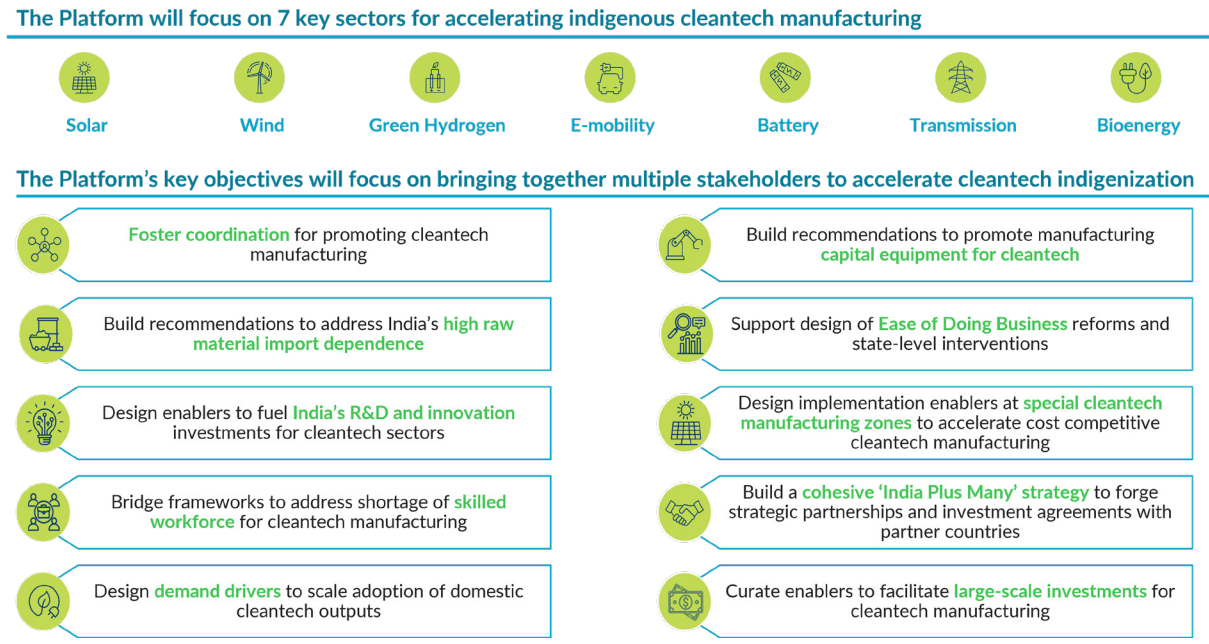
Public institutions, private enterprises, research bodies, start-ups, and the financial sector are increasingly collaborating to develop resilience solutions and innovative financing and insurance instruments. Climate-proofing India's growth trajectory is now essential to safeguarding productivity, infrastructure, and livelihoods.

## Make in India Climate Solutions: From Choice to Necessity

In a global context marked by fractured supply chains, rising techno-nationalism, and volatile trade regimes, reliance on imported climate technologies has become a strategic vulnerability. As countries increasingly weaponise access to critical minerals and clean technologies, climate solutions have acquired geopolitical significance comparable to that of fossil fuels.


India's response is clear: **build domestically, at scale, and with speed**. *Make in India* climate solutions are not solely about economic self-reliance, but about securing the foundations of a low-carbon future in an increasingly contested global environment.

India has already made notable progress, achieving its **50% non-fossil capacity target five years ahead of schedule**, while maintaining low per capita emissions. Policy initiatives—including the **National Manufacturing Mission**, carbon credit trading mechanisms, lower GST rates, stricter domestic content requirements, and measures to secure critical minerals and promote circularity—are strengthening the cleantech ecosystem. Targeted fiscal incentives and R&D support are further accelerating indigenous innovation and supply chain resilience.




These efforts align closely with the Hon'ble Prime Minister's call for *Swadeshi* and *Atmanirbhar Bharat*. Grounded in global interdependence, India's approach to climate manufacturing emphasises collaboration with international partners for access to finance, technology, and markets, while retaining strategic control over core capabilities.

## BCF 2025: From Convening to Collective Action

BCF 1.0, inaugurated by **Shri Ashwini Vaishnaw**, Hon'ble Union Minister, marked the formal establishment of the Forum as a trusted national platform. The launch of the **Bharat Cleantech Manufacturing Platform (BCMP)** anchored BCF's early focus on manufacturing-led climate action.

Within its first year, BCF translated dialogue into action. It contributed to the policy discourse underpinning the **National Manufacturing Mission**, adopted in the Union Budget 2025, and produced over **ten cross-cutting knowledge products**. The Forum convened technical roundtables on financing, raw materials, skilling, and demand creation, ensuring alignment between ministries, industry, and financiers.

Sector-specific indigenisation pathways developed through BCF 2025 are now informing policymaking and investment decisions, reinforcing the Forum's role as a credible mechanism for collective action across the climate–industrial ecosystem.

## Laying the Groundwork for BCF 2.0


The momentum generated by BCF 2025 created the foundation for **BCF 2.0**, expanding the Forum's mandate beyond manufacturing to embed **adaptation and resilience** into India's growth strategy. As India enters a decisive phase where ambition must translate into delivery, the priorities seeded at BCF 2025 are being scaled through structured implementation plans, investment and technology accelerators, and deeper global partnerships.

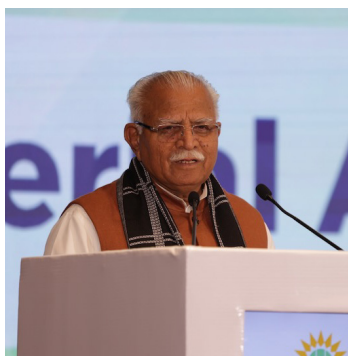
BCF 2026 builds on this foundation to advance a dual agenda: scaling *Make in India* cleantech manufacturing for global competitiveness, and showcasing low-cost, scalable resilience solutions for India and the Global South. Together, these strands position the Bharat Climate Forum as a central platform for aligning self-reliance, resilience, and international cooperation—ensuring that India's climate leadership delivers tangible outcomes at home while offering credible models for the world.

# Meet The Speakers

## Hon'ble Shri C.P. Radhakrishnan, Vice President of India

**Shri Chandrapuram Ponnusami Radhakrishnan** (born 4 May 1957) is an Indian politician serving as the **15th Vice President of India** since **12 September 2025**. He has previously served as **Governor of Maharashtra, Jharkhand and Telangana**, and as **Lieutenant Governor of Puducherry**. His public life began as a **State Executive Committee Member of the Bharatiya Janasangh in 1974**. He later served as **Secretary of the Bharatiya Janata Party (BJP), Tamil Nadu, in 1996**, and was elected **Member of Parliament (Lok Sabha) from Coimbatore in 1998 and 1999**. During his parliamentary tenure, he was a member of the **Parliamentary Committee on Public Sector Undertakings**, the **Consultative Committee on Finance**, and the **Parliamentary Special Committee on the Stock Exchange Scam**. In **2004**, he was part of the **first Parliamentary Delegation to Taiwan** and subsequently served as **State President of the BJP in Tamil Nadu from 2004 to 2007**. In **2016**, he was appointed **Chairman of the Coir Board, Kochi**, a position he held for **four years**

## Hon'ble Shri Manohar Lal Khattar, Minister of Power, Housing & Urban Affairs, Government of India (GoI)



**Hon'ble Shri Manohar Lal Khattar** is the Union Minister for **Power** and **Housing & Urban Affairs**, Government of India. He previously served as the **Chief Minister of Haryana** for two consecutive terms (2014–2024), where he led wide-ranging reforms in governance, infrastructure development, urban planning, power sector efficiency, and digital service delivery. As Chief Minister, he was known for strengthening administrative systems, improving transparency, and focusing on inclusive development.

At the national level, Shri Khattar is responsible for advancing power sector reforms, renewable energy integration, urban infrastructure, housing for all, and sustainable urbanisation. With a strong background in organisation-building and public administration, his work reflects a focus on institutional reform, citizen-centric governance, and long-term infrastructure-led growth.

## Hon'ble Dr. Sanjay Jaiswal, Member of Parliament & Chief Whip of BJP & Trustee Climate Parliament

**Dr. Sanjay Jaiswal** is a medical professional-turned-parliamentarian and a senior leader of the Bharatiya Janata Party (BJP). He has been a Member of Parliament representing **Paschim Champaran, Bihar**, since 2009 and currently serves as the **Chief Whip of the BJP in the Lok Sabha**, playing a central role in legislative coordination and parliamentary strategy. He has also served as **President of the BJP's Bihar unit**, contributing to organisational strengthening and electoral strategy at the state level. Trained as a physician (MBBS, MD), Dr. Jaiswal has brought a strong focus on public health, institutional governance, and development policy to his parliamentary work. He has held key responsibilities as **Chairperson of the Estimates Committee** and as a member of several parliamentary committees, and has served on the governing bodies of institutions such as **AIIMS Patna and JIPMER, Puducherry**. As a **Trustee of the Climate Parliament**, he actively engages in dialogue on climate action, clean energy, and sustainable development, advocating the integration of environmental priorities with economic growth and public policy.

## Hon'ble Dr. Sandeep Pathak, Member of Parliament, Rajya Sabha

**Dr. Sandeep Pathak** is a **Member of Parliament in the Rajya Sabha**, with a professional journey spanning **policy research, political strategy, and public service**. Trained as a policy professional, he has worked extensively on governance, electoral strategy, and institutional capacity-building, contributing to evidence-based policymaking and organisational development. Prior to his election to Parliament, he was actively involved in political mobilisation, public outreach, and strategic planning, playing a key role in strengthening democratic processes and political institutions. As a Rajya Sabha Member, Dr. Pathak brings his research-driven and grassroots-informed experience to legislative work, parliamentary committees, and policy debates, with a focus on governance reforms, accountability, and inclusive national development.

## Hon'ble Shri Gaurav Pardhi, MLA Madhya Pradesh

**Shri Gaurav Singh Pardhi** is an Indian politician and **Member of the Madhya Pradesh Legislative Assembly from the Katangi Assembly constituency (Balaghat)**, elected in the **2023 Madhya Pradesh Assembly election** as a candidate of the **Bharatiya Janata Party (BJP)**. He secured a majority of votes and represents his constituency in the state legislature. According to his election affidavit, he is a **post-graduate by education**, engaged in **tenancy and income from service in the private sector**, and declared assets and liabilities in his public disclosure. As an MLA, he participates in legislative functions and constituency development, including engagement on regional development and governance matters.

## Hon'ble Shri Divya Raj, MLA Madhya Pradesh

**Shri Divyaraj Singh** has been elected **three times to the Madhya Pradesh Legislative Assembly from the Sirmour Assembly constituency** (2013, 2018, 2023) on a **Bharatiya Janata Party (BJP)** ticket, demonstrating sustained electoral support in his constituency. His successive victories, with increasingly larger margins, reflect his political presence and engagement with the electorate. In addition to his legislative role, he is noted locally for advocating development initiatives in his constituency, including **support for education and skill development infrastructure such as establishment of a college and ITI**, **improvements in health facilities**, and **promotion of irrigation projects and rural connectivity**, which have contributed to addressing infrastructure gaps in the largely rural and agrarian Sirmour region.

## Hon'ble Smt. Anita Bhadel, Member of Legislative Assembly, Rajasthan

Smt. Anita Bhimsingh Bhadel (born 23 December 1972) is an Indian politician and four-time **Member of the Rajasthan Legislative Assembly** representing the **Ajmer South (SC) constituency** since 2008. She began her political career as a corporator in Ajmer in 1997 and within a year became **Chairperson of the Ajmer Municipal Corporation**. She was first elected as an MLA in 2008 and has since been re-elected consecutively, defeating major opponents in each election. From 2014 to 2018, she served as **Minister of State (Independent Charge) for Women and Child Development in the Government of Rajasthan**, where she focused on policies for women and children and was honoured with the **Nari Shakti Puraskar in 2017** for her contributions to women's empowerment. Throughout her legislative career, she has been actively involved in constituency development, advocacy on social issues and community engagement, and was recognised as one of the **best performing MLAs in the Rajasthan Assembly**.

## Hon'ble Shri Rohit Bohra, MLA Rajasthan

Shri Rohit Bohra (born 30 May 1966) is an Indian politician of the **Indian National Congress** and has been serving as a **Member of the Rajasthan Legislative Assembly** from the **Rajakhera constituency in Dholpur district** since 2018, having been re-elected in 2023. Prior to his legislative role, he served in key organisational positions within the Congress Party, including **President of the District Congress Committee, Dholpur**, **Secretary and General Secretary of the Rajasthan Pradesh Congress Committee**, and was elected as a **Member of the All India Congress Committee**. He holds academic qualifications in **Commerce and Management (B.Com, MBA)** and has been actively involved in constituency development and party organisation.

## Dr. Shikha Meel Barala, Member of the Rajasthan Legislative Assembly

Dr. Shikha Meel Barala (born 11 September 1983) is an Indian politician and medical professional serving as a **Member of the Rajasthan Legislative Assembly** from the **Chomu constituency** since 15 December 2023. A member of the **Indian National Congress**, she began her career as a physician after completing her **MBBS from Sawai Man Singh Medical College** and postgraduate training in Obstetrics and Gynaecology, specialising in infertility treatment and laparoscopic surgery. Before entering electoral politics, she practised as a consultant gynaecologist at Barala Hospital and Research Centre in Chomu, focusing on women's health and maternal care. In the 2023 Assembly elections, she contested from Chomu and defeated the incumbent, becoming the first woman MLA from the constituency. Beyond her legislative role, she has been active in party organisation and constituency development.

## Hon'ble Shri Santosh Sarangi, Secretary, Ministry of New and Renewable Energy, Government of India

Shri Santosh Sarangi is an **Indian Administrative Service (IAS) officer of the 1994 batch (Maharashtra cadre)** and currently serves as **Secretary, Ministry of New and Renewable Energy (MNRE), Government of India**. He has previously held key leadership roles in the Government of India, including positions in **the Ministry of Power**, where he contributed to policy formulation and implementation in the energy sector, and in **the Ministry of Petroleum and Natural Gas**, focusing on energy governance and reforms. He has also served in important administrative and policy roles at the state level, strengthening governance and public service delivery.

## Hon'ble Ms. Nivruti Rai, Managing Director & Chief Executive Officer, Invest India, Government of India

Ms. Nivruti Rai is a distinguished Indian technology and business leader serving as **Managing Director and Chief Executive Officer of Invest India**, the national investment promotion and facilitation agency under the Ministry of Commerce and Industry, since **July 2023**. She spent nearly **29 years at Intel Corporation**, where she held various leadership roles and most recently served as **Country Head of Intel India and Vice President of Intel Foundry Services**, driving growth, investment, and technology development in the Indian market. During her tenure at Intel, she contributed significantly to indigenous technology development, the electronics manufacturing ecosystem, and policy formulation in critical and emerging technologies. She has been part of leadership teams in industry bodies and government committees, working closely with industry associations, business leaders, and policymakers. Ms. Rai is a recipient of the **Nari Shakti Puraskar**, India's highest civilian honour for women, for her contributions to technology. She also serves as **President of the World Association of Investment Promotion Agencies (WAIPA)**, advancing global investment promotion cooperation.

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## H.E. Damilola Ogunbiyi, CEO and Special Representative of the UN Secretary-General (UN SRSG) for Sustainable Energy for All, and Co-Chair of UN-Energy

**H.E. Damilola Ogunbiyi** is the Chief Executive Officer and Special Representative of the UN Secretary-General (SRSG) for **Sustainable Energy for All (SEforALL)** and Co-Chair of **UN-Energy**, providing strategic leadership and coordination for the UN system's global energy agenda. She leads international efforts to expand universal access to affordable, reliable, and clean energy, accelerate renewable energy deployment and energy efficiency, and advance just and inclusive energy transitions aligned with climate and development goals. She mobilises public and private finance and forges global partnerships, working closely with governments, multilateral development banks, international financial institutions, and the private sector, particularly in developing and energy-poor countries. She represents the UN in high-level global forums on energy, climate, and sustainable development, promoting coherence across UN agencies. Previously, she served as Managing Director of Nigeria's Rural Electrification Agency, where she significantly expanded electricity access through policy reform, off-grid solutions, and private sector participation.

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## H.E. Selwin Hart, Assistant Secretary General and Senior Advisor for Climate to the United Nations Secretary-General

**Mr. Selwin Hart** is the **Assistant Secretary-General of the United Nations and Senior Adviser for Climate Action to the UN Secretary-General**, providing strategic direction and coordination of the UN system's global climate agenda. He supports implementation of the **Paris Agreement**, advances **Nationally Determined Contributions (NDCs)**, strengthens climate adaptation and resilience, and mobilises climate finance for developing and climate-vulnerable countries. He coordinates UN engagement with governments, multilateral development banks, financial institutions, the private sector, and civil society, and is actively involved in **UNFCCC COPs, Climate Ambition Summits, and SDG-related high-level forums**. He oversees UN climate initiatives for mitigation, adaptation, and just transition, while promoting coherence across UN agencies on climate and development. Previously, he served as **Special Adviser to the Secretary-General on Climate Action** and held senior UN roles on sustainable development, small island developing states, and climate resilience. His work is recognised for advancing **equity-based climate action, international cooperation, and integration of climate priorities into global governance**.
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## Johannes Zutt, Vice-President, South Asia, World Bank Group

**Johannes Zutt** is the **Vice President for South Asia at the World Bank Group**, overseeing the Bank's engagement with **Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka**. He manages a portfolio of projects and financial resources focused on **inclusive growth, human capital development, climate and disaster resilience, infrastructure, and private sector mobilisation**. He leads consultations with governments, multilateral partners, and private stakeholders to align World Bank initiatives with national development priorities and regional strategies. Mr. Zutt has held senior positions in the World Bank, including **Country Director for Brazil** and **Country Director for Bangladesh, Bhutan, and Nepal**, as well as leadership roles in operational strategy, results, and risk management. His work focuses on **strengthening partnerships, promoting sustainable economic growth, and enhancing development impact in South Asia**.

## Franziska Ohnsorge, Chief Economist, South Asia Region, World Bank Group

Franziska Ohnsorge is the World Bank Chief Economist for South Asia. In this role, she is responsible for leading the research program on key economic issues in South Asia to inform the policy debate and World Bank operations. Before starting this position, she was the Manager at the Development Economics Vice Presidency where she spearheaded the flagship Global Economic Prospects report. Prior to joining the World Bank, Franziska Ohnsorge worked in the Office of the Chief Economist of the European Bank for Reconstruction and Development and at the International Monetary Fund. Her research has been featured in peer-reviewed journals as well as policy publications and has covered a wide range of topics in international macroeconomics and finance, including debt and financial crises, inflation and monetary policy, as well as growth and informal labor markets. Her work has been widely cited, including in the Economist, the Wall Street Journal, and the Financial Times. She holds a Ph.D. from the University of Toronto.

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## Diane Jegam, Regional Director- South Asia, Proparco

**Ms. Diane Jegam** is the **Regional Director for South Asia at Proparco**, the private sector financing arm of the **Agence Française de Développement (AFD) Group**. In this role, she leads Proparco's strategic engagement across South Asia, overseeing investments that support **sustainable private sector growth**, with a focus on **climate finance, renewable energy, financial inclusion, infrastructure, agribusiness, and impact-driven enterprises**. She is responsible for expanding Proparco's portfolio in the region, strengthening partnerships with governments, development finance institutions, banks, and the private sector, and advancing high-impact projects aligned with the **Sustainable Development Goals (SDGs)** and the **Paris Agreement**. Ms. Jegam plays a key role in mobilising long-term capital for inclusive development, promoting responsible investment practices, and supporting green and resilient economic growth across South Asia.

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## Shilpa Kumar, Managing Director and Head of India, British International Investment (BII)

**Shilpa Kumar** is the **Managing Director and Head of India at British International Investment (BII)**, the UK's development finance institution. In this role, she leads BII's strategy and investment operations in India, overseeing a diversified portfolio focused on **climate finance, renewable energy, financial services, infrastructure, healthcare, and inclusive private sector growth**. She is responsible for deepening partnerships with governments, investors, and businesses, and for deploying long-term capital aligned with the **Sustainable Development Goals** and climate transition objectives. With extensive experience in development finance and investment management, she plays a key role in advancing **sustainable, resilient, and inclusive economic development** in India through private sector–led solutions.

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## Shalabh Tandon, South Asia Regional Head of Operations & Climate Change, IFC

**Shalabh Tandon** is the **South Asia Regional Head of Operations and Climate Change at the International Finance Corporation (IFC)**, the private sector arm of the **World Bank Group**. In this role, he leads IFC's investment and advisory operations across South Asia, with a strong focus on **climate finance, sustainable infrastructure, clean energy, and private sector–led development**. He is responsible for advancing IFC's climate strategy in the region, mobilising private capital for low-carbon and climate-resilient projects, and strengthening partnerships with governments, financial institutions, and corporates. Mr. Tandon plays a key role in aligning IFC's South Asia portfolio with the **Paris Agreement** and the **Sustainable Development Goals**, supporting inclusive growth, green transitions, and scalable climate solutions across the region.

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## Ashish Khanna, Director General, International Solar Alliance

Ashish Khanna is an Indian development and infrastructure professional serving as the Director General of the International Solar Alliance (ISA). He has extensive experience in renewable energy, climate finance, and international development, with a career spanning multilateral institutions, policy advisory roles, and large-scale infrastructure programmes. Prior to his appointment at ISA, he worked with international organisations including the World Bank Group, where he was involved in projects related to energy access, sustainable infrastructure, and climate resilience. As Director General, he leads the Alliance's efforts to promote solar energy deployment, mobilise finance, and support capacity building across member countries, particularly in the Global South.

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## Mohamed Nasheed, Secretary-General, Climate Vulnerable Forum–V20 Secretariat

Mohamed Nasheed (born 17 July 1967) is a Maldivian statesman and climate advocate serving as the Secretary-General of the Climate Vulnerable Forum–V20 Secretariat. He previously served as President of the Republic of Maldives and has been internationally recognised for his leadership on climate change, democratic governance, and sustainable development. Over the course of his public career, he has played a prominent role in amplifying the voices of climate-vulnerable nations on global platforms, advocating for ambitious climate action, climate finance, and resilience-building measures. As Secretary-General of the CVF–V20, he leads collective efforts of vulnerable countries to influence global climate policy, promote climate-resilient development pathways, and strengthen international cooperation.

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## Michael Steidl, Head of Regional Representation to South Asia, European Investment Bank

Michael Steidl is a senior development finance professional serving as the Head of Regional Representation to South Asia at the European Investment Bank (EIB). He has extensive experience in international finance, infrastructure investment, and development cooperation, with a focus on emerging markets. In his role at EIB, he leads engagement with governments, financial institutions, and development partners across South Asia to support investments in sustainable infrastructure, climate action, renewable energy, and urban development. His work contributes to advancing the European Investment Bank's mandate of promoting inclusive growth and environmental sustainability through long-term financing and strategic partnerships in the region.

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## Anand Shah, Partner–US, The Asia Group

Anand Shah is a policy and business advisory professional serving as Partner–US at The Asia Group, a strategic advisory firm specialising in the Asia-Pacific region. He has extensive experience in government affairs, international relations, and market entry strategy, advising multinational companies on geopolitical risk, regulatory developments, and public policy across Asia. Prior to joining The Asia Group, he held senior roles in the public and private sectors, contributing to policy analysis and strategic engagement between governments and industry. In his current role, he supports corporate leadership in navigating complex political and economic environments in the region.

## Hemang Jani, Senior Advisor to the Indian Executive Director, World Bank Group

Hemang Jani is a development finance and policy professional serving as Senior Advisor to the Indian Executive Director at the World Bank Group. He has extensive experience in international development, multilateral engagement, and economic policy, with a focus on development finance, infrastructure, and institutional reforms. In his advisory role, he supports India's engagement with the World Bank Group, contributing to policy analysis, strategic inputs, and coordination on projects and initiatives aligned with national development priorities. His work involves close collaboration with government stakeholders and international partners to advance inclusive and sustainable development outcomes.

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## Amitabh Kant, Senior Advisor, Fairfax Financial & Former G20 Sherpa, Government of India

**Amitabh Kant** is a former Indian Administrative Service (IAS) officer (Kerala Cadre, 1980 batch) and a leading architect of India's economic and policy reforms. He served as India's G20 Sherpa during its Presidency year and as Chief Executive Officer of NITI Aayog, the Government of India's premier policy think tank, where he provided strategic leadership on growth, innovation, industrial policy, and sustainable development. Earlier, he held key roles including Secretary, Department of Industrial Policy and Promotion (DIPP), CEO of the Delhi–Mumbai Industrial Corridor, Joint Secretary (Tourism), Government of India, Secretary (Tourism), Government of Kerala, and District Collector of Kozhikode He also played a central role in shaping flagship national initiatives such as **Make in India**, **Startup India**, **Incredible India**, and **God's Own Country**, strengthening India's and Kerala's global positioning in manufacturing, tourism, and investment. He is the author of *Branding India – An Incredible Story* and *Incredible India 2.0*, and editor of *The Path Ahead: Transformative Ideas for India.*

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## Bhupinder Bhalla, Former Secretary, Ministry of New and Renewable Energy (MNRE), Government of India (GoI)

**Bhupinder Bhalla** is a former **Secretary, Ministry of New and Renewable Energy (MNRE), Government of India**, and a senior Indian Administrative Service officer with extensive experience in policy formulation, programme implementation, and sectoral reforms. During his tenure at MNRE, he led initiatives to expand India's **solar, wind, and off-grid renewable energy capacity**, strengthen regulatory and institutional frameworks, promote **public-private partnerships**, and foster research, innovation, and technology development in clean energy. He guided efforts to enhance renewable energy access, mobilise investment, and engage with **multilateral and international partners** on climate finance and clean energy cooperation. His contributions have been instrumental in advancing India's renewable energy agenda, supporting **energy security, inclusive growth, and climate commitments under the Paris Agreement**.

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## Dr Shamika Ravi, Member, Prime Minister's Economic Advisory Council

**Dr. Shamika Ravi** is an economist and public policy expert and serves as a **Member of the Economic Advisory Council to the Prime Minister (EAC-PM), Government of India**. She has held senior research and leadership roles in policy institutions and has been associated with **Brookings India** as Director of Research, where she led work on macroeconomics, labour markets, financial inclusion, social protection, and development economics. Her professional work focuses on evidence-based policy analysis, welfare delivery, health and nutrition outcomes, gender, and employment. Dr. Ravi has contributed extensively to national policy discourse through research, advisory roles, and engagement with government ministries, international organisations, and multilateral institutions. She has published widely in academic journals and policy platforms and is a regular contributor to public debates on economic reforms and development policy. Her work has played an important role in strengthening data-driven decision-making and advancing inclusive and sustainable economic growth in India.
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## Anantha Nageswaran, Chief Economic Advisor, Government of India (GoI)

**Dr. V. Anantha Nageswaran** is an economist and serves as the **Chief Economic Adviser (CEA) to the Government of India**. He plays a key role in advising the Government on macroeconomic policy, fiscal and monetary coordination, and medium- to long-term economic strategy, and leads the preparation of the **Economic Survey of India**. Prior to his current role, he has had a distinguished career spanning academia, policy advisory, and financial markets, with experience in economic research, global macro analysis, and risk management. Dr. Nageswaran has been associated with academic and policy institutions and has contributed extensively to public discourse through research, publications, and commentary on economic growth, financial stability, and development. His work as CEA supports evidence-based policymaking and informed economic decision-making in support of India's growth and reform agenda.
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## Kamal Kishore, Special Representative of the UNSG (SRSG) for Disaster Risk Reduction & Head of the United Nations Office for Disaster Risk Reduction (UNDRR)

**Mr. Kamal Kishore** serves as the **Special Representative of the United Nations Secretary-General (SRSG) for Disaster Risk Reduction** and is the **Head of the United Nations Office for Disaster Risk Reduction (UNDRR)**. In this role, he provides global leadership on disaster risk reduction, overseeing implementation of the **Sendai Framework for Disaster Risk Reduction (2015–2030)** and promoting risk-informed development across countries and institutions. He leads UNDRR's engagement with governments, multilateral organisations, international financial institutions, the private sector, and civil society to strengthen disaster resilience, preparedness, and risk governance. Prior to his appointment, he held senior positions in disaster management and resilience-building, contributing to national and international policy frameworks on disaster risk reduction, climate resilience, and sustainable development. His work focuses on integrating disaster risk considerations into development planning, strengthening early warning systems, and enhancing global cooperation to reduce disaster losses and protect lives and livelihoods.
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## Shri Montek Singh Ahluwalia, Senior Economist & Former Deputy Chair, Planning Commission of India

**Dr. Montek Singh Ahluwalia** is a senior economist and public policy expert and served as **Deputy Chairman of the Planning Commission of India**. He played a central role in shaping India's economic planning and reform agenda, including formulation of the **Tenth, Eleventh and Twelfth Five Year Plans**, with a focus on economic growth, poverty reduction, and inclusive development. Over his career, he has held key positions in the Government of India and international financial institutions, contributing to macroeconomic policy, fiscal reform, and development strategy. Dr. Ahluwalia has been closely associated with economic liberalisation, institutional reform, and policy coordination between the Centre and States. He continues to contribute to public policy discourse through advisory roles, research, and engagement with national and international economic forums, with his work recognised for strengthening India's development planning and economic governance.

## Gauri Singh, Deputy Director General, International Renewable Energy Agency (IRENA)

**Ms. Gauri Singh** serves as **Deputy Director-General of the International Renewable Energy Agency (IRENA)**, where she provides strategic leadership on global renewable energy transition, policy frameworks, and international cooperation. In this role, she oversees IRENA's technical, analytical, and programmatic work supporting member countries in scaling up renewable energy deployment, strengthening energy transition policies, and mobilising finance and investment. She plays a key role in advancing global initiatives on **energy transition, decarbonisation, climate action, and sustainable development**, and leads engagement with governments, multilateral institutions, and international stakeholders. Prior to joining IRENA, she held senior leadership positions in the **World Bank Group**, contributing to energy sector reforms, infrastructure development, and climate-related programmes. Her professional work focuses on accelerating clean energy adoption, enhancing energy security, and supporting inclusive and sustainable growth through renewable energy solutions.

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## Umesh Revankar, Executive Vice Chairman, Shriram Finance Limited

**Shri Umesh Revankar** is the **Executive Vice Chairman of Shriram Finance Limited**, one of India's leading retail-focused non-banking financial companies. He plays a pivotal role in providing strategic leadership and oversight of the company's operations, with a strong emphasis on **retail and MSME lending, financial inclusion, and risk management**. Under his leadership, Shriram Finance has strengthened its position in financing **first-time borrowers, small businesses, and underserved segments**, particularly in semi-urban and rural markets. With extensive experience in the financial services sector, Shri Revankar has been instrumental in driving sustainable growth, enhancing governance standards, and expanding access to affordable credit in support of inclusive economic development.

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## Sanjeev Kaushik, Principal Financial Sector Specialist, Asian Development Bank

**Sanjeev Kaushik** is a **Principal Financial Sector Specialist at the Asian Development Bank (ADB)**, where he works on strengthening financial systems and advancing financial sector reforms across developing member countries. In this role, he supports the design and implementation of **financial sector policy reforms, financial inclusion initiatives, capital market development, and financial stability frameworks**. He is involved in providing technical assistance, policy advice, and operational support for ADB's lending and advisory programs, and works closely with governments, regulators, and financial institutions. Mr. Kaushik plays an important role in aligning financial sector development with **sustainable growth, resilience, and inclusive development objectives** in the Asia-Pacific region.

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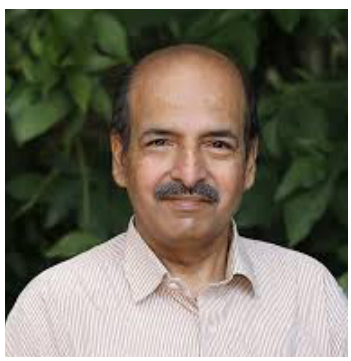
## N.S. Vishwanathan, Non-Executive Chairman, Axis Bank



**N. S. Vishwanathan** is a former central banker and financial sector expert and serves as **Non-Executive Chairman of Axis Bank**. He previously held the position of **Deputy Governor of the Reserve Bank of India**, where he was responsible for banking regulation and supervision, financial stability, and development of the financial system. During his tenure at the RBI, he played a key role in strengthening regulatory frameworks, addressing banking sector stress, improving governance and risk management in banks, and advancing reforms in payment systems and financial inclusion. As Non-Executive Chairman of Axis Bank, he provides strategic oversight on governance, risk management, and regulatory compliance. His professional contributions reflect deep engagement with financial sector regulation, institutional strengthening, and stability of India's banking and financial system.

## Gyanesh Chaudhary, Chairman and Managing Director, Vikram Solar

**Gyanesh Chaudhary** is the Founder of **Vikram Solar** (established in 2006) and a pioneer in the solar energy sector, recognised for advancing environmentally sustainable and scalable clean energy solutions. Under his leadership, Vikram Solar has emerged as one of **India's largest solar PV module manufacturers with 3.5 GW annual production capacity** and a globally reputed provider of photovoltaic modules and EPC solutions, supporting national and global clean energy transitions. The company has been featured in **Fortune India's Next 500 (2023)** as one of India's fastest-growing mid-sized enterprises and is among the most efficient solar module manufacturers in the country, driven by a strong culture of innovation and customer-centricity. He has received multiple national accolades for his contribution to renewable energy, including the **Export Excellence Award (FIEO)**, **Star Performer Award (CBIP)**, and recognitions from the **Economic Times** and **Bengal Chamber of Commerce and Industry (BCC&I)**. He actively promotes human empowerment and community development through education, health, and self-sustaining livelihood initiatives, aligned with the Vikram Group's commitment to social responsibility and sustainable growth.
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## Ashwini Kumar Tewari, Managing Director (Corporate Banking and Subsidiaries), State Bank of India

**Ashwini Kumar Tewari** is the **Managing Director (Corporate Banking and Subsidiaries) of the State Bank of India (SBI)**, India's largest public sector bank. In this role, he is responsible for overseeing SBI's corporate banking operations and its domestic and overseas subsidiaries, with a focus on large corporates, infrastructure financing, project finance, and strategic sectoral lending. He plays a key role in shaping the Bank's corporate credit strategy, strengthening risk management and governance frameworks, and supporting financing for priority sectors aligned with national development objectives. With extensive experience across banking operations, credit, and leadership roles within SBI, Shri Tewari has contributed significantly to enhancing the Bank's balance sheet strength, supporting economic growth, and advancing SBI's role in financing large-scale industrial, infrastructure, and development initiatives.

## Rajnish Kumar, Former Chairperson of State Bank of India

**Rajnish Kumar** is a career banker and former **Chairperson of the State Bank of India (SBI)**, India's largest public sector bank. During his tenure, he led the bank through a critical phase of balance sheet clean-up, resolution of stressed assets, and strengthening of governance and risk management frameworks. He played a key role in advancing SBI's digital transformation, customer-centric banking reforms, and capital consolidation following the merger of associate banks. With decades of experience in banking and financial services, his leadership has been instrumental in stabilising India's banking sector, improving operational efficiency, and reinforcing public sector banking reforms.

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## Sivasubramanian Ramann, Chairman, Pension Fund Regulatory and Development Authority (PFRDA)

**Sivasubramanian Ramann** is the **Chairman of the Pension Fund Regulatory and Development Authority (PFRDA)**, where he oversees regulation and development of India's pension sector and works to strengthen retirement security and long-term savings frameworks. A senior civil servant of the **Indian Audit and Accounts Service (IA&AS)**, he has held key leadership roles across financial regulation and public finance. Prior to PFRDA, he served as **Chairman and Managing Director of the Small Industries Development Bank of India (SIDBI)** and held senior positions in the Government of India, contributing to financial sector reforms, development finance, and institutional governance.

## Ajay Seth, Chairman, Insurance Regulatory and Development Authority of India (IRDAI)

**Ajay Seth** is the **Chairman of the Insurance Regulatory and Development Authority of India (IRDAI)**, responsible for regulating and developing India's insurance sector and strengthening consumer protection and market stability. A senior officer of the **Indian Administrative Service (IAS)**, he has held several key positions in the Government of India, including **Secretary, Department of Economic Affairs**, where he played a central role in macroeconomic management, fiscal policy, and financial sector reforms. His professional experience spans public finance, economic policy, and financial regulation, with a focus on strengthening institutional frameworks and promoting sustainable growth in the financial services sector.

## Prof Abhay Karandikar, Secretary, Department of Science & Technology (DST)

**Prof. Abhay Karandikar** is the **Secretary, Department of Science and Technology (DST), Government of India**, where he leads national efforts to strengthen India's science, technology, and innovation ecosystem. A distinguished academic and technologist, he has played a key role in advancing research policy, digital infrastructure, and indigenous technology development. Prior to his current role, he served as **Director of the Indian Institute of Technology (IIT) Kanpur**, where he led initiatives in research excellence, industry collaboration, and academic innovation. His professional journey reflects a strong focus on bridging academia, industry, and government to promote cutting-edge research, technology-driven growth, and self-reliance in critical scientific domains.

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## Dr Mangi Lal Jat, Secretary, Director General (DG), Indian Council of Agricultural Research (ICAR)

**Dr. Mangi Lal Jat** is the **Secretary, Department of Agricultural Research and Education (DARE), and Director General (DG) of the Indian Council of Agricultural Research (ICAR)**, where he leads India's national agricultural research and innovation system. An internationally recognised agronomist, he has extensive experience in climate-resilient agriculture, sustainable intensification, and food systems transformation. Prior to his current role, he held senior research and leadership positions in national and international agricultural institutions, contributing to advancements in crop productivity, resource efficiency, and farmer-centric innovation. His professional work focuses on strengthening agricultural research, integrating science with policy, and promoting sustainable, climate-smart agricultural practices to enhance food security and rural livelihoods.

## Deepak Bagla, Mission Director, Atal Innovation Mission

**Deepak Bagla** is the **Mission Director of the Atal Innovation Mission (AIM)** at NITI Aayog, where he leads India's flagship initiative to promote innovation, entrepreneurship, and a robust startup ecosystem. He has played a key role in expanding innovation infrastructure across the country through Atal Tinkering Labs, Atal Incubation Centres, and strategic partnerships with academia, industry, and state governments. With extensive experience in investment promotion and institutional leadership, he has worked to strengthen India's innovation-led growth framework and foster technology-driven entrepreneurship.

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## Vikram Shroff, Vice Chairman and Co-CEO, UPL

**Mr. Vikram Shroff** is the **Vice Chairman and Co-Chief Executive Officer of UPL**, a global provider of sustainable agricultural solutions. He plays a central role in shaping UPL's strategic direction, global operations, and innovation agenda, with a focus on sustainability, farmer-centric solutions, and resilient food systems. Under his leadership, UPL has strengthened its global footprint, advanced research-driven crop protection and biosolutions, and expanded partnerships across markets. His professional journey reflects a strong emphasis on integrating sustainability with business growth, advancing agri-technology innovation, and promoting environmentally responsible agricultural practices at scale.

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## Mirik Gogri, CEO, Spectrum Impact and Aarti Enterprises

**Mr. Mirik Gogri** is the **Chief Executive Officer of Spectrum Impact and Aarti Enterprises**, where he leads initiatives across impact investing, sustainability, and diversified industrial operations. At Spectrum Impact, he focuses on deploying patient capital to support scalable solutions in climate action, clean energy, healthcare, and inclusive development. At Aarti Enterprises, he plays a key role in driving strategic growth, operational excellence, and long-term value creation across the group's businesses. His professional work reflects a strong emphasis on integrating impact-driven investment with industrial growth, fostering innovation-led enterprises, and aligning business strategy with sustainability and social outcomes.

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## Sanjeev Bikhchandani, Founder and Executive Vice-Chairman, InfoEdge

Shri Sanjeev Bikhchandani (born 28 January 1964) is an Indian entrepreneur and business leader, best known as the founder of Info Edge (India) Ltd., one of India's leading internet-based companies. An alumnus of the Indian Institute of Technology (IIT) Delhi and the Indian Institute of Management (IIM) Ahmedabad, he began his professional career in brand management before venturing into entrepreneurship. In 1997, he founded Naukri.com, India's first major online recruitment portal, which later became the flagship business of Info Edge. Under his leadership, Info Edge expanded its portfolio to include platforms such as 99acres, Jeevansathi, and Shiksha, playing a significant role in shaping India's digital consumer ecosystem. He currently serves as Founder and Executive Vice-Chairman of the company, guiding its long-term strategy and investments. In recognition of his contributions to trade and industry, he was awarded the Padma Shri in 2020.

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## Dr Purvi Mehta, Member, Board of Advisors, World Food Prize Foundation; Director, Board, Advanta Seeds; Senior Advisor, Global Centre for Adaptation

Dr Purvi Mehta is an international development professional with extensive experience in agriculture, food systems, climate resilience, and global policy. She serves as a Member of the Board of Advisors of the World Food Prize Foundation, Director on the Board of Advanta Seeds, and Senior Advisor to the Global Centre for Adaptation. Over the course of her career, she has worked across multilateral organisations, research institutions, and the private sector, contributing to programmes and policy initiatives focused on sustainable agriculture, nutrition security, and climate adaptation. She has held leadership and advisory roles supporting innovation, public–private partnerships, and global cooperation to strengthen food systems and enhance resilience in developing economies.

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## Amit Prothi, Director General, Coalition for Disaster Resilient Infrastructure

Amit Prothi is a senior policy professional serving as the Director General of the Coalition for Disaster Resilient Infrastructure (CDRI). He has extensive experience in international cooperation, multilateral engagement, and institutional development, particularly in the areas of disaster risk reduction, climate resilience, and sustainable infrastructure. Prior to his role at CDRI, he served in leadership positions within the Government of India, including at the Prime Minister's Office, where he contributed to policy coordination and international initiatives. As Director General, he leads CDRI's global mandate to promote resilient infrastructure systems through research, capacity building, partnerships, and knowledge exchange among member countries and institutions.

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## Prof Ashok Jhunjhunwala, IITM

Dr. Ashok Jhunjhunwala (born 22 June 1953) is an Indian academic, innovator, and technology leader. He holds a B.Tech from IIT Kanpur and a Ph.D. from the University of Maine, USA, and has been a faculty member at the Indian Institute of Technology Madras since 1981. He serves as President of the IIT Madras Research Park and Chairman of IIIT Hyderabad, and has played a key role in strengthening industry–academia collaboration in India. He was instrumental in establishing the IIT Madras Research Park, the Centre for Excellence in Wireless Technology (CEWiT), and initiatives under the TeNeT Group, contributing to advancements in telecommunications, wireless technologies, electric mobility, and decentralized energy solutions. He has served on several government advisory bodies and institutional boards, and has been recognised with major national honours, including the Padma Shri and the Shanti Swarup Bhatnagar Award, for his contributions to science, technology, and innovation.

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## Hon'ble Shri Pralhad Venkatesh Joshi, Union Minister of Consumer Affairs, Food and Public Distribution, Minister of New and Renewable Energy

**Shri Pralhad Venkatesh Joshi** (born 27 November 1962) is an Indian politician serving as **Union Minister of Consumer Affairs, Food and Public Distribution and Minister of New and Renewable Energy since June 2024**. He previously served as **Union Minister of Parliamentary Affairs, Minister of Coal and Minister of Mines from May 2019 to June 2024**. He has been a **Member of Parliament in the Lok Sabha from the Dharwad Lok Sabha constituency, Karnataka, since 2004**, winning five consecutive elections. He served as **State President of the Bharatiya Janata Party, Karnataka (2012–2016)** and was a member of the **panel of chairpersons of the Lok Sabha (2014–2018)**. Shri Joshi came to public notice through his early involvement in movements organised by the **Rashtriya Swayamsevak Sangh (RSS)** and has been a senior BJP leader with significant parliamentary and ministerial experience.
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## Shri Goverdhan S. Rawat, Deputy Managing Director of the National Bank for Agriculture and Rural Development (NABARD)

**Shri Goverdhan S. Rawat** is a senior development finance professional serving as **Deputy Managing Director of the National Bank for Agriculture and Rural Development (NABARD)** since November 2023. He has over **three decades of experience with NABARD**, during which he has held leadership roles including **Chief General Manager at the Pune, Maharashtra Regional Office**, and has overseen functions related to **project appraisal, infrastructure financing, rural development, district credit planning, consulting services, board secretariats, and human resources**. His academic qualifications include a graduate degree in **Agriculture and Animal Husbandry**, **CAIIB**, a **Post Graduate Diploma in Banking and Finance**, and an **MBA in Leadership and Strategy**. In his current role, he contributes to NABARD's mandate of **inclusive rural development and agricultural finance**, strengthening institutional frameworks and financing mechanisms to support sustainable growth in rural and agricultural sectors.
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# CIEU - Governing body

## Ashwani Mahajan, President, Bharat Climate Forum, National Co-Convener, Swadeshi Jagran Manch & Board member, CIEU

**Prof. Ashwani Mahajan** is an economist, author, columnist, and policy interventionist, and serves as the **National Co-Convenor of the Swadeshi Jagran Manch**. He is a former **Professor of Economics at the University of Delhi**, where he supervised several research scholars. A multilingual scholar, he regularly contributes columns to national and international publications. He has played a significant role in articulating the **Indic model of economics and business**, and has authored numerous research papers in national and international journals, presenting empirical evidence on various aspects of **Swadeshinomics**. His policy interventions have contributed to key national decisions, including the withdrawal of the controversial **Land Acquisition Ordinance**, policy recalibration on **Foreign Direct Investment (FDI)**—particularly in retail trade and e-commerce—and India's withdrawal from the **Regional Comprehensive Economic Partnership (RCEP)**. For over four decades, Prof. Mahajan has consistently advocated a development model focused on equity, empowerment of the poorest sections of society, dignified livelihoods, and inclusive economic growth. He also serves as **Co-Convenor of the Council for International and Economic Understanding (CIEU)**, contributing to its initiatives on economic policy, international engagement, and development discourse.
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## Meenakshi Lekhi, Convener, Bharat Climate Forum & Former Minister of State for External Affairs and Culture, Government of India (GoI)

**Smt. Meenakshi Lekhi** is a lawyer, parliamentarian, and public policy practitioner who has served as **Minister of State for External Affairs and Culture, Government of India**. An advocate at the **Supreme Court of India**, she has extensive experience in constitutional, environmental, and public interest matters. As a **Member of Parliament (Lok Sabha)** from **New Delhi**, she actively contributed to parliamentary proceedings and policy discussions on governance, women's empowerment, environmental protection, and international relations. In her ministerial role, she played a key part in advancing India's cultural diplomacy and external engagement. She serves as **Convenor of the Council for International and Economic Understanding (CIEU)**, where she leads initiatives focused on international dialogue, economic cooperation, and policy-oriented research. Her professional engagements reflect a sustained commitment to strengthening democratic institutions and India's global engagement.
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## N K Singh, Chair, Bharat Climate Forum & Chairperson 15th Finance Commission, GoI & Former Rajya Sabha MP.

**Shri Nand Kishore Singh** is a senior administrator, economist, and public policy expert, and served as **Chairman of the 15th Finance Commission of India**. A former **IAS officer (Bihar cadre)**, he has held several key positions including **Secretary to the Government of India**, **Member of Parliament (Rajya Sabha)**, and **Vice-Chairman of the NITI Aayog**. As Chairman of the 15th Finance Commission, he played a central role in strengthening fiscal federalism, inter-governmental fiscal relations, and the framework for resource devolution between the Union and States. He currently serves as **Chair of the Bharat Climate Forum**, contributing to national and international dialogue on climate policy, sustainable development, and green finance. Shri Singh is also associated with the **Council for International and Economic Understanding (CIEU)** in a leadership and advisory capacity, supporting its initiatives on economic governance, international cooperation, and policy discourse. His career reflects sustained engagement with public finance, institutional reform, and long-term development strategy.

## Sumant Sinha, Co-Chair, Bharat Climate Forum & Founder, Chairman & CEO, ReNew

**Sumant Sinha** is the **Founder, Chairman and Chief Executive Officer of ReNew**, one of India's largest clean energy companies and a Nasdaq-listed global renewable energy platform. He founded ReNew in **2011** to enable a just and inclusive transition to **net-zero energy**. Under his leadership, ReNew has built a diversified clean energy portfolio across **solar, wind, and battery storage**, with a pipeline of approximately **28 GW**, and provides end-to-end decarbonisation solutions including **solar manufacturing, green hydrogen, and carbon markets**. Shri Sinha is a globally recognised climate leader, **Co-Chair of the World Economic Forum's Alliance of CEO Climate Leaders**, and **Founding Co-Chair of the Bharat Climate Forum**, supporting India's role in global clean tech manufacturing. He is a **Fellow of the Indian National Science Academy (INSA)** and the **Indian National Academy of Engineering**, serves on the boards of leading national and international institutions, and has held leadership roles in industry bodies including **President of ASSOCHAM**, **Chair of the CII Northern Region Council**, and currently chairs the **CII Energy Transition and Hydrogen Council**. He is the author of *Fossil Free* and a frequent speaker at global forums such as the **World Economic Forum** and **UN climate platforms**. His contributions have been recognised with honours including **Forbes Global Sustainability Leader**, **TIME100 Most Influential Climate Leaders**, and designation as a **UN SDG Pioneer**.
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