



World Sustainable Development Summit 2021

REDEFINING OUR COMMON FUTURE:
SAFE AND SECURE ENVIRONMENT FOR ALL

February 10-12, 2021

SUMMIT OVERVIEW



The 20th edition of the World Sustainable Development Summit (WSDS) has underscored the need for swift, far-reaching, and multisectoral initiatives to address climate change. Resonant with themes that will define conversation at the 26th UN Climate Change Conference of the Parties (COP 26) in Glasgow scheduled to be held in November, WSDS 2021 has served as an important reminder for businesses, governments, academia, and other stakeholders to step up their climate action. Instituted in 2001, the Summit series has marked 20 years in its journey of making sustainable development a globally shared goal.

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Key Abbreviations

AIIMS	All India Institute of Medical Sciences
CDRI	Coalition for Disaster Resilient Infrastructure
CEA	Central Electricity Authority
CEEW	Council on Energy, Environment and Water
CIFT	Central Institute of Fisheries Technology
COP26	Conference of the Parties, a summit that will be attended by the countries that signed the United Nations Framework Convention on Climate Change (UNFCCC)
CPCB	Central Pollution Control Board
CSEP	Centre for Social and Economic Progress
DFI	Development Finance Institutions
EU	European Union
GWNET	Global Women's Network for the Energy Transition
HVDC	High Voltage Direct Cables
IASS	Institute for Advanced Sustainability Studies
IEA	International Energy Agency
IGES	Institute for Global Environmental Strategies
IPCC	Intergovernmental Panel on Climate Change
ISA	International Solar Alliance
LeadIT	Leadership Group for Industry Transition
MEA	Minister of External Affairs
MNRE	Ministry of New and Renewable Energy
MoEF&CC	Ministry of Environment, Forest, and Climate Change
MoES	Ministry of Earth Sciences
MP	Member of Parliament
NABARD	National Bank for Agriculture and Rural Development
NCRR	National Center for Coastal Research
NDC	Nationally Determined Contributions

NIAS	National Institute of Advanced Studies
NIUA	National Institute of Urban Affairs
OSOWOG	One Sun One World One Grid
POSOCO	Power System Operation Corporation
RTS	Rooftop Solar Sector
SAWIE	South Asia Women in Energy
SDC	Swiss Agency for Development and Cooperation
TERI	The Energy and Resources Institute
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WRI	World Resources Institute
USISPF	US-India Strategic Partnership Forum

Executive Summary

The annual flagship event of The Energy and Resources Institute (TERI), the World Sustainable Development Summit (WSDS) has completed 20 years of driving the global discourse on sustainable development. With 2021 finding us against the backdrop of a global pandemic, the Summit was focused on “Redefining our common future” and building a “safe and secure environment for all”.

The 2021 edition of the Summit was unique for several reasons. First, the Summit was completely hosted on a digital platform for the first time, in light of the prevailing conditions. Second, and more importantly, it carried the voices of youth and women to the forefront of climate discussions for the first time. It is expected that the deliberations at WSDS will set the stage for talks and discussions at COP26 when nations come together to discuss climate action in Glasgow.

The Summit was inaugurated virtually by the Hon’ble Prime Minister of India, Shri Narendra Modi, on February 10th, 2021, in the august presence of global leaders H.E. Dr Mohamed Irfaan Ali, President of the Cooperative Republic of Guyana; Mr Mohamed Nasheed, Speaker of the People’s Majlis, Republic of Maldives; Ms Amina J. Mohammed, Deputy Secretary-General, United Nations; and Shri Prakash Javadekar, Hon’ble Union Minister of Environment, Forest, and Climate Change (MoEF&CC), Government of India.

Speaking at the Summit, Prime Minister Modi said, “The road to fighting climate change is through climate justice and this requires us to be large-hearted by thinking of the bigger and the long-term picture.”

Echoing these words, the Summit pushed pivotal issues to the forefront, with an array of industry leaders, representatives from multilateral agencies, and policymakers deep diving into imperatives that impact climate change and climate action. With 30 sessions, 265 speakers, and 21 partners, WSDS witnessed distinguished guests and speakers participate in wide-ranging discussions that spanned biodiversity, air pollution, clean energy, energy transitions, adaptation and resilience, clean oceans, women, and the role of the youth in climate action.

Addressing the multidimensional issues of gender equality, the session on Women on the Rise: Prioritising Gender Equity as a Business Imperative created a space for dialogue to enable gender equality and women’s empowerment, central to effective and sustainable development outcomes. Equally notable was the ‘Youth Unite for a Safe and Secure Environment for All’ session, which reflected upon the role of youth in sustainable governance, and evidence-based, proportionate, and critical climate change issues. The viewpoints and actionable insights that emerged from the Summit’s discussions promise to shape the future of global climate action efforts.

The Summit was honoured by the presence of The Rt Hon Alok Sharma MP, full-time President for COP 26. He firmly expressed the need for unprecedented cooperation to take urgent steps towards climate action. In this regard, he expressed the goal of the United Kingdom’s COP26 Presidency: to forge strategic collaborations and partnerships between countries, societal groups, businesses, investors, cities, and regions, to realise the Paris Agreement. Informing the delegates of the European Green Deal’s vision for a more sustainable and just future, Mr Frans Timmermans, Executive Vice-President of the European Commission, acknowledged the multisectoral partnership opportunities for India and the EU vital to achieving common climate goals.

Congratulating the WSDS for serving as a common meeting point for valued perspectives, Mr Suresh Prabhakar Prabhu, India’s Sherpa to G20 & G7, Member of Parliament, Govt. of India, emphasised upon the need for collaboration and common action to achieve green growth. He highlighted that the potential for collaboration in four key areas - energy, water, forestry, oceans - could be discussed at the COP26, considering how critical they are to a sustainable future.

The Summit came to its conclusion on the third day, in the presence of dignitaries that included Mr Frans Timmermans, Executive Vice-President of the European Commission; The Rt Hon Alok Sharma MP, full-time President for COP 26; Mr Suresh Prabhakar Prabhu, India’s Sherpa to G20 & G7, Member of Parliament, Govt. of India; Dr Ajay Mathur, Director General, TERI; and Mr. Nitin Desai, Chairman, TERI. This document aims to provide a comprehensive overview of the three-day Summit, with salient insights and valuable perspectives that emerged from the deliberations, which remains critical for a low-carbon future.

From the Director General's Desk



Dr Ajay Mathur

Director General, TERI

I am delighted to be a part of the World Sustainable Development Summit's 20th edition. As our flagship event, the Summit has grown in reach, repute, and relevance, and has emerged as one of the spearheads of the global climate dialogue. In its brief legacy, the Summit has served as the intersection of the entire spectrum of climate change, giving climate actors and key stakeholders a vital platform to learn from each other.

What began as the Delhi Sustainable Development Summit in 2001 is today considered a global avenue for dialogue, deliberation, and debate on various facets of climate change – the most critical and daunting challenge faced by humanity. Year on year, the Summit has been attended by delegates who increasingly play a direct role in influencing sustainable policy and business action.

Considering the pace at which climate change has unfolded in the last two decades, nothing less than united and multilateral action, collaboration, and a sense of common ownership of our natural assets can guide our journey to a low carbon future. In his Summit inaugural address, Hon'ble Prime Minister of India Shri Narendra Modi raised this collective call to action rooted in a vision of climate trusteeship and climate justice.

The Summit has also taken cognizance of the pandemic and its many impacts. As a health crisis, the pandemic has underscored the inter-linkages between human and environmental health. It has compelled economies to explore low-carbon trajectories and the need to build back a better, inclusive, and a more just world.

We have sought to capture two imperatives – rebuilding from the pandemic and climate impacts – in the 2021 edition's theme, 'Redefining Our Common Future: Safe and Secure Environment for All'. The sessions were curated with themes that resonated with the upcoming 26th UN Climate Change COP26 in Glasgow in November: energy, adaptation and resilience, nature-based solutions, green finance, and clean transport. Other relevant themes included clean oceans, women on the rise, industry transition, circular economy, and air pollution.

These themes were given due import across 20 thematic tracks and 10 plenaries by a delegation that included 65 plenary speakers and 200 thematic track speakers. In particular, the Summit was honoured by the august presence of Mr Frans Timmermans, the European Commission Executive Vice-President for the European Green Deal, and The Rt Hon. Mr Alok Sharma, MP and full-time President for COP26. It is our hope that the 2021 Summit has served as a catalyst for the COP26, the pivotal and transformational moment to blueprint a low-carbon future.

I would like to take this opportunity to thank all our speakers, partners, delegates, and colleagues who made WSDS 2021 possible.

** Dr Ajay Mathur, the former Director General at TERI, is now the Director General, International Solar Alliance (ISA)*

Preface



**Dr Annapurna
Vancheswaran**

Senior Director,
Communication
Outreach & Advocacy
Unit, TERI

Since its inception in 2001 as the Delhi Sustainable Development Summit and in 2016 transitioning to the World Sustainable Development Summit (WSDS), this Summit series has created a space for itself as the premier platform for driving the discourse on sustainable development, energy transitions and climate change.

The WSDS this year, inaugurated by the Hon'ble Prime Minister of India, was a milestone edition in many ways. I have been leading the organization of the Summit under Dr Pachauri's leadership and guidance in the first 15 years of its existence, and it is extremely gratifying for me to have continued his thought legacy beyond 2015. Held virtually in the backdrop of an ongoing pandemic, WSDS 2021 was a testament to the same resilience and adaptability that the world currently needs to mitigate the adverse effects of climate change.

This milestone edition of the Summit was held under the broad theme of 'Redefining Our Common Future: Safe and Secure Environment for All', to shed light on the interlinkages between climate change and health and how nations of the world need to redefine climate priorities in a post-pandemic world. The myriad of Summit sessions, which included 20 thematic tracks, and 10 plenaries and were driven by 65 plenary speakers and 200 thematic track speakers, witnessed in-depth deliberations on issues ranging from energy transition, clean oceans, adaptation & resilience, to women on the rise, industry transition, circular economy, air pollution, nature-based solutions, and green growth. The Summit showcased strong representation from the Government of India which reflected the strong political will and national commitment to sustainability.

While Hon'ble Prime Minister, Mr Narendra Modi underpinned the importance of climate justice and the need for having the bigger and the long-term picture for combating climate change, Mr Prakash Javadekar, Minister of Environment, Forest, and Climate Change, spoke about India's emergence as a central player in the domain of climate action, through its clear policy roadmap and concrete action. Highlighting that India had managed the fastest growing clean energy expansion in the world, Dr S Jaishankar, Hon'ble Minister of External Affairs, Govt. of India, said that this achievement represented the government's commitment to meeting developmental requirements as well as global commitments to climate action. Mr Suresh Prabhakar Prabhu, India's Sherpa to G20 & G7, and Member of Parliament, Government of India, called for common action and collaboration for effective climate change mitigation.

The WSDS was also graced by eminent speakers from across the globe, including H.E. Dr Mohamed Irfaan Ali, President of the Cooperative Republic of Guyana; The Rt Hon Lord Zac Goldsmith, Minister for

Pacific and the Environment at the Foreign, Commonwealth & Development Office (FCDO), the United Kingdom; Mr Mohamed Nasheed, Speaker of the People's Majlis, Republic of Maldives; Mr John Forbes Kerry, United States Special Presidential Envoy for Climate; and Ms Amina J Mohammed, Deputy Secretary-General, United Nations.

Also enriching the forum with their presence and global viewpoints were Mr Frans Timmermans, Executive Vice-President of the European Commission; Mr Michael Bloomberg, Founder, Bloomberg LP & Bloomberg Philanthropies, and United Nations' Special Envoy for Climate Ambition and Solutions; Ms Patricia Espinosa, Executive Secretary, United Nations Framework Convention on Climate Change; Ms Inger Andersen, Executive Director, United Nations Environment Programme; and Mr Vidar Helgesen, Executive Director, Nobelstiftelsen.

I am indebted to our partners, and particularly the Ministry of Environment, Forest and Climate Change (MoEFCC); the Ministry of Earth Sciences (MoES); the Ministry of New and Renewable Energy (MNRE); the WSDS 2021 country partner, the British High Commission, New Delhi; Bloomberg Philanthropies; Tata Cleantech Capital Ltd; Shakti Sustainable Energy Foundation; Climate Works Foundation; World Bank; the European Union, and USAID/India for their tremendous support in making WSDS a resounding success. In addition, I would like to thank our outreach and Thematic Track partners, namely the National Bank for Agriculture and Rural Development (NABARD); the National Research Development Corporation (NRDC); the Bengal Chamber Commerce Industry (BCC&I); IFAT; the US-India Business Council (USIBC); The Children's Investment Fund Foundation (CIFF); the International Energy Agency (IEA); Swiss Development Cooperation (SDC); the Institute for Advanced Sustainability Studies (IASS); the US India Strategic Partnership Forum (USISPF); and adelphi.

I sincerely thank the International Steering Committee (ISC) members, TERI colleagues who assumed various roles in the run-up to and during the Summit, virtual platform provider Kestone, and the core WSDS Secretariat for their untiring efforts, cooperation, and support in conducting yet another successful edition.

This journey of ours, which has now completed 20 successful years, still has a long way to go. Our collective global efforts to create a sustainable, equitable, clean, and green planet have received an impetus from the discussions that took place during WSDS. We look forward to bringing the world together once again at WSDS 2022, to continue our efforts of making sustainable development a globally shared goal.

Summit Timeline 2001–2020



2001

Poverty: The Global Challenge for Governments, Industry, Scientists and the Civil Society

- Mr Atal Bihari Vajpayee, Hon'ble Prime Minister of India

2003

Beyond Johannesburg: Translating Resolve into Action for a Sustainable Future

- Dr A P J Abdul Kalam, Hon'ble President of India

2005

Beyond Universal Goals: Steering Development Towards Global Sustainability

Sustainable Development Leadership Award (SDLA) instituted

- Mr Ólafur Ragnar Grímsson, Hon'ble President of Republic of Iceland

2007

Meeting the MDGs: Exploring the Natural Resources Dimensions

- Ms Sheila Dikshit, Hon'ble Chief Minister of Delhi, India
- Mr A Raja, Hon'ble Minister for Environment and Forests, Ministry of Environment and Forests, Government of India

2002

Ensuring Sustainable Livelihoods: Challenges for Governments, Corporates and the Civil Society

- Mr Atal Bihari Vajpayee, Hon'ble Prime Minister of India

2004

Partnerships for Sustainable Development: Addressing the WEHAB Agenda

- Mr Yashwant Sinha, Hon'ble Minister for External Affairs, Government of India

2006

Linking across MDGs: Towards Innovative Partnerships and Governance

- Mr A Raja, Hon'ble Minister for Environment and Forests, Ministry of Environment and Forests, Government of India



2008

Sustainable Development and Climate Change

- Dr Manmohan Singh, Hon'ble Prime Minister of India

2009

Towards Copenhagen: An Equitable and Ethical Approach

- Mr Pranab Mukherjee, Hon'ble President of India

2010

Beyond Copenhagen: New Pathways to Sustainable Development

- Dr Manmohan Singh, Hon'ble Prime Minister of India

2011

Tapping Local Initiatives and Tackling Global Inertia

- Dr Manmohan Singh, Hon'ble Prime Minister of India

2012

Protecting the Global Commons: 20 Years Post Rio

- Dr Manmohan Singh, Hon'ble Prime Minister of India

2013

The Global Challenge of Resource-Efficient Growth and Development

- Dr Manmohan Singh, Hon'ble Prime Minister of India

2014

Attaining Energy, Water and Food Security for All

- Dr Farooq Abdullah, Hon'ble Minister of New and Renewable Energy, Government of India
- HE Mr Danny Faure, Hon'ble Vice President, Seychelles
- Mr Kofi Annan, Chairman, Kofi Annan Foundation and Former Secretary General, United Nations
- Mr Salman Khurshid, Hon'ble Minister of External Affairs, Government of India

2015

Sustainable Development Goals and Dealing with Climate Change

- HE Mr Laurent Fabius, Hon'ble Minister of Foreign Affairs and International Development, France and Former Prime Minister, France and President, COP21
- Mr Arnold Schwarzenegger, Former Governor, California and Founding Chair, R20: Regions of Climate Action
- Mr Suresh Prabhu, Hon'ble Minister of Railways, Government of India
- Mr Prakash Javadekar, Hon'ble Minister of State (IC) for Environment, Forest and Climate Change, Government of India

2016

Beyond 2015: People, Planet, and Progress

- Mr Pranab Mukherjee, Hon'ble President of India

2019

Attaining the 2030 Agenda: Delivering on Our Promise

- Mr M. Venkaiah Naidu, Hon'ble Vice President

2018

Creating Partnerships for a Resilient Planet

- Mr Narendra Modi, Hon'ble Prime Minister of India

2020

Towards 2030 Goals: Making the Decade Count

- Mr Prakash Javadekar, Hon'ble Minister of Environment, Forest and Climate Change, Government of India

2021

Redefining our Common Future: Safe and Secure Environment for All

- Mr Narendra Modi, Hon'ble Prime Minister of India
- Mr Prakash Javadekar, Hon'ble Minister of Environment Forest & Climate Change, Government of India
- Ms Amina J Mohammed, Deputy Secretary-General, United Nations
- Mr Mohamed Nasheed, Speaker of the People's Majlis, Republic of Maldives
- H.E. Dr Mohamed Irfaan Ali, Hon'ble President of the Cooperative Republic of Guyana

Inaugural Address

by Hon'ble Prime Minister of India,
Shri Narendra Modi



Excellency, Doctor Mohamed Irfaan Ali, President of the Cooperative Republic of Guyana,

Excellency, my friend, Mohamed Nasheed, Speaker of the People's Majlis Republic of Maldives

Excellency, Miss Amina J. Mohammed, Deputy Secretary-General, United Nations

Shri Prakash Javadekar, Minister of Environment, Forest and Climate Change, Government of India,

Distinguished guests,

Namaste!

I am happy to be speaking at the World Sustainable Development Summit. This forum completes twenty years. My congratulations to TERI for sustaining this momentum. Global platforms like these are important for our present and our future.

Friends,

Two things will define how the progress journey of humanity will unfold in the times to come. First is the health of our people. Second, the health of our planet. Both are interlinked. There are already many ongoing discussions on improving people's health.

We have gathered here to talk about the health of the planet. The scale of the challenge we face is widely known. But conventional approaches cannot solve the problem we face. The need of the hour is to think out of the box, to invest in our youngsters and to work towards sustainable development.

Friends,

The road to fighting climate change is through climate justice. At the root of climate justice is the principle of being large-hearted. Climate justice is also about thinking of the bigger and long-term picture. The sad reality is—changes in the environment and natural disasters impact the poor the most. Climate justice is inspired by a vision of trusteeship, where growth comes with greater compassion to the poorest. Climate justice also means giving developing countries enough space to grow. When all of us understand our individual and collective duties, climate justice will be achieved.

Friends,

India's intent is supported by concrete action. Powered by spirited public efforts, we are on track to exceed our commitments and targets from Paris. We committed to reduce the emissions intensity of our GDP by 33 to 35 per cent from 2005 levels. You would be happy to know that a 24 per cent drop in national emission intensity has already been achieved.

India had made a commitment to achieve about 40 per cent cumulative electric power installed capacity from non-fossil fuel-based resources. The share of non-fossil sources in installed capacity of electricity today has grown to 38 per cent. This includes nuclear and large hydro projects. I am delighted to share that we are making steady progress on our commitment to Land Degradation Neutrality. Renewable energy is picking speed in India. We are well on track to setting up 450 GW of renewable energy generating capacity by 2030. Here, I would like to applaud our private sector and several individuals who are contributing to this. India is also increasing usage of ethanol.

Friends,

Sustainable development is incomplete without equitable access. In this direction too, India has

made good progress. In March 2019, India achieved nearly 100 per cent electrification. This was done through sustainable technologies and innovative models. India invested in LED bulbs long before they became global norm. Through the UJALA program, 367 million LED bulbs became a part of people's lives. The initiative reduced over 38 million tonnes of CO2 emissions per year.

The Jal Jeevan Mission has connected over 34 million households with tap connections in just about 18 months. Through the PM Ujjwala Yojana, more than 80 million households below the poverty line have access to clean cooking fuel. We are working to increase the share of natural gas in India's energy basket from 6 per cent to 15 per cent. An estimated investment of 60 billion dollars is lined up in developing domestic gas infrastructure. Work is underway to expand city gas distribution networks. Another 100 districts would be added to the network in the next three years. Through the PM KUSUM scheme, over 30 GW of solar capacity will be developed in the agriculture sector by 2022.

Friends,

Often, discussions on sustainability become too focused on green energy. But green energy is only the means. The destination we seek is a greener planet. Our culture's deep respect for forests and green cover is translating into outstanding results. According to the Food and Agriculture Organization's (FAO's) Global Forest Resources Assessment 2020, India is among the top three countries to have gained in forest areas in the last decade.

India's forest cover has reached almost one-fourth of the geographic area. Conventional thinking may make some people think that when a country pursues development, forest cover goes down. But India is one of the countries showing that this does not need to be the case.

Our mission to achieve sustainable development also includes giving special attention to animal protection. Across India, people feel proud that over the past five to seven years, the population of lions, tigers, leopards, and Gangetic river dolphin has gone up.

Friends,

This gathering brings together the best and brightest minds working on sustainable development. I would like to draw attention to two aspects: Togetherness and Innovation.

Sustainable development will only be achieved by collective efforts. When every individual thinks of national good, when every nation thinks of global good, that is when sustainable development will become a reality. India has made an effort in this direction through the International Solar Alliance. Let us always keep our minds and nations open to best practices from all over. In the same spirit, let us always share our own best practices with others.

The second is innovation. There are many start-ups working on renewable energy, environment-friendly technology and more. As policymakers, we should support as many of these efforts as possible. The energy of our youth will certainly lead to outstanding results.

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Friends,

Through this forum, I would also like to mention one more area that needs thought: the enhancement of our disaster management capabilities. This requires focus on human resource development and technology. As part of the Coalition for Disaster Resilient Infrastructure, we are working in this direction.

Friends,

India is ready to do whatever possible to further sustainable development. Our human-centric approach could be a force multiplier for global good. The support of research of institutions like TERI is important in these efforts.

I wish this Summit, and you all, the very best.

Thank you!

Thank you very much.

Address

by Shri Prakash Javadekar, Hon'ble Minister of Environment, Forest, and Climate Change, Govt. of India



Prime Minister Narendra Modi ji, President of Republic of Guyana Mohd. Irfaan Ali, Speaker of the People's Majlis of the Republic of Maldives, Dr Mohamed Nasheed and Amina Mohammed, Deputy Secretary-General of the United Nations.

I am delighted to attend the TERI World Sustainable Development Summit. This annual event is now internationally recognized and witnesses robust participation and thoughtful discussions that set the agenda in the domain of sustainability.

In 2012, while participating in the Durban UNFCCC Climate Change Conference as a Member of Parliament, I saw that India's role was that of a backbencher. We were not putting up any ideas.

But in 2015, when we went to Paris under the leadership of Narendra Modi-ji, we were leading from the front. He introduced the global delegation to the issue of climate justice. His discourse on the sustainability of the Indian lifestyle found place in the preamble of the Paris Agreement. While the world was talking about climate change as an 'inconvenient truth', I was honoured to gift the delegates a copy of 'Convenient Action', written by Modi-ji.

It was at the Paris Agreement that our Prime Minister launched the International Solar Alliance, the Coalition of Disaster Resilient Infrastructure and Mission Innovation. These three initiatives have

been received with global appreciation. Today, India is seen as a leader in putting forward revolutionary ideas.

India's work on implementing pledges it made at the Paris Agreement has been captured in four international reports. These are the United Nations Environment Program Emission Gap Report; the Climate Change Action Tracker Report; the Climate Change Performance Index and the Climate Transparency Report. All these reports confirm that under our Prime Minister decisive leadership, India is implementing its climate commitments well ahead of schedule.

India is thus globally regarded as a central player in the domain of climate action. We have successfully reduced our emission intensity and increased our forest cover. We have also committed to a new

target of restoration of degraded land. We will also definitely achieve the 450 GW of installed renewable energy target set by Prime Minister Modi. Together, these achievements will give India a leading position in the domain of climate action.

Sustainability is in our country's ethos. We are probably the only country in the world where trees and animals are worshipped. Because of our deep love of nature, India accounts for eight per cent of the world's total biodiversity.

India now wants to bring to the global stage the developing world's demand for promised finance and technological cooperation, which are essential in our way forward.

With these words, I compliment TERI for this grand conference.

Thank you.

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Fireside Chat on Transitioning to Zero Emissions



Speakers:

- Chair: Mr Manjeev Puri, Distinguished Fellow, TERI
- Mr Manish Chaurasia, Managing Director and CEO, Tata Cleantech Capital
- Mr Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway
- Prof. Dr Björn Stigson, Chairman, Sitgson & Partners

There has been growing consensus around achieving industrial carbon neutrality, with the Intergovernmental Panel on Climate Change (IPCC)

calling for global emissions to reach net-zero around mid-century. Now, it is imperative for all sectors to markedly reduce their emissions, across their value chain. However, this transition cannot be achieved in siloes and requires support and collaboration from all stakeholders such as businesses, financial institutions, and policymakers. While a lot has been achieved so far, there is a long way to go before we achieve the goal of transitioning to zero emissions. Setting this context, the Fireside Chat on “Transitioning to Zero Emissions: A Conversation on Industry, Finance and Policy” with Mr. Manjeev Puri Distinguished Fellow TERI; Prof Dr Björn Stigson,



Chairman, Sitgson & Partners; Mr Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway; and Mr Manish Chaurasia, Managing Director and CEO, Tata Cleantech Capital, drove a critical discourse on swift industrial decarbonisation.

Mr Manjeev Puri, who chaired the session, highlighted the need for immediate interventions for a sustainable transition.

Speaking at the session, Prof Dr Björn Stigson, Chairman, Sitgson & Partners, said, "The World Business Council (for Sustainable Development) recognises India's role in addressing the climate change agenda. Businesses have been reporting their contributions to the energy transition, but we need much better systems for collaboration. The global business community is at the center stage of the fight against climate change. The way forward for them is to 'green up or be out of business.'"

He also talked about the scope available to the developing countries in the field of renewable energy, unlike the old economies that have baggage to deal with. He said able energy systems are needed to create successful businesses.

Mr Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway, said, "Integrating ecology and economy can fuel employment and save the environment." Elaborating, he said, "There is no choice to be made between mother earth, jobs, and prosperity."

Emphasising the need for stable policy climate, Mr Solheim said, "Robust political will to usher in

curtailment of carbon emissions." He hailed India for having policies that work for ecological preservation as well as poverty alleviation. He asserted that political will, businesses, and technology are needed to attain the transition to net-zero emissions. Underscoring the theory of change, he said, "Change happens when three factors come together - public opinion, brave visionaries, that is, politicians, and businesses."

Speaking on clean technology financing, Mr Manish Chaurasia, Managing Director and CEO, Tata Cleantech Capital, said, "We are dedicated to creating an ecosystem to channelize money in India for developing the Rooftop Solar Sector (RTS). As climate change is a global problem, it needs global contribution." He also said several private sector or commercial institutions shy away from investing in sustainable energy projects, especially if the funding requirement is large. This is where national banks play an important role. He said multinational institutions such as World Bank and Green Bank need to see that the wealth of technology is disseminated in areas that cannot afford them. As the fireside chat progressed, panelists discussed how stimulating financing in clean technology will enable the seamless flow of funds from developed nations to developing countries that need it the most. Though the cost of funding renewable energy projects has considerably lowered, it still requires ample suitable policy support, and the flow of solutions must reach more people. The speakers also stressed the need for the energy transition to be inclusive in nature so that no one gets left behind on the path to sustainable progress.

Making Words Count



“

**Shri
Narendra Modi,
Hon'ble Prime Minister
of India**

When every individual thinks of national good, when every nation thinks of global good, that is when sustainable development will become a reality.

”



“

**H.E. Mr Mohamed Nasheed, Speaker of the People's
Majlis, Republic of Maldives**

The climate crisis is a great national security threat to the world. Climate change is already upon us but that does not mean we are going to give up. To survive climate change, we need to work with nature and not against it by adopting smart biological adaptation strategies. Time is running out and we must cut emissions, quickly. In December, India announced an eye-catching target of 450 GW of renewable energy target by 2030, which shows incredible leadership by the Prime Minister of India. I thank PM Modi for taking the leadership in providing strategies that will deliver a safer and prosperous future for all.

”



Ms Amina J Mohammed, Deputy Secretary-General, United Nations

Over the years, this event has addressed the most pressing global challenges of our time. Science tells us that we must cut GHGs by 45% by 2030 and reach net-zero by 2050. India is currently the only G20 country that has overachieved its NDCs. The target of 450 GW of renewable energy by 2030 will bring more jobs, cleaner air, and a more secure power grid. We count on India on its contribution to multilateralism on COVID vaccines, climate change and on peace keeping.



H.E. Dr Mohamed Irfaan Ali, President of the Cooperative Republic of Guyana

I am pleased to join the 20th inauguration ceremony of the WSDS 2021. I commend TERI for sustaining this initiative where the government of Guyana is participating since 2011. The time has come for society to adopt technologies and innovations. Over the years, we have followed the Paris Agreement commitment in our efforts towards protecting the environment by moving the country towards a sustainable development path through our low carbon development strategy. The requirement is of a greater political will to upscale the use of these technologies. It is a critical role, not only for government but also private sector and organisations like TERI that help facilitate the technological transformation and uptake.



Rt Hon Mr Alok Sharma MP, COP26 President Designate, UK Cabinet Office

We all share one precious life giving, but fragile, planet and each of us has a stake in its future. Only through ambitious net-zero commitments and strong international collaboration can we bring the benefits of clean growth and resilient economies to everyone around the world.

Making Words Count



Shri Prakash Javadekar, Hon'ble Minister, Environment Forest & Climate Change

India is implementing its pledges. Four international reports including the United Nations Environment Programme's emission gap report, the climate change action tracker report, the climate change performance index, and the transparency report, state that with PM Modi's support, India is leading from the front and is implementing all its pledges well before time. We have reduced emission intensity, increased our forest cover and with 90 GW of renewable energy, we will definitely achieve PM's target of 450 GW of renewable energy by 2030.



Mr Frans Timmermans, Executive Vice-President of the European Commission responsible for the European Green Deal

We stand at the pivotal moment in the fight against climate crisis and the biodiversity crisis. Tipping points are getting closer. We have only a couple of years left to make the necessary changes in our policies if we really want to avoid those tipping points. How we shape our recovery from the pandemic will determine whether we can succeed in our fight against the climate crisis. We need to use this time to really innovate our economies at world scale. We have to open the gates to green growth and a healthy future for all so that we can tell our future generations that we took the first steps that led us to the road of real and sustainable recovery.



Mr Suresh Prabhu, Sherpa, G20 Summit

I congratulate TERI for organising such a compelling platform to achieve a common target towards fighting environmental challenges. I believe that without a common action and collaboration, we cannot achieve green growth. Energy, water, forestry, oceans are a few sectors that could be discussed at the COP26. We need to save our planet from imminent extinction and the time to act is now, to promote collaboration and to achieve green growth.



Dr John Murton, UK's COP26 Envoy and responsible for coordinating UK diplomacy in relation to COP26

The focus of COP26 must be on three things: 1) Improving the quality of public finance; 2) Mobilisation of private finance; and 3) Enabling this transition to happen faster so that every financial institution takes climate finance into account in their allocations.



Ms Patricia Espinosa, Executive Secretary, United Nations Framework Convention on Climate Change

2021 is the most critical year for climate action. This year will culminate at COP26, and it must be a success. We cannot achieve success at COP26 and our climate action efforts without proper financing mechanisms. Multilateralism is the only way forward and the Paris Agreement remains the blueprint for success. Nations have an obligation to do better, and they must mobilize funds and do it before COP26.

Making Words Count



Dr S. Jaishankar, Hon'ble Minister of External Affairs, Government of India

Climate change is a great challenge and India has managed through it quite efficiently. India understands the need for global awareness for behavioural change, including judicious use of resources. Among G20 nations, India has managed the fastest growing energy expansion in the world. It stands committed to meeting both the developmental requirements of its citizens and ensuring to meet the stated commitments to climate action. It is upon the upcoming generations to lead the way in this aspect.



Mr John Forbes Kerry, United States Special Presidential Envoy for Climate

We have to come to Glasgow with no excuses. We don't have time to point fingers. We have to break barriers between us. This is our last best chance to get to net-zero.



The Rt Hon Lord Zac Goldsmith, Minister for Pacific and the Environment at the FCDO, UK

There is a need to break the link between economic growth and environmental devastation. We know the right thing to be done will create not only a sustainable environment but also create job opportunities aligning recovery packages with the Paris agreement and the Sustainable Development Goals. Green recovery can help create more jobs, short term returns, and reduce costs. Solar and wind are already cheaper than coal – which is one of the most unanticipated changes from the past.



Ms Midori Paxton, Head- Ecosystems and Biodiversity, United Nations Development Programme

Humanity is raging a war against nature and our planet is suffering from scorched earth policies. The casualty of this war will be millions of animal and plant species, and consequently us humans. This war needs to end, and nature is fundamental to human development.



Mr. Ravi Shankar Prasad, Additional Secretary, Ministry of Environment, Forest and Climate Change, Government of India

Sustainable and Secured Environment for all can be ensured if we all act responsibly and reduce our environmental footprint, with developed countries taking the lead and supporting developing countries in their efforts.



Ms. Tosca Barucco, Italian MFA Special Envoy for COP26, Italian Ministry for international cooperation

In the partnership with UK for COP26, youth plays a crucial role for Italy. I warmly welcome WSDS initiative to focus on the role of young generation of our planet.

Making Words Count



Ms Jan Thomson, Acting High Commissioner to India, British High Commission New Delhi

Young people are demanding bold action to ensure a greener and more resilient future that is good for both people and planet. It's time to listen, amplify their voice, and harness their innovation in order to deliver a successful outcome to #COP26 this year, and green recovery from COVID.



Ms. Rhiannon Harries, Deputy Trade Commissioner, South Asia, British High Commission

India is home of the some of the biggest multinational companies in the world, many of whom are driving climate action in India and globally. COP26 and the journey to the 2030 and 2050 goals of the Paris Agreement is, therefore, a powerful imperative for India Inc. There are many benefits from corporates participating in a push to net-zero economy.



Ms. Priya Shankar, India Director, Environment and Climate Program, Bloomberg Philanthropies

With 90% of the world's population breathing unhealthy air, the complexity of air pollution is concerning. It is not just an environmental or public health issue, but also an economic one that costs the global economy \$5.7 trillion. Numerous factors including transport, industry, and home-based fuel are adding to the problem abundantly. Considering the COVID-19 pandemic, tackling air pollution has taken on greater urgency. Forming comprehensive global green strategies and increased public awareness are some of the key steps to solve this issue.



Dr. Prashant Gargava, Member Secretary, Central Pollution Control Board (CPCB), SAI

Significant collaborative efforts made by government authorities, policy makers, and all key stakeholders have drawn the much-needed attention to the problem of air pollution in our cities. The scientific community has been immensely helpful in providing data, which has proved instrumental in developing and implementing solutions.



Mr. Iyad Kheirbek, Programme Director Air Quality at C40 Citie

Improving air quality can also help to achieve climate targets set by several nations. Collaboration among countries is important to combat air pollution. Cooperation across government agencies and jurisdictions, along with effective use of data on sources, exposure, and health impact are some of the key components to solve this problem. Regional and collective effort cannot be compromised, for solutions cannot be achieved in isolation.



Richa Sharma, Joint Secretary, MOEFCC

Affordability and accessibility of key technology is key to make the business case for low-carbon transition. This requires investment and collaborative partnership and scaling up of cutting-edge technology. India continues to push for the role of technology transfer and climate finance. Developed countries are expected to take the lead in low-carbon transition. We are now interested in hearing from partners what challenges they face and to which national policy must respond.

Making Words Count



Prof. Dr Björn Stigson, Chairman, Stigson & Partners.

The global business community is at the centerstage of the fight against climate change. The way forward for them is to green up or be out of business.



Mr Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway

Integrating ecology and economy can fuel employment and save the environment.



Dr Anurabha Ghosh, CEO, Council on Energy, Environment and Water (CEEW)

Climate change is not an academic concept anymore. It is here and now, and we are living through it. Draft a new social contract to organise our society, our economies & particularly our politics to bring the people & planet together.



HE Mr Vincenzo de Luca, Ambassador of Italy to India

It is important to look at our lifestyle & culture to address climate change. Youth is crucial in this as it is more innovative & aware of sustainable resource use.



Ms Astrid Schomaker, Director, Global Sustainable Development, European Commission

For us to fight climate change we will have to work as one. From governments to companies, to civil society, everybody will have to come together to find sustainable solutions.



Ms Inger Andersen, Under Secretary-General, United Nations and Executive Director, United Nations Environment Programme

A global move to circular economy should not be viewed as something that will hold us back. But it should rather be seen as a smart economic decision that is key to ending three planetary crises, namely, a crisis of climate change, biodiversity and nature loss, and a crisis of pollution and waste.



Mr P.V.S. Surya Kumar, Deputy Managing Director, NABARD

Despite our artistic pretensions, sophistication, and many accomplishments, we owe our existence to six inches of topsoil and the fact that it rains.

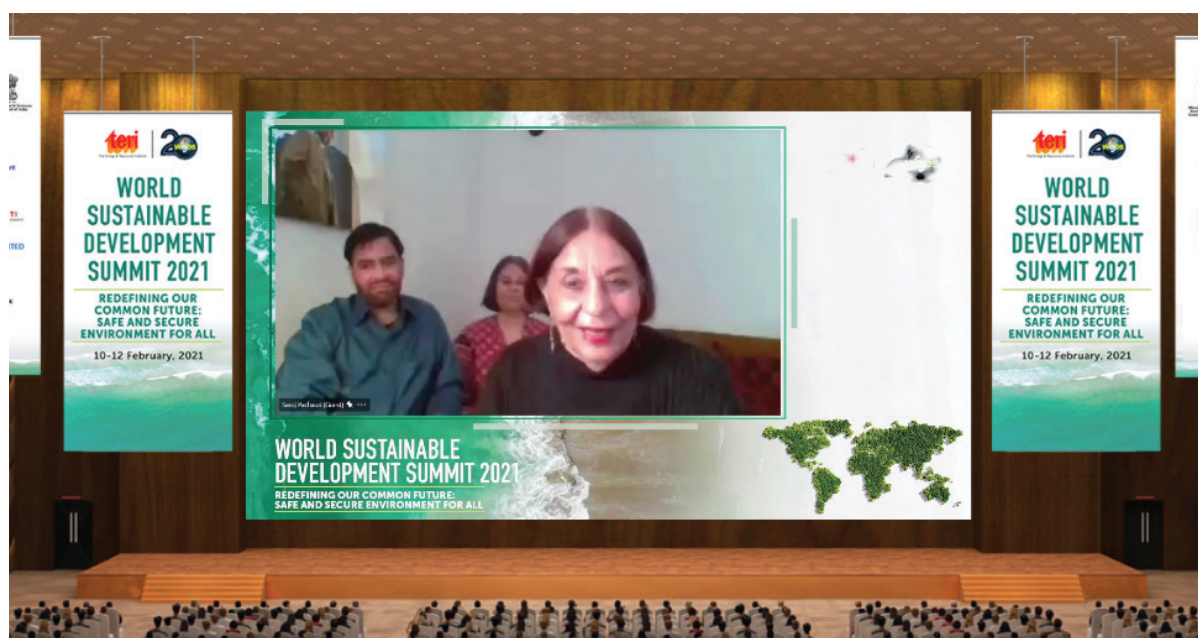


Mr Nigel Topping, High Level Climate Action Champion for COP26

If we know that it is possible to get to zero by 2050, then the leaders will always get there earlier.

Commemorating 20 Years of the Summit Series

Remembering Dr R K Pachauri



Eminent Speakers

- Opening Remarks: Mr Nitin Desai, Chairman, TERI
- Dr Ajay Mathur, Director General, TERI
- Prof Nebojsa Nakicenovic, Emeritus Research Scholar, Transformative Institutional and Social Solutions Research Group, Integrated Assessment and Climate Change Research Group
- Prof Dr Björn Stigson, Chairman, Stigson & Partners
- Mr Uday Khemka, Vice Chairman, SUN Group
- Mr Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway
- Address by Dr Saroj Pachauri, Distinguished Scholar, Population Council
- Closing Remarks: Dr Vibha Dhawan*, Distinguished Fellow, TERI

Dr. RK Pachauri joined TERI as its Founder Director in 1982. Playing a pivotal role in TERI's emergence as a premier global organisation in sustainability, his

** Dr Vibha Dhawan, previously Distinguished Fellow and Senior Director (New Initiatives and Programmes) at TERI, has been appointed Director General, TERI*



visionary leadership played a vital role in establishing the WSDS as one of the world's preeminent sustainability events. He passed away in 2020 at the age of 79.

Delivering the opening remarks of the Day 2 plenary session, 'Commemorating 20 Years of the Summit Series: Remembering Dr R K Pachauri', Mr Nitin Desai, Chairman, TERI recalled how Dr. Pachauri had conceptualised and spearheaded the sustainable development Summit. Mr. Desai also acknowledged Dr. Pachauri's early understanding of the need for multisectoral collaborations between government, climate activists, research institutions, NGOs, and individuals – a need that the Summit has addressed. That he recognized the need for collaboration – a major theme that not only resonated across 21 years of the Summit but in the global sustainability dialogue, was recognized by him much before it - underscored his foresightedness.

Mr. Desai's remarks were followed by a video remembrance.

Mr. Erik Solheim, Former Minister of International Development and Minister of the Environment, Norway, expressed grief at Dr. Pachauri's untimely demise and recalled the critical role that he had played in the sphere of climate change mitigation and environmental action. Mr Solheim also spoke about Dr Pachauri's contribution to devising practical energy solutions for the poor.

Mr Uday Khemka, Vice-Chairman of the SUN Group of Companies, expressed great admiration for Dr Pachauri's contribution to climate policy, his leadership at TERI, his work on the Intergovernmental Panel on Climate Change (IPCC), and the WSDS. In

particular, he noted Dr Pachauri's ability to motivate diverse climate activists to unite and work towards addressing climate change.

Dr Björn Stigson, Chairman, Stigson & Partners recalled fond memories of Dr Pachauri during his participation in the Summit and recommended that TERI continue hosting the Summit to ensure that the global sustainable development agenda continues.

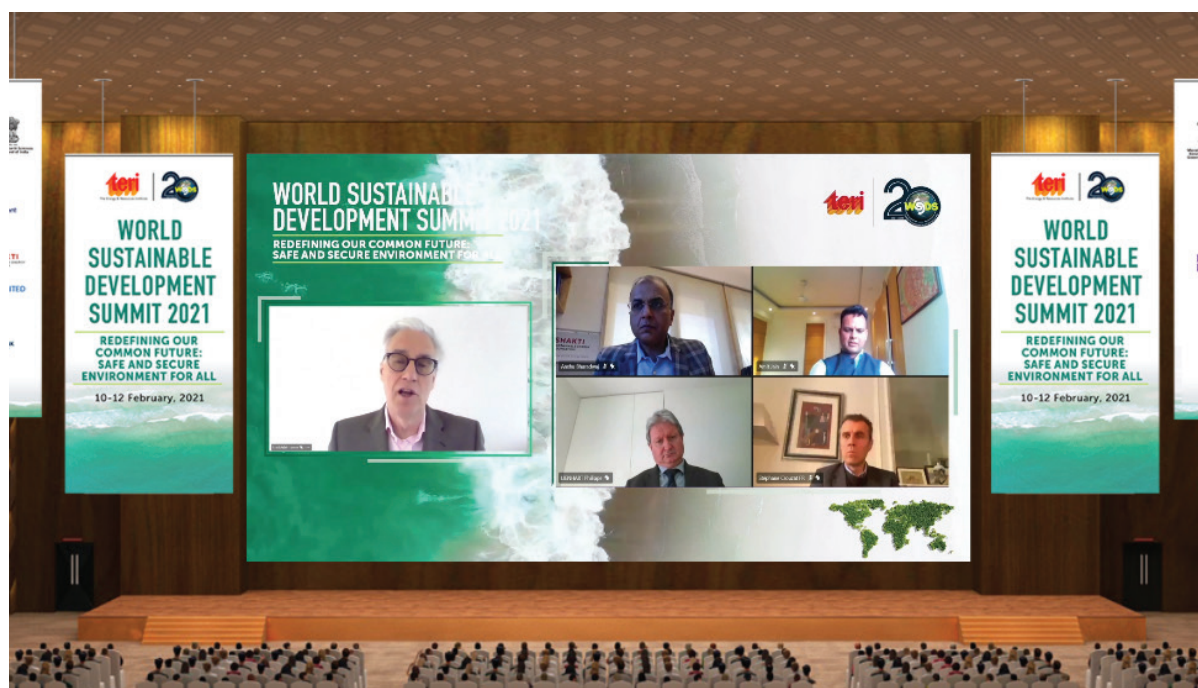
Prof. Nebojsa Nakicenovic, Emeritus Research Scholar, Transformative Institutional and Social Solutions, Research Group, Integrated Assessment and Climate Change Research Group said the 20th anniversary of WSDS was an apt occasion to celebrate Dr Pachauri's incredible life and legacy in the field of climate change. Nakicenovic, who had served as a convening lead author of the Special Report on Emissions Scenarios, highlighted that it was under Dr Pachauri that the IPCC received the Nobel Peace Prize, a monumental achievement.

In her address, Dr Saroj Pachauri, Distinguished Scholar, Population Council, and Dr. R.K. Pachauri's wife, said she was deeply touched by the remembrance. She fondly recalled Dr Pachauri's efforts to organize the first Delhi Sustainable Development Summit (DSDS) in 2001 and the subsequent editions of the landmark sustainability event.

Delivering the session's Closing Remarks, Dr Vibha Dhawan, Distinguished Fellow, TERI, acknowledged Dr. Pachauri's sharp foresight and vision, and his ability to inspire and catalyse young minds in the field of sustainability.

Plenary

Developing a Long-term Vision for Implementing 'One Sun One World One Grid'



Eminent Speakers:

- Welcome Remarks: Dr Ajay Mathur, Director General, TERI
- Special Remarks: Lord Adair Turner, Chair, Energy Transitions Commission
- Keynote Address: Shri Upendra Tripathy, Director General, International Solar Alliance
- Chair: Mr Dr Anshu Bhardwaj, CEO, Shakti Sustainable Energy Foundation

Panellists:

- H.E. Mr Stéphane Crouzat, French Ambassador for Climate
- Mr Amit Jain, Senior Energy Specialist, The World Bank
- Mr Philippe Lienhart, EDF Project Lead OSOWOG

- Mr Jayant Parimal, Advisor to the Chairman, Adani Group

Shri Narendra Modi, the Hon'ble Prime Minister of India had sounded a clarion call for connecting solar energy supply across borders, with the central idea of 'One Sun One World One Grid' (OSOWOG). The vision behind the OSOWOG was that "The Sun Never Sets" and is a constant at certain geography, globally, at any given point of time. The 'One Grid for One Sun and One World (OSOWOG) initiative' seeks to leverage solar energy and build a global ecosystem of interconnected renewable resources that are seamlessly shared for mutual benefits and global sustainability. The creation of such a global consensus requires participation from a gamut of international stakeholders, including governments, multilateral organisations, and financial institutions,

among others.

The plenary session titled 'Developing a Long-term Vision for Implementing 'One Sun One World One Grid' at the World Sustainable Development Summit drove a dialogue on creating such a consensus and deliberated on the nuances of OSOWOG's implementation. The panel discussed Energy transmission through high voltage direct cables (HVDC). Mr Amit Jain, Senior Energy Specialist, World Bank, said energy transmission through HDVC was not a new phenomenon and has been around for decades. Mr Jain also highlighted India's early moves in solar energy, and how the successive reverse auctions of energy tariffs have brought down solar prices so dramatically that India produces the cheapest solar-powered electricity anywhere in the world.

The plenary also explored the scale of OSOWOG, which is poised to be truly global. Mr Upendra Tripathy, Director General, International Solar Alliance (ISA), explained that OSOWOG will not be limited by national boundaries and that it can tackle global challenges linked to energy. It will enable 3 billion people to access clean drinking water (via solar pumps), give 2 billion women access to clean cooking, and bring light to the homes of 750 million people.

Lord Adair Turner, Chair, Energy Transitions Commission, spoke about OSOWOG's role in facilitating an exponential energy transition leap. He added that an electrified economy offers huge benefits, as it is cleaner in terms of environmental impact, and is more energy-efficient per unit of energy used.

H.E. Stéphane Crouzat, French Ambassador for Climate spoke of how electrifying energy demand can also stimulate the development of electric vehicles and cited the European Union's experiences in this regard.

The panel also discussed OSOWOG's role in mitigating the intermittency of renewable power. The sun does not shine, and the wind does not blow the entire day. However, OSOWOG, by making use of battery storage can easily obviate the challenge. Lord Adair Turner further added that battery storage technology is improving, and rates are falling. This only underpins the pivotal role battery storage is set to play in facilitating a seamless transition to renewable energy. The panel unanimously agreed on the fact that OSOWOG can be successful only if a global consensus is formed. Nations have to set aside their differences to move towards the shared goal of having access to affordable and uninterrupted solar power.

Tracing the Summit Days

Plenary Sessions

The 2021 edition of the World Sustainability Development Summit was sharply aligned to the five key themes of COP26: the transition to clean energy, clean transport, nature-based solutions, adaptation and resilience and finance. Directly and indirectly, these themes informed the dialogue and deliberations of the plenary sessions and thematic tracks across the three days of the Summit.



High-Level Round Table on Rebooting Green Growth

Eminent Speakers:

- Moderator: Dr Ajay Mathur, Director General, TERI
- Keynote Address: Dr S Jaishankar, Hon'ble Minister of External Affairs, Government of India (Via video)
- Mr John Forbes Kerry, United States Special Presidential Envoy for Climate

- Mr Mohammed Nasheed, Speaker of the People's Majlis, Republic of Maldives
- The Rt Hon Lord Zac Goldsmith, Minister for Pacific and the Environment at the FCDO, UK
- Ms Amina Mohammad, Deputy Secretary-General, United Nations

The 'High-Level Round Table on Rebooting Green Growth' aimed the conversation towards strengthening a common commitment to

maximizing renewable energy use, enhancing capacity to deal with the changing climate, and creating financial flows to help enable these actions.

Delivering the Chairman's Address, Dr S Jaishankar, Hon'ble Minister of External Affairs (MEA), Government of India, said India's fastest growing clean energy expansion in the world underscores its leadership in the sphere of climate action. According to him, the world's participation in India-led initiatives such as International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI), India-UN Development Partnership Fund, and Leadership Group for Industry Transition (LeadIT) will be critical to complete their commitments leading up to COP26.

Mr Mohammed Nasheed, Speaker of the People's Majlis, Republic of Maldives, spoke about his vision for a zero-carbon economic future for climate-vulnerable countries. He recommended that management systems, economics, administrative frameworks, and legal frameworks should be all strategically addressed to make a low-carbon future a reality.

Mr John F. Kerry, US Special Presidential Envoy for Climate, US Government, lauded India's energy transition leadership vis-à-vis the recently announced target of 450 GW of renewables capacity by 2030. While acknowledging India as the hub of the world's most affordable solar energy, he said

domestic action of any one country is not enough, considering the scale and urgency of the climate change crisis. He expressed the need to raise climate ambition to mitigate the effects of climate change, something that the US had done recently by rejoining the Paris Agreement. He also talked about hydrogen as the fuel of the future, acknowledging India's recently announced Hydrogen Mission.

The Rt Hon Lord Zac Goldsmith, Minister for Pacific and the Environment at the FCDO, United Kingdom, said it was critical to sever the link between economic growth and environmental devastation. A resilient, low-carbon future can only create not only a sustainable environment but also create job opportunities by aligning recovery packages with the Paris Agreement and the Sustainable Development Goals. He highlighted the UK's interest in strengthening adaptation by urging governments to work towards their Nationally Determined Contributions (NDCs), and said that the UK is working on finance, adaptation, climate energy, climate transportation, and nature-based solution.

Commending India's achievements in renewable energy generation, the OSOWOG and the ISA, Ms Amina Mohammad, Deputy Secretary-General, United Nations, said India had created a major economic opportunity for a low carbon future. She added that the UN seeks to partner with India for a safer and equitable world.

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Business and Climate Finance

Mega Climate Change Plenary: Zero Carbon Future Makes Business Sense



Eminent Speakers:

- Opening Remarks and Context Setting: Dr Ajay Mathur, Director General, TERI
- Keynote Address: Mr Michael Bloomberg, Founder, Bloomberg LP & Bloomberg Philanthropies, and United Nations' Special Envoy for Climate Ambition and Solutions (*Via video*)
- Special Address: Shri Ravi Shankar Prasad, Additional Secretary, Ministry of Environment, Forest and Climate Change, Government of India
- Moderator: Mr Yvo de Boer, President, Gold Standard Foundation
- Mr Nitin Prasad, Chairman, Shell Group of Companies, India
- Mr Vineet Mittal, Chairman, Avaada Group
- Mr R Mukundan, Managing Director, Tata Chemicals Ltd and Co-Chair, TERI CBS
- Mr Mahendra Singhi, MD & CEO, Dalmia Cement (Bharat) Ltd and Co-Chair, TERI CBS
- Mr Rajiv Mishra, Managing Director, CLP India Pvt Ltd
- Mr Anil B Jain, Managing Director, Jain Irrigation Systems Ltd
- Mr Alexander Slater, Deputy Managing Director, U.S.-India Business Council (USIBC), India
- Way Forward: Mr Nitin Desai, Chairman, TERI

Delivering the session's welcome address, **Dr Ajay Mathur, Director General, TERI**, discussed the role of corporates in building the ecosystem for low-carbon solutions.

Mr. Ravi Shankar Prasad, Additional Secretary, Ministry of Environment, Forest and Climate Change, Government of India, emphasized the need to chart a development pathway of collective actions by government, civil societies, private sector, and citizens to ensure sustainable growth, eradicate poverty, and create jobs.

Underscoring the need to expedite environment-friendly practices in his keynote address, **Mr Michael Bloomberg, Founder, Bloomberg LP & Bloomberg Philanthropies, and United Nations' Special Envoy for Climate Ambition and Solutions**, acknowledged the renewables leadership role that India had taken by spearheading the International Solar Alliance. He also noted the net-zero commitments being made by Indian businesses, and expounded on the socio-economic benefits of a greener, cleaner future.

Mr Nitin Prasad, Chairman, Shell Group of Companies, India, discussed Shell's carbon strategy to achieve net-zero energy business by 2050, and stressed the need for innovative technologies, as well as operating principles rooted in environmental, social, and governance (ESG) values. He also emphasized the need for incubating, supporting, and commercializing new technologies in the energy sector as a vital component of supporting sustainability goals.

Citing the example of Dalmia Cement, recognized as a cement company with the world's lowest carbon footprint, **Mr Mahendra Singhi, MD & CEO, Dalmia Cement, (Bharat) Ltd** emphasized that reducing emissions for hard-to-abate sectors is not only possible but had played a key role in Dalmia Cement's emergence as one of India's most profitable companies.

Mr. Rajiv Mishra, Managing Director, CLP India Pvt. Ltd, touched upon the need to overhaul power regulations and tariff structures to enable renewables to play a stronger role in India's power mix.

Mr. Anil B Jain, Managing Director, Jain Irrigation Systems Ltd, provided insights on the role of sustainability in agriculture, which contributes to 17–18% of India's total emissions. He also spoke on the

importance of a bottom-up low-carbon approach that can enable farmer prosperity and sustenance of natural systems.

The session, which was moderated by **Mr Yvo de Boer, President, Gold Standard Foundation**, was also attended by **Mr Vineet Mittal, Chairman, Avaada Group**; **Mr R Mukundan, Managing Director, Tata Chemicals Ltd and Co-Chair, TERI CBS, Executive Committee**; and **Mr Alexander Slater, Deputy Managing Director, U.S.-India Business Council (USIBC), India**.

Delivering the vote of thanks, **Mr Nitin Desai, Chairman, TERI**, appreciated the private sector's leadership in setting new sustainability benchmarks towards a low-carbon future.

Mega Climate Change Plenary on Climate Finance: Mobilising Finance for Enhanced Climate Action

Eminent Speakers:

- Welcome Address: Mr RR Rashmi, Distinguished Fellow, TERI
- Moderator: Mr Pankaj Sindwani, Chief Business Officer, Sales, Tata Cleantech Capital Limited

Panellists:

- Ms Patricia Espinosa, Executive Secretary, United Nations Framework Convention on Climate Change
 - Ms Rachel Kyte, Dean, The Fletcher School, Tufts University
 - Mr John Murton, UK's COP26 Envoy
 - Mr John A Roome, Regional Director, South Asia Sustainable Development, The World Bank
- Calling the Paris Agreement's multilateralism spirit a blueprint for climate action success, **Ms Patricia Espinosa, Executive Secretary, United Nations Framework Convention on Climate Change (UNFCCC)**, said adaptation and resilience need to

be recognized by multilateral development banks in the form of comprehensive financing mechanisms. Further, she called on multilateral development banks to raise more funds for adaptation actions.

Ms Rachel Kyte, Dean, The Fletcher School, Tufts University, echoed Ms Espinosa's thoughts on resilience and adaptation, adding that the issue of mobilizing climate funds has three dimensions: the 100 billion USD annual pledge made at Paris must be realised urgently; the need to stimulate climate financing; and the need for a systemic change. In this context, she recommended that the public financial development banks of developed nations should channelise funding to climate-relevant areas like renewable energy, energy storage, electric vehicles (EVs), and relevant EV infrastructure.

Mr John Murton, UK's COP26 Envoy emphasized improvements in the quality and quantity of public finance and the need to focus on adaptation and resilience actions rather than just climate change mitigation. He concluded by acknowledging the need for private finance involvement for a low-carbon economy transition.

Mr John A. Roome, Regional Director, South Asia Sustainable Development, World Bank emphasised the need to mainstream climate action in early finance decisions. He also highlighted the need for carbon pricing and the role of international carbon markets. He concluded by saying that India's strong energy sustainability portfolio makes it a compelling fit in the climate leadership triangle formed by the United States, China, and the European Union.

Towards an Enabling Global Environment: Accelerating women leadership and empowerment

Eminent Speakers:

Welcome Remarks: Dr Ajay Mathur, Director General, TERI

Special Addresses: Ms Karen Klimowski, Acting Deputy Mission Director, USAID/India

Chair: Ms Vaishali Sinha, Chief Sustainability Officer, ReNew Power Pvt Ltd and Co-Chair, SAWIE

Panellists:

Dr Mukesh Aghi, President and CEO, USISPF

Ms Sheebu David, CHRO, GE South Asia & GE Renewable Energy Onshore Wind APAC & China

Ms Anita Marangoly George, Executive Vice President, Deputy Head- CDPQ Global, CDPQ India

Dr Irene Giner-Reichl, President, Global Forum for Sustainable Energy

Delivering the session's welcome Remarks, **Dr Ajay Mathur, Director General, TERI**, said a country's progress is best measured by how its women and girls hold decision-making power in all spheres of their life. Despite efforts towards gender parity in education and career, women's representation remains low, he added, acknowledging TERI's efforts at gender inclusivity at the workplace.

Ms Karen Klimowski, Deputy Mission Director (A) USAID, commenced the session's Special Address by remarking upon the immense potential that India could unlock by investing in gender equality and women's empowerment. Investing in women's education and empowerment can help eradicate poverty, build vibrant economies, and unlock human potential on a transformational scale, she added.

Chairing the panel discussion, **Vaishali Sinha, Chief Sustainability Officer, ReNew Power Pvt Ltd and Co-Chair, SAWIE**, raised recent findings on the deficit of women in leadership positions. She said the pandemic was an opportunity to build back a better, greener, and more inclusive future for women.

Bringing attention to global findings of the discrimination women face, **Dr Mukesh Aghi, President and CEO, USISPF**, identified the rising digital divide between men and women as a complicit factor in gender discrimination. On the other hand, he said, there was a strong economic case for increasing women's workforce participation in India.

Ms Anita Marangoly George, Executive Vice President, Deputy Head- CDPQ Global, CDPQ India, shared her experiences about how increasing women's representation in organizations such as World Bank and IFC enabled better execution. Noting the low number of women at mid-level positions in multilateral organisations, she recommended that several structural changes be implemented to enable carrying out domestic responsibilities while managing their careers.

Stating that the pandemic has threatened the progress of all Sustainable Development Goals

(SDGs), especially SDG-5 (gender equality), **Dr Irene Giner-Reichl, President, Global Forum for Sustainable Energy**, said the pandemic is a call to action to build back better. She added that the talents and talent and experiences of women must be leveraged to enable societal transformations.

Ms Sheebu David, CHRO, GE South Asia & GE Renewable Energy Onshore Wind APAC & China, said any organisation aiming to support sustainability must move forward with a structured approach grounded in scalability, sustainability, and inclusivity.

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Air and Water

Clean Oceans and a Blue Economy: A Pathway for Sustainable Ocean Management



Eminent Speakers

- Chair: Mr Atul Bagai, Head of Country Office, United Nations Environment Programme, India
- Opening Remarks: Dr Madhavan Nair Rajeevan, Secretary, Ministry of Earth Sciences, Government of India
- Keynote Address: Mr Vidar Helgesen, Executive Director, Nobelstiftelsen
- Special Address: Mr Serge Segura, French Ambassador for Oceans

Panellists

- Dr Axel Borchmann, Deputy head of unit Federal Ministry for the Environment, Nature Protection and Nuclear Safety
- Mr Andreas Hansen, Head, International Marine Environment, Department for Environment, Food & Rural Affairs

- Ms Nina Jensen, Chief Executive Officer, REV Ocean, Norway
- Mr Rob Kaplan, Founder and CEO, Circulate Capital
- Mr Olivier Wenden, Vice President, Prince Albert II of Monaco Foundation

Delivering the Opening Remarks for the Thematic session titled 'Clean Oceans and a Blue Economy: A Pathway for Sustainable Ocean Management', **Dr Madhavan Nair Rajeevan, Secretary, Ministry of Earth Sciences, Government of India**, emphasized the relevance of oceans and marine ecosystems for human survival. Despite their significance, he highlighted that almost 8 million metric tonnes of waste are dumped into the ocean annually, contributing to the ongoing destruction of the marine ecosystem.

Delivering the session's keynote address, **Vidar**

Helgesen, Executive Director, Nobelstiftelsen, acknowledged the role that global political will can play in prioritising the role of oceans in the global climate dialogue. He added that the blue economy has immense socio-economic potential, including the creation of 12 million jobs by 2030, 40 per cent more renewable energy generation, and overall benefits worth \$15.5 trillion that can be unlocked via investments in sectors like mining and fisheries. Investments in sustainable ocean development can also enable the world to achieve 21% of the requisite targets needed to attain the 1.5°C Paris Agreement goal.

Delivering a special address, Mr Serge Segura, French Ambassador for Oceans, talked about the relevance of oceans to France (an archipelagic nation), the importance of the blue economy to India, and the potential of international partnerships for promoting conservation and sustainability of marine ecosystems. Towards the mandate of oceanic conservation, he called for a globally integrated approach combining societal, economic, financial, and governmental aspects.

Dr Axel Borchmann, Deputy head of unit Federal Ministry for the Environment, Nature Protection and Nuclear Safety underscored the urgency of a holistic approach - spanning across functions as diverse as collection, treatment, consumer awareness, producer responsibility and accountability - to curb the problem of marine litter. He also called for international cooperation and management to tackle the issue.

Ms Nina Jensen, Chief Executive Officer, REV Ocean, Norway, highlighted the importance of collaboration between environmental scientists, government stakeholder and the private sector in resolving marine issues. She further expressed the need for a global data-sharing revolution to bridge the gap of scientific knowledge needed to address the issue.

Mr Olivier Wenden, Vice-President and CEO Prince Albert II of Monaco Foundation foregrounded the opportunity the world can explore in a post-pandemic world to bring in a green shift, given that humanity has already experienced what the environment would be if everything came to a standstill. He said we can achieve both economic and socio-economic progress by bridging the gap between international legal frameworks and national jurisdictions. Calling for immediate actions to save oceans, Mr Andreas Hansen said, "With rising sea levels and polluted marine wetlands, many species are on the verge of extinction." In order to save the ocean, he pointed out two key solutions which

include global cooperation in regulatory framework development and protection of existing marine life. A garbage truck's equivalent of garbage is dumped into oceans every minute, explained **Rob Kaplan, Founder and CEO, Circulate Capital**, underscoring the seriousness of oceanic waste. Addressing this necessitates private investment in the sustainable development of water bodies worldwide. For India, this approach can create US\$ 2 billion in economic value, along with millions of new jobs and the mitigation of 15 tonnes of CO2 emissions by 2030.

Olivier Wenden recommended investment in sustainable recycling and waste management systems to overcome marine litter.

Summarizing the session, **Mr Atul Bagai, Head, India Country Office, United Nations Environment Programme (UNEP)** said that strengthening the blue economy requires a harmonious relationship between economic growth and ocean development. Here, he recommended the role of multilateral cooperation to help countries accelerate marine sustainability actions.

Future of Air: Progress and constraints

Eminent Speakers:

- Moderator: Dr Ajay Mathur, Director General, TERI

Panellists:

- Mr Mitchell Bernard, President and Chief Counsel, Natural Resources Defense Council
- Mr M Kutty, Chairperson, Commission for Air Quality Management in National Capital Region and Adjoining Areas
- Ms Priya Shankar, Director- India Environment Programme, Bloomberg Philanthropies
- Mr James Thornton, CEO, ClientEarth

Delivering the Welcome Address for the 'Future of Air: Progress and constraints' session, **Session Chair Dr Ajay Mathur, Director General, TERI**, spoke about the importance of tackling regional sources with equal or more intensity to clean Delhi's air quality. In this context, he expressed delight in the setting up of the Commission for Air Quality Management in National Capital Region and Adjoining Areas.

Mr M.M. Kutty, Chairman, Commission for Air Quality Management in National Capital Region and Adjoining Areas, spoke about the need for multiple and continuous climate actions for air pollution mitigation, including standards for construction and

demolition and automobile emissions, increasing access to clean cooking, higher renewable energy penetration, rising BS-VI vehicle adoption, use of natural gas as a domestic fuel, and rising metro penetration across major cities. Policy action is now being used to address the issue of open agri-stubble burning, by developing a plan of action in consultation with the states of Uttar Pradesh, Punjab, Haryana, Delhi, and Rajasthan.

Mr Mitchell Bernard, President and Chief Counsel, Natural Resources Defense Council, discussed America's renewed commitment to climate change, stating that US government is not just promoting but pushing cleaner environment policies. Citing studies linking economic development and access to clean air, he said development must be directed in environmentally safe ways. He also noted India's efforts towards clean air, including the National Clean Air Programme.

Recalling his experience as a lawyer for the Natural Resources Defense Council (NRDC), a United States-based non-profit international environmental

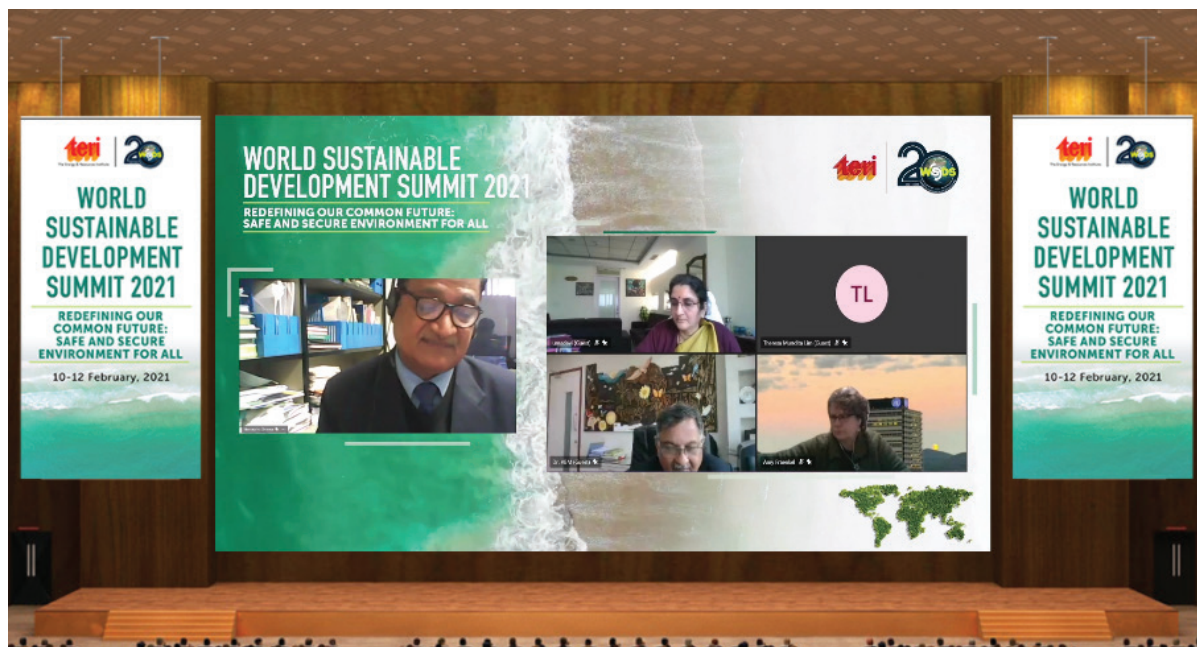
advocacy group, he said that legal action had been effective in forcing government and private organisation to adopt greener systems among many European Union (EU) countries. He said the EU precedent - which had contributed to stringent clean energy laws - could be replicated in US, China, and some other Asian countries.

Ms Priya Shankar, Director- India Environment Programme, Bloomberg Philanthropies, spoke about the success of government initiatives, such as the Ujjwala Yojana scheme (which had reduced household air pollution) and the Switch Delhi policy (which promotes electric vehicles in the Capital). She added that while India has an opportunity to leapfrog western counterparts in adopting more sustainable practices, the complexity of air pollution sources in many cities (across transport, domestic pollution, industrial and power generation emission) requires more awareness, coordination and collaboration, and partnerships between civil society, academia, and citizens.

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Biodiversity

Role of biodiversity conservation in a green and resilient post-pandemic economy



Eminent Speakers

- Chair: Dr Vinod Mathur, Chairperson, National Biodiversity Authority
- Theme Setting: Mr Siddharth S Edake, Fellow, Land Resources Division, TERI
- Keynote Address: Ms Åslaug Marie Haga, Associate Vice President, External Relations and Governance Department, International Fund for Agricultural Development, Norway

Panellists:

- Ms Amy Fraenkel, Executive Secretary, Convention on Migratory Species, Bonn
- Dr Midori Paxton, Head- Ecosystems and Biodiversity, United Nations Development Programme
- Dr Theresa Mundita Lim, Executive Director, ASEAN Centre for Biodiversity

- Mr Basile van Havre, Co-Chair, Convention on Biological Diversity (via video)
- Dr J V Sharma, Director, Land Resources Division, TERI
- Ms B V Umadevi, Additional Secretary, Ministry of Environment, Forests and Climate Change, Government of India

Vote of Thanks: Mr Siddharth S Edake, Fellow, Land Resources Division, TERI

Delivering the keynote address, **Ms Åslaug Marie Haga, External Relations and Governance - Associate Vice-President, IFAD (International Fund for Agricultural Development, Norway)**, emphasized the importance of biodiversity, stating that a loss of biodiversity means a loss of options for the future generations. She added that climate change, urbanization and agriculture practice are accelerating biodiversity loss.

Ms Amy Fraenkel, Executive Secretary, Convention on Migratory Species, Bonn, explored the linkages between the decline of migratory species with global conditions such as the pandemic and said that international cooperation is vital to the conservation of species. The two major drivers of biodiversity loss – the destruction of natural habitats and direct use of wild species – are also leading to zoonotic diseases, she added.

In her message, **Dr Midori Paxton, Head-Ecosystems and Biodiversity, United Nations Development Programme** spoke of the need to end “the war against nature” and humanity’s “scorched earth policies”, which are endangering millions of animal and plant species, and eventually mankind. She emphasized the need to recalibrate global economies to develop with nature, highlighting interventions such as redirecting global finances to green endeavours, overhauling the production and consumption system, and ensuring that governments fully integrate nature in planning.

Dr Theresa Mundita Lim, Executive Director, ASEAN Centre for Biodiversity Manila, Philippines, said the Covid recovery plan being deployed by ASEAN countries sees biodiversity as a cross-cutting issue. The plan, she said, focuses on increasing investment in biodiversity and wildlife protection to prevent future pandemics and leveraging nature-based solutions to build post-COVID resilience and recovery.

Mr Basile van Havre, Co-Chair, Convention on Biological Diversity reaffirmed the interconnection between biodiversity and human prosperity. He said the pandemic has served important lessons about fostering a sustainable relationship with nature, because the same threats that drive biodiversity loss are the ones causing zoonotic diseases, demonstrating cross-linkages with human health.

Dr J V Sharma, Director, Land Resources Division, TERI highlighted the contribution of biodiversity and ecosystem services to the overall economy, globally and state-wise. He stated that the economic evaluation of ecosystem services is important in the policy-planning process. He also emphasized the need for biodiversity conservation through the involvement of youth.

Examining Interlinkages to Climate Action, Biodiversity

Protection and Circular Economy

Eminent Speakers:

- Chair: Mr Rameshwar Prasad Gupta, Secretary, Ministry of Environment, Forest and Climate Change, Government of India
- Welcome Remarks: Mr Christophe Manet, Chargé d’Affaires, Delegation of the European Union to India
- Keynote Address: Ms Inger Andersen, Executive Director, United Nations Environment Programme

Panellists:

- Mr Basile van Havre, Co-Chair, Convention on Biological Diversity
- Mr P V S Surya Kumar, Deputy Managing Director, NABARD
- Ms Astrid Schomaker, Director, Global Sustainable Development, European Commission
- Prof. Kazuhiko Takeuchi, President, Institute for Global Environmental Strategies

Delivering the welcome address of the session on ‘Examining Interlinkages to Climate Action, Biodiversity Protection and Circular Economy’, **Mr Rameshwar Prasad Gupta, Secretary, Ministry of Environment, Forest and Climate Change, Government of India, and session chair**, highlighted the work undertaken by the Ministry of Environment, Forest, and Climate Change (MoEFCC) in the sphere of climate action, biodiversity, and circular economy. He touched upon the interlinkages between climate action, biodiversity protection, and six principles (redesign, reduce, reuse, recycle, repair, and refurbish) of circular economy (CE) which are the only solution to preserve natural ecosystems. His address highlighted the key CE opportunities that exist across sectors as diverse as steel, aluminium, transport, construction, and agriculture. He added that the pandemic has exacerbated the climate crisis and has created more investment demand in the form of recovery packages.

Delivering the session’s welcome remarks, **Mr. Christophe Manet, Charge d’affaires, Delegation of the European Union to India** emphasised collaboration and collective governance to deal with climate change and biodiversity loss. Considering the interconnectedness in global supply chains, he said a collaborative multi-government effort could pave the way for a sustainable future. He reiterated the EU Green deal, which promotes decarbonisation through various initiatives, including new renewable

energy projects, financing the installation of 1 million EV charging points, clean fleet renewals by cities and companies, sustainable transport infrastructure, and a clean hydrogen strategy.

We can no longer pursue growth without taking into consideration its impact on nature, said **Prof. Kazuhiko Takeuchi, President, Institute for Global Environmental Strategies (IGES)**. Instead, humanity must consider a short-term response to Covid, while providing a long-term vision for transformative change. He recommended the Triple R framework proposed by IGES as a viable solution: “Responding” to the COVID crisis, taking countermeasures to “Recover”, and “Redesigning” current socioeconomic systems, with an emphasis on a just transition to a truly sustainable and resilient world.

Mr P.V.S. Surya Kumar, Deputy Managing Director, NABARD, pointed out the importance of natural assets to economies, stating that nearly 50% of global income comes from nature through its services in key economic sectors like agriculture, construction, and mining. Further, biodiversity and ecosystem services play an important role in reducing CO2 emissions by acting carbon sinks, thereby mitigating climate change. Hence curtailing biodiversity loss is important for ensuring the continued flow of ecosystem services to humans. For example, if deforestation rates are halved by

2030, the cost of avoided damage from climate change would amount to US\$3.7 trillion in terms of Net Present Value.

Ms Inger Andersen, Executive Director, United Nations Environment Programme, said a global transition to a circular economy should be viewed as a smart economic decision that can end three crises: climate change, biodiversity, and nature loss, pollution, and waste. However, a CE approach will entail a lot of effort to be undertaken by multiple stakeholders, as well as multilateral governance. The forthcoming Conference of Parties (COP) 26 in Glasgow in November is also a step in this direction. Similarly, the EU Green Deal also foregrounds the importance of CE to achieve climate neutrality by 2050. India’s leadership and environmental stewardship are, therefore, imperative to move towards a pollution-free planet.

Ms Astrid Schomaker, Director, Global Sustainable Development, European Commission, said the climate crisis necessitates a united effort engaging all stakeholders - including governments, companies, civil society - to find sustainable solutions.

Mr Basile van Havre, Co-Chair, Convention on Biological Diversity said circular economy holds the key to responding to growing demand and transitioning to a sustainable model and emphasized the inclusion of the informal sector.

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Tracing the Summit Days: Thematic Tracks

Private Sector's Role in Achieving Climate Resilience: Leading Examples from Coastal Cities



Eminent Speakers

- Introductory Remarks: Mr Edwin Koekkoek, Counsellor, Energy and Climate Action, Delegation of the European Union to India
- Mr Narinder Nayar, Chairman, Mumbai First
- Mr Saurabh Bhardwaj, Fellow, Earth Science and Climate Change Division, TERI
- Ms Sanne van der Mijl, Project Leader, Climate Adaptation Summit, Ministry of Infrastructure and Water Management, The Netherlands
- Moderator: Mr Anirban Ghosh, Chief Sustainability Officer (CSO), Mahindra and Mahindra
- Mr Ram Vaidyanathan, Head - Environmental Sustainability, Godrej Group
- Ms Shloka Nath, Executive Director, India Climate Collaborative and Leader, Sustainability Portfolio, Tata Trusts
- Mr Lennart Silvis, Global Director, Water for Industry, Royal Haskoning DHV
- Mr Frédéric Woringer, Director, Climate and Infrastructures Department, AETS
- Mr Hans-Peter Egler, Director, Public Affairs, South Pole

The thematic session on the 'Private Sector's Role in Achieving Climate Resilience: Leading Examples from Coastal Cities' deconstructed the significant potential of the private sector in leading climate change efforts. The speakers highlighted the role of the private sector in devising scalable sustainability solutions based on a shared vision.

The speakers underpinned the importance of a collaborative approach, wherein private players, along with planners, policymakers, and elected officials can work together to develop adaptation and mitigation strategies to address climate change. During the session, **Mr Saurabh Bhardwaj, Fellow, Earth Science and Climate Change Division, TERI**, said building climate resilience is an option that offers holistic mechanisms to address climate variability and change, without compromising on present development changes. **Mr Narinder Nayar, Chairman, Mumbai First**, remarked that even though Mumbai faces ecological and social challenges through climate change, the focus is still on isolated events rather than on building a systematic lens to view the city's risk profile.

Mr Frédéric Woringer, Director, Climate and Infrastructures Department, AETS, highlighted the potential of using flora and fauna to rejuvenate habitats. He added that this can act as a good carbon sink and as a consequence boost green tourism. **Mr Anirban Ghosh, Chief Sustainability Officer (CSO), Mahindra Group**, emphasised the importance of learning from the lessons of the past and the need for big data repositories to understand the future impact on coastal cities as well as other settlements. The panelists unanimously agreed that the public-private partnership model can play a significant role in building, operating, and managing resilient infrastructure and scaling up sustainable solutions for future development.

Mainstreaming Climate Finance Solutions in SMEs Including Start-Ups

Eminent Speakers

- Welcome Address: Dr Ajay Mathur, Director General, TERI
- Keynote Address: Mr Ashok Lavasa, Vice President, ADB
- Ms Kathrin Kirsch, Enterprise Support Advisor,

SEED

- Moderator: Mr Ajay Shankar, Distinguished Fellow, TERI

Panellists:

- Mr Rainer Agster, Director of Operations at SEED & Executive Board Member at adelphi
- Mr Santosh Singh, Director, Intellectap
- Ms Namita Vikas, Founder & Managing Partner, auctusESG LLP
- Mr Shankar A Pande, Director, Bankers Institute of Rural Development
- Mr R K Mittal, CGM (Sustainability), GAIL
- Mr Sandeep Roy Choudhury, Co-founder, VNV Advisory

Vote of Thanks: Dr. Malini Balakrishnan, Coordinator-SEED India Hub & Senior Fellow, TERI

The thematic session titled 'Mainstreaming Climate Finance Solutions in SMEs Including Start-Ups' discussed how start-ups and SMEs form a key component of India's climate action machinery. **Dr Ajay Mathur, Director General, TERI** commenced the session with this welcome address, wherein he highlighted the key role climate finance plays in leading global climate action. **Ms Namita Vikas, Founder and Managing Partner, auctusESG LLP** highlighted the shortage of funds allocation as one of the challenges for the successful roll-out of climate finance solutions. She suggested that, in a bid to overcome this challenge, blended finance can be a potential solution, where Development Finance Institutions (DFIs) can play a key role.

Mr Ashok Lavasa, Vice President, ADB, spoke of the importance of climate finance for SMEs and mentioned his involvement in negotiating the Paris Agreement as former Secretary, Ministry of Environment, Forest and Climate Change. **Ms Kathrin Kirsch, Enterprise Support Advisor, SEED**, underpinned the importance of the Practitioners Lab for Climate Finance as an approach to address challenges faced by SMEs and financial institutions. He also said the lab can be leveraged for opportunities to innovate climate finance solutions. **Mr Santosh Singh, Director, Intellectap**, highlighted a prospective solution for stimulating climate finance for MSMEs and described an online platform for climate financing, wherein an ecosystem can be formed to bridge the gap between demand and supply (SMEs and financial institution or investors). **Mr Shankar A. Pande, Director, Bankers Institute of Rural Development**, spoke about the government and National Bank for Agriculture and Rural Development's (NABARD) initiatives such as NAB Ventures and NAB Sanrakshan. These initiatives,

he said, are supporting agri-based SMEs and startups to make them more climate-resilient.

According to **Mr Sandeep Roy Choudhury, Co-Founder, VNV Advisory**, the absence of data on SMEs, the unfavourable perception related to investment in climate finance solutions due to higher payback, the lack of homogenisation of industries, and customised funding for different sectors are some of the major roadblocks for stimulating climate finance for SMEs. **Mr Ajay Shankar, Distinguished Fellow, TERI**, concluded the session by underpinning the role of technology as an enabler for climate finance for SMEs and the need for creating bespoke platforms for aggregators and service providers.

Accelerating and Institutionalising Resource Efficiency and Circular Economy in India

Eminent Speakers:

- Introduction: Ms Mehar Kaur, Research Associate, TERI
- Welcome Address: Mr RR Rashmi, Distinguished Fellow and Programme Director, Earth Science and Climate Change, TERI
- Ms Astrid Schomaker, Director, Global Sustainable Development, Directorate General for Environment, European Commission
- Dr Bhawna Singh, Scientist 'E', MoEFCC (Resource Efficiency Cell)

Panellists:

- Moderator: Mr Michael Bucki, EUD Counsellor
- Dr Janez Potocnik, Co-Chair of UN International Resources Panel, Former European Commissioner for Environment
- Ms Seema Arora, Deputy Director-General, CII
- Dr Rachna Arora, Team Leader, EU-REI II
- Ms Ekta Narain, Director - Business Development, Recykal
- Mr Joseph Arullappan, CEO, FOV Biogas India Pvt Ltd
- Dr Asad Warsi, Project Management Consultant, Indore Municipal Corporation
- Vote of Thanks: Dr Shilpi Kapur, Senior Fellow, TERI

The thematic session on 'Accelerating and Institutionalising Resource Efficiency and Circular Economy in India' delved into the resource consumption patterns of various sectors in the country, with the need for the development of a regulatory framework being highlighted as a key imperative. **Mr R.R. Rashmi, Distinguished Fellow and Programme Director, Earth Science and Climate Change, TERI**, began the proceedings as he spoke about how resource efficiency and circular economy could be anchored to the actions of environmental management in different streams like climate change biodiversity.

Mrs Astrid Schomaker, Director, Global Sustainable Development, Directorate-General for Environment, European Commission, said that with India having the largest middle-class population and being the fourth largest country in terms of greenhouse gas emissions, a clear focus on resource efficiency and circular economy could help mitigate the negative externalities and create benefits for the environment by reducing emissions.

Dr Bhawana Singh Scientist 'E', MoEFCC (Resource Efficiency Cell), said the government's priority is to promote resource efficiency, which is also reflected in various government policies such as Swachh Bharat Mission, E-vehicles adoption, Waste Management Rules, etc. She further added that resource efficiency and circular economy can deal with resource constraints and provide benefits to the industries and other stakeholders.

The panel discussion, moderated by **Mr Michael Bucki, EUD Counsellor**, and attended by **Dr Janez Potocnik, Co-Chair of UN International Resources Panel, Ms Seema Arora, Deputy Director-General, CII, Dr Rachna Arora, Team Leader, EU-REI II, Ms Ekta Narain, Director - Business Development, Recykal, Mr Joseph Arullappan, CEO, FOV Biogas India Pvt Ltd and Dr Asad Warsi, Project Management Consultant, Indore Municipal Corporation** threw some thought-provoking insights on the important aspects of the India-EU partnership and collaboration on resource efficiency and circular economy. The panellists discussed the need to improve governance, create sustainable production and consumption patterns, and develop comprehensive and working models that can be scaled up and replicated to contribute to the circular economy and optimise resource efficiency. The session also saw the launch of EU-REI Phase II.

The vote of thanks for the session was delivered by **Dr Shilpi Kapur, Senior Fellow, TERI**.

Collaborative Platforms to Fast-track India Inc.'s 'Race to Zero'

Eminent Speakers:

- Welcome Address: Dr Ashvini Kumar, Sr. Director – Renewable Energy, TERI
- Opening Remarks: Ms Rhiannon Harries, Deputy Trade Commissioner, South Asia, British High Commission
- Special Address: Dr Arun Kumar Tripathi, Director General, National Institute of Solar Energy
- Mr Chirag Gajjar, Head Subnational Climate Action, Climate Program, WRI
- Dr Divya Sharma, Executive Director, The Climate Group India.

Panellists:

- Chairperson: Mr Nigel Topping, High level Climate Action Champion for COP26
- Mr Mahendra Singhi, MD & CEO, Dalmia Cement (Bharat) Ltd
- Mr Rajiv Mishra, Managing Director, CLP India Pvt Ltd
- Dr Maria Mendiluce, CEO, We Mean Business Coalition
- Ms Deeksha Vats, Chief Sustainability Officer, Aditya Birla Group
- Mr Rohit Anand, Head – Infrastructure, CDC Group
- Mr Bose Varghese, Head – Green Initiatives, Infosys Ltd.
- Dr Sunita Purushottam, Head of Sustainability, Mahindra Lifespace Developers Ltd
- Vote of Thanks: Mr Arupendra Nath Mullick, Vice President, TERI Council for Business Sustainability

The thematic session on 'Collaborative Platforms to Fast-track India Inc.'s 'Race to Zero' Emissions' highlighted the merits of a collaborative approach by corporate to create a net-zero economy.

Ms Rhiannon Harries, Deputy Trade Commissioner, South Asia, British High Commission, said India is home to some of the biggest multinational

companies in the world, many of whom are driving climate action in India and globally. She added that COP26 and the journey to the 2030 and 2050 goals of the Paris Agreement is, therefore, a powerful imperative for India Inc.

Mr Chirag Gajjar, Head - Subnational Climate Action, WRI, explained that Corporate Green Leadership Alliance, an initiative by the British High Commission, is charting a forward course with a deep understanding of the critical barriers that still hinder the uptake of renewables, energy efficiency and electric vehicles. Reducing carbon footprint brings efficiency, prosperity, pride, and happiness, said **Mr Mahendra Singhi, MD & CEO, Dalmia Cement, (Bharat) Ltd.** He added that Dalmia Cement has blazed a trail that not many have been able to follow. Today it has the lowest carbon footprint of any cement company anywhere in the world, a recognition bestowed by the CDP Group, a UK-government-owned development finance institution in 2018. The need for business to acknowledge and navigate their challenges is greater than ever.

The industry-wide support for sustainability is gaining momentum, said **Dr Divya Sharma, Executive Director, The Climate Group India.** The Climate Group's RE100 global initiative brings together influential global businesses to commit to 100% renewable-powered operations. While the Paris Agreement envisions a world of net-zero emissions by 2050, the RE100 companies usually target going 100% renewable by 2028. This means that the private sector - having witnessed the financial and operational savings from going green - is speeding up the transition to a net-zero world. **Mr Rohit Anand, Head – Infrastructure, CDC Group**, said, "Another factor at play is the high foreign investor appetite for Indian clean energy development. India's renewables goal - recently stretched to 450 GW by 2030 - has made this decade an excellent time to enter the sector. A decade ago, it was difficult to raise even 50 million USD"

Mr Rajiv Mishra, Managing Director, CLP Power India Pvt. Ltd., explained that the scale of change that net-zero demands present some challenges as well. While India's incredibly low renewables prices make it a sounder investment than thermal energy, high cross-subsidies prevent consumers from accessing clean power at cheap rates.

Air Pollution

Decarbonising South Asia



Eminent Speakers:

- Welcome Remarks: Mr R.R. Rashmi, Distinguished Fellow, TERI
- Introductory Remarks: Mr Abhas Kumar Jha, Practice Manager, DRM and Climate Change, World Bank
- Deep decarbonization pathways-An overarching framework: Mr Stephane Hallegatte, Lead Economist, World Bank
- Decarbonizing South Asia: Possible approaches: Dr Muthukumara Mani, Lead Economist, World Bank
- Guiding framework for India's Long-term Strategy: Ms Mekhala Sastry, Research Associate, TERI

Panellists:

- Ms Neha Mukhi, Senior Climate Change Specialist, World Bank (moderator)
- Mr Ali Tauqeer Sheikh, Founding CEO & National Program Director, LEAD Pakistan

- Mr Utpal Bhattacharjee, GHG Mitigation expert, UNDP Bangladesh
- Mr Chirag Gajjar, Head Subnational Climate Action, WRI India
- Closing Remarks: Dr A.K. Jain, Secretary, Ministry of Coal, Government of India

Vote of Thanks: Mr Abhishek Kaushik, Associate Fellow & Area Convener, TERI

Addressing the thematic session on 'Decarbonising South Asia' at WSDS 2021, **Mr R.R. Rashmi, Distinguished Fellow, TERI**, said, "Countries in South Asian region should not only contribute to the area of mitigation, but also in adaptation and building resilience. And for the entire range of these actions, decarbonisation is extremely critical. Even today, India has added almost 38% of its total electricity generation capacity from renewables. However, the contribution in terms of actual energy generation is just 4% and almost 70% of the demand is being met by fossil fuels."

He spoke about the need to look at the gap in various sectors closely, whether it is renewable energy itself, EVs, energy usage in agriculture, water sector, industries, etc. He further said that the South Asian Region needs to build a long-term strategy for decarbonisation.

Ms Mekhala Sastry, Research Associate, TERI provided a guiding framework for India's long-term strategy for decarbonisation. Speaking at the session, **Mr. Stephane Hallegatte, Lead Economist, World Bank**, said the aim of the 2030 strategy is to build the foundations for decarbonisation, not just achieving a given level of reduction at the lower cost. He added that when we think of the long-term strategy, we cannot assume the technology will be same as today. In future newer technologies will be available at a cheaper cost. And the uncertainty on these technologies really needs to be at the heart of the long-term strategy.

"A low-carbon transition of economies in SAR will not only contribute to the global climate goals but also help countries chart sustainable growth pathways," said **Dr. Muthukumara Mani, Lead Economist, World Bank**. According to him, it is essential to decouple economic growth from unsustainable pressures, such as those leading to global climate change. It is also important to understand the channels through which a low-carbon transition could affect the economies (jobs, stranded assets) and the possible speed of such a transition, he added. The panelists in the session, including **Ms Neha Mukhi, Senior Climate Change Specialist, World Bank**; **Mr Ali Tauqeer Sheikh, Founding CEO & National Program Director, LEAD, Pakistan**; **Mr Utpal Bhattacharjee, GHG Mitigation expert, UNDP Bangladesh**; and **Mr. Chirag Gajjar, Head Subnational Climate Action, WRI India** shared their perspective on the plans of some of the South Asian countries towards ushering in decarbonisation.

Are We Really Aware About Air Pollution and its Impacts?

Eminent Speakers:

- Welcome remarks: Dr Sumit Sharma, Director – Earth Science and Climate Change, TERI
- Inaugural remarks: Dr Jonathan Demenge, Head of Swiss Agency for Development and Cooperation (SDC)

Panellists:

- Moderator: Dr Sumit Sharma, Director – Earth Science and Climate Change, TERI
- Prof R. Guleria, Director, AIIMS
- Prof Arun Sharma, Director-Professor, University College of Medical Sciences
- Prof Archana Kumar (Behavioral Change Expert, Associate Professor, Lady Irwin College)
- Mr Vikrant Gupta, Senior Executive Editor (Sports) with TV Today Network
- Mr Harbhajan Singh, Indian Cricketer
- Ms Archana Khanna Chhabra, Teacher, Puranchndra Vidyaniketan, Kanpur
- Mr Naman Sawhney, Student, City Montessori School Aliganj, Lucknow
- Ms Anshika Maurya, Student, City Montessori School Aliganj, Lucknow

Vote of Thanks: Dr. Anju Goel, Fellow – Earth Science and Climate Change, TERI

The thematic track, 'Are We Really Aware about Air Pollution and its Impacts' aimed to gauge the awareness around the severity of the air pollution challenge. Delivering the opening remarks, **Dr. Sumit Sharma, Director – Earth Science and Climate Change, TERI**, said as a health issue, air pollution is not limited to just emissions at source, but how the particulate matter and gases interact in the atmosphere. He added that this interplay creates dangerous compounds that trigger respiratory and cardiovascular issues, and even cause cancer. Due to high levels of ozone at breathing level, 20 to 30 per cent of wheat is lost in fields every year. Today, airborne particulate matter is directly contributing to climatic disruptions.

Professor Arun Sharma, Director-Professor, University College of Medical Sciences, said the media has made pollution a seasonal issue. Though scientists, doctors, researchers, and activists engage with this issue all throughout, the media picks it up mostly during the October to January period. Air pollution completely disappears from headlines in the ensuing months. With the sense of public urgency gone, the desire to act against it diminishes. Despite its numerous impacts, air pollution continues to operate as a silent killer, explained Dr. R. Guleria, Director, All India Institute of Medical Sciences (AIIMS). The sense of emergency that air pollution merits rarely arise. Only adverse episodes of air pollution - such as the Delhi smog of 2016 or the London Smog of 1952 – make it immediately visible and palpable for nations and communities

Dr. Jonathan Demenge, Head of the Swiss Agency for Development and Cooperation (SDC), explained

that tackling air pollution becomes even more urgent when we look at global findings. More lives are lost to air pollution than due to alcohol use, tobacco use, war, or tuberculosis. For respiratory problems, air pollution causes even more disability than tobacco use, he said, citing a Lancet report.

Dr Archana Kumar, Associate Professor, Lady Irwin College, explained that information alone does not translate into action. To make air pollution an actionable priority, communication cannot be based on an appeal to logic, but instead must be built around people's culture, motivations, emotions, and life priorities. It is now well understood that tackling air pollution is a multi-stakeholder challenge, she explained.

Is a Decarbonised Transport Sector Possible in India by 2050?

Eminent Speakers:

- Mr Sharif Qamar, Fellow, Centre for Sustainable Mobility, TERI

Panellists:

- Moderator: Mr Sudhendhu J Sinha, Advisor, Transport NITI Aayo
- Prof Geetam Tiwari, MoUD Chair Professor, TRIPP, IIT-Delhi
- Mr Clay Stranger, Senior Principal and Senior Director, RMI
- Mr Vivek Chandran, Associate Director, Shakti Sustainable Energy Foundation

The session on 'Is a Decarbonized Transport Sector Possible in India by 2050' looked into the potential of decarbonizing the transport sector. Delivering the opening remarks, **Mr Sharif Qamar, Fellow, Centre for Sustainable Mobility, TERI,** said that the two major areas surrounding the question of whether a decarbonised transport sector is possible in India by 2050 are: 1) A no-regret infrastructure approach and 2) Incentivising zero-carbon transport. He added that the emission share of railways has been declining over the years, with road transport witnessing a marked increase. He also said that along with a net-zero emission approach of the railways, it must increase its share in India's transport mix. He

further discussed four strategies to decarbonise the transport sector—modal shift, alternative fuel, fuel efficiency, and demand reduction.

Mr Sudhendhu J Sinha, Advisor, Transport, NITI Aayog spoke about the government's initiatives being aimed at localisation of jobs and manufacturing in the country. He added that last-mile connectivity is essential for the passenger and freight sector; and remains a high-priority goal of the government. However, in developed urban areas, the challenge of inclusion of last-mile connectivity persists. **Mr Clay Stranger, Managing Director, RMI** highlighted that since India is a service heavy economy, it will see a net gain in employment over time after transitioning to electric vehicles (EVs) with a staged approach. He stated that such an approach only seems logical for India or any other country that is looking to make a transition to EVs based on equity, market willingness, and overall impact.

Mr Vivek Chandran, Associate Director, Shakti Sustainable Energy Foundation shined the spotlight on the various challenges that must be overcome through sustainable strategies before realising the goal of decarbonising the transport sector. **Prof. Geetam Tiwari, MoUD Chair Professor, Department of Civil Engineering and TRIPP, Indian Institute of Technology-Delhi,** highlighted the huge gap between aiming, planning, and on-ground implementation in transport projects. According to her, a lack of political and administrative stability also creates issues and difficulties during implementation stages, which is why some handholding is required from policymaking to on-ground implementation of the projects. She also highlighted the importance of life cycle emissions and incorporating the emissions during construction and maintenance phases, while talking about transport decarbonisation.

Cleaning air in Indian cities

Eminent Speakers:

- Welcome remarks: Dr Sumit Sharma, Director – Earth Science and Climate Change, TERI
- Opening remarks: Ms Priya Shankar, India Director, Environment and Climate Program, Bloomberg Philanthropies

Panellists (Discussion 1):

- Moderator: Dr. Sumit Sharma, Director – Earth Science and Climate Change, TERI

- Ms Frances Beinecke, President Emerita, Natural Resources Defense Council
- Ms Glynda Bathan, Deputy Executive Director, Clean Air Asia, Philippines
- Mr Iyad Kheirbek, Programme Director Air Quality at C40 cities

Panellists (Discussion 2):

- Moderator: Dr. Prashant Gargava, Member Secretary, CPCB
- Dr Ashok Ghosh, Chairman, Bihar State Pollution Control Board
- Dr K.S Jayachandran, IFS, Member Secretary, Delhi Pollution Control Committee
- Mr Sreenivasulu, IFS, Member Secretary, Karnataka State Pollution Control Board
- Mr Banchhanidhi Pani, IAS, Municipal Commissioner, Surat

The session on ‘**Cleaning air in Indian cities**’ deliberated upon the various challenges faced in combating air pollution. They also discussed steps needed for improving air quality management and what Indian cities can learn from other countries in tackling air pollution. In his welcome remarks, **Dr Sumit Sharma, Director – Earth Science and Climate Change, TERI**, said that air pollution is not a small scale or city level problem, as the issue is regional.

According to him, air pollution is a solvable problem. However, contribution of regional scale pollution and secondary particulates are generally not accounted in the city level air quality management plans, which are significant contributors. He also called on the entities to focus energies across sectors to mitigate sources of pollution.

Ms Priya Shankar, India Director, Environment and Climate Program, Bloomberg Philanthropies, said that with 90% of the world’s population breathing unhealthy air, the complexity of air pollution is concerning. She explained that it not just an

environmental or public health issue, but also an economic one that costs the global economy \$5.7 trillion. She advocated forming comprehensive global green strategies and increased public awareness are some of the key steps to solve this issue.

Ms. Glynda Bathan, Deputy Executive Director, Clean Air Asia, Philippines, highlighted several other sources of air pollution in Asian cities, which included fuel burning in households (indoor air pollution), industries, and sources outside of cities and state boundaries. She said data-driven solutions are ideal to develop a guidance framework for enabling clean air.

Dr Prashant Gargava, Member Secretary, Central Pollution Control Board (CPCB), shed light on the collaborative efforts made by government authorities, policy makers and all key stakeholders, which has drawn the much-needed attention to the problem of air pollution in our cities. He added that the scientific community has been immensely helpful in providing data, which has proved instrumental in developing and implementing solutions. According to **Ms Frances Beinecke, President Emerita, Natural Resources Defense Council**, air pollution is a pressing public health issue in the world, particularly in Asia. She said it is important to remember that the health impacts of air pollution are closely intertwined with social and economic impact as well. To ensure and maintain sustainable air quality it is not enough to just set standards, but critical for governments, world-wide, to responsibly meet them too.

Mr Iyad Kheirbek, Programme Director Air Quality at C40 Cities, advocated for collaboration among countries to combat air pollution. According to him, cooperation across government agencies and jurisdictions, along with effective use of data on sources, exposure and health impact are some of the key components to solve this problem. He added, “Regional and collective effort cannot be compromised, for solutions cannot be achieved in isolation.”

Transition to Clean Energy

Harnessing the Socio-Economic Co-Benefits of Renewable Energy: Making the Paris Agreement a Success



Eminent Speakers:

- Ms. Neha Pahuja, TERI
- Dr Sebastian Helgenberger, COBENEFITS Project Director, Institute for Advanced Sustainability Studies (IASS)
- Special Remarks: Dr Ajay Mathur, Director General, TERI
- Dr Anju Goel, TERI
- Ms Rashmi Murali, TERI
- Mr Neeraj Kuldeep, Council on Energy, Environment and Water (CEEW)

Panellists

- Chair: Mr. RR Rashmi, Programme Director, TERI
- Dr Sekhar Bonu, Director General, Development Monitoring and Evaluation Office, NITI Aayog
- Mr Dinesh D. Jagdale, Joint Secretary, Ministry of New and Renewable Energy
- Dr Praveen Saxena, CEO, Skill Council for Green Jobs (SCGJ)
- Dr Nisha Mendiratta, Advisor/Scientist G and Associate Head, Climate Change Programme, Department of Science and Technology

- Mr Abhishek Acharya, Director, Department of Economic Affairs, Ministry of Finance

The session on 'Harnessing the Socio-Economic Co-Benefits of Renewable Energy: Making the Paris Agreement A Success' began with opening remarks from **Ms Neha Pahuja, Fellow, TERI**, who said India is in the midst of an energy transition that has important social and economic implications. After her remarks, **Dr Sebastian Helgenberger, COBENEFITS Project Director, Institute for Advanced Sustainability Studies (IASS)**, said the recommendations of the COBENEFITS policy report should be included as a part of India's climate action and in India's NDCs.

Dr Ajay Mathur, Director General, TERI, in his special remarks, said renewable energy is a low-hanging fruit in our climate change efforts and provides us with an avenue to bring down the emissions.

Mr Dinesh D. Jagdale, Joint Secretary, Ministry of New and Renewable Energy, said that with improved technology and declining costs, renewable energy penetration has become easier.

Mr Abhishek Acharya, Joint Director, Department of Economic Affairs, Ministry of Finance, underpinned the need to include the private sector through financial instruments for a seamless energy transition.

Dr Nisha Mendiratta, Scientist G, Department of Science & Technology, spoke about increasing the emphasis on mitigation and adaptation-oriented missions in India.

IEA's India Energy Outlook: Exploring Energy and Emission Pathways to 2040'

Eminent Speakers:

- Introductory Address Dr. Ajay Mathur, Director General, TERI
- Introductory Address Dr. Fatih Birol Executive Director, IEA
- Mr. Tim Gould, Head of Supply Division, World Energy Outlook, International Energy Agency
- Keynote Address: Mr Anil Jain, Secretary, Ministry of Coal

Panellists:

- Moderator: Ms Nicole Thomas, India Program Manager, IEA

- Mr Vivek Kumar Dewangan, Additional Secretary, Ministry of Power
- Mr BN Reddy, Joint Secretary, Ministry of Petroleum and Natural Gas
- Ms Reena Suri, Executive Director, India Smart Grid Forum
- Dr Ritu Mathur, Director, Integrated Assessments & Modelling, TERI
- Mr A K Saxena, Sr. Director, TERI

The thematic session on IEA's India Energy Outlook: Exploring Energy and Emission Pathways to 2040' began with remarks from **Dr Ajay Mathur, Director General, TERI**, who spoke about the changing nature of demand and supply profiles, and the rising challenge of aligning them. During the session, a special report from the International Energy Agency's World Energy Outlook series was launched.

Delivering the session's Inaugural Address, **Dr Fatih Birol, Executive Director, IEA**, complimented India on its tremendous progress in the last decade that was demonstrated through the country's rapid electrification of households, rise in LPG connections through Ujjwala Programme, and the success of LED programme. However, he cautioned India against its rising energy demand, growing oil import dependency, and urged the urgent need for development in battery storage technology to enable a smooth and sustainable energy transition.

Mr. Tim Gould, Head of Division for Energy Supply Outlooks and Investment, in his presentation, posed two questions in the framing of the IEA report. First, about the duration and severity of the pandemic and its impacts, and second, the responses of governments and companies, both in India and globally, as they seek a recovery while also tackling the urgent threat of climate change. He drew attention to the critical role of flexibility in ensuring a secure transformation of the electricity sector. **Mr Anil Jain, Secretary, Ministry of Coal**, in his keynote address, highlighted the uncertainties associated with the timing of India's energy transition, role of coal, electricity demand, and doubling of hydropower, and renewable energy. He advised emphasis on demand-side actions, industrial heat requirements, and import dependency. He suggested different ways to address these issues, including electrification of mobility, coal gasification for liquid fuels, high share of public transport, and transnational gas pipelines.

The panel discussion saw **Mr B.N. Reddy, Joint Secretary, Ministry of Petroleum and Natural Gas**, highlight the key challenges and opportunities for India to move towards a gas-based economy. He stated that the key challenge to a gas-based

economy lies in supplying customers at all levels at an affordable price with the least possible price disruptions. He also mentioned challenges related to import dependencies and geopolitical risks.

Ms Reena Suri, Executive Director, India Smart Grid Forum, focused on the flexibility requirements in India that arise due to high RE capacity and peak AC demand. She spoke about the role of digital technologies to facilitate demand flexibility amongst other options to bring flexibility. **Dr Ritu Mathur, Director, Integrated Assessments & Modelling, TERI**, mentioned that the relation between GDP growth rate and energy requirements are not and need to be linear and that the ability to decouple energy use from GDP growth is also influenced by the ability of certain sections of the society or certain sub-sectors of the industry to transition to the more efficient technologies and processes. **Dr Rahul Tongia, Senior Fellow, Centre for Social and Economic Progress (CSEP)**, said India's ambitious net-zero emissions targets could be a distraction, as they are too far away in time. According to him, India should currently look to plateau its emissions.

Electricity Transition in India: National as well as State-level Interventions

Eminent Speakers:

- Welcome Address: Mr A K Saxena, Sr. Director, TERI
- Opening remarks: Dr Ajay Mathur, Director General, TERI
- Opening remarks: Mr Gavin McGillivray, Development Director, BHC
- Special remarks: Mr S Suresh Kumar (IAS), Additional Chief Secretary, Department of Power, Government of West Bengal

Panellists:

- Moderator: Mr Ajay Shankar, Distinguished Fellow, TERI
- Mr A S Bakshi, Former Chairman, CEA, and Former Member, CERC
- Mr Praveen Gupta, Chief Engineer, Integrated Resource Planning, CEA
- Mr S K Soonee, Adviser and former CEO, POSOCO
- Ms Jane Dennett-Thorp, Deputy Director for Decarbonisation & Energy Transition (OfGem)

- Mr B B Mehta, Director (SLDC), Odisha Power Transmission Corporation Limited
- Mr Abhishek R Ranjan, Head – Renewables & DSM, Power Planning & Scheduling, Energy Analytics, BSES Rajdhani Power Limited

The thematic track on 'Electricity Transition in India: National as well as State-level Interventions' saw an eminent panel deliberated on India's imminent electricity transition, renewable integration, and the need for grid flexibility in the electricity sector.

Dr Ajay Mathur, Director General, TERI, said this is a decade of electricity transition and today renewable energy is the cheapest form of electricity when the sun is shining, and the wind is blowing. He also spoke about a swift recovery from the reduced energy demand during the lockdown, brought about by COVID-19. According to him, good financial health of the DISCOMs is an absolute necessity for India's energy transition and he hailed the INR 3 trillion power sector reform indicated in the recently tabled Union Budget.

Mr Gavin McGillivray, Development Director, UK Foreign, Commonwealth & Development Office (FCDO) in India, said India is already ahead of the curve in its electricity transition with 90 GW of RE capacity. He stressed on the importance of starting early for achieving net-zero emission for the electricity sector in India. Real life consequences of climate change are dire, and we need to swiftly decarbonise the electricity sector, he said, adding that India has been at the forefront of developing cost-effective decarbonisation technology for the electricity sector. "We have to manage the energy transition, whilst maintaining reliability and resilience of electricity," he explained.

Mr S.K. Soonee, Adviser, POSOCO, reaffirmed the importance of grid flexibility and spoke about the need for it for the entire value chain. He said there is a need to look at flexibility from a state perspective and called on states to work towards achieving it.

Ms Jane Dennett-Thorp, Deputy Director for Decarbonisation & Energy Transition, Ofgem, The UK spoke of the country's experience in power sector reform and said that long term targets and policy instruments have been pivotal in the reformation of the electricity sector in the UK. She added that for the country to achieve its net-zero target by 2050, there is a need to continue to decarbonise the power sector and also expand it to other sectors, like transport, which are being increasingly electrified.

Mr Praveen Gupta, Chief Engineer, Integrated Resource Planning, Central Electricity Authority (CEA), spoke glowingly of India's energy transition

and said the country is currently at 375 GW of installed electricity capacity, out of which around 25% is renewable capacity, at 91 GW. He identified hydro and gas power as the most suitable sources for grid flexibility and added that while India does not have very high gas capacity, the government has already begun work to ramp up its hydropower capabilities. He also added that pump storage can be useful for grid flexibility and envisaged battery storage playing a dominant role in the future, in light of falling prices. He reaffirmed the role of modelling and highlighted the related studies being done by the CEA.

Mr B Mehta, Director (SLDC), Odisha Power Transmission Corporation Limited, provided a state-level perspective to the discussion and said that renewable power is highly variable and intermittent. He stressed on the need for state level allocation for grid balancing and spoke of the need for reliable weather forecasting for a seamless renewable integration.

Just Transition: A Way Forward from the Energy Crossroads

Eminent Speakers:

- Dr Ajay Mathur, Director General, TERI
- Dr Rajiv Kumar, Vice Chairman, NITI Aayog
- Dr Anil Kumar Jain, Secretary, Ministry of Coal
- Mr Sanjay Mitra, Distinguished Fellow, TERI (Chair, thematic track)
- Ms Ruchi Gupta, Research Associate, TERI

Panellists:

- Dr Tejaswi S. Naik, Managing Director, Madhya Pradesh Jal Nigam Maryadit (Former District Magistrate, Betul, Madhya Pradesh)
- Mr Amit Kumar, Senior Director, Social Transformation & Knowledge Management, TERI
- Prof Kuntala Lahiri Dutt, The Australian National University
- Mr S.M. Vijayanand, Former Chief Secretary, Government of Kerala
- Mr Jules Kortenhorst, Chief Executive Officer, Rocky Mountain Institute
- Dr Ashok Sreenivas, Senior Research Fellow, Prayas Energy Group
- Dr Anna Sobczak, Policy Coordinator, Coal regions in transition, European Commission
- Ms Moutushi Sengupta, Director, India Office, Mac Arthur Foundation

- Mr Mike Ward, Senior Sustainability Consultant, Climate Investment

To delve into this crucial challenge of enabling a just transition from coal, a thematic session on “Just Transition: A Way Forward from the Energy Crossroads” was organized with a diverse set of experts who deconstructed the imminent transition faced by fossil fuel-based communities. **Dr Anil Kumar Jain, Secretary, Ministry of Coal**, in his address, spoke of the challenges faced by coal mining areas, with loss of jobs and degraded land being the key ones. He also highlighted two positive aspects - firstly, due to high temperature and high rainfall, natural healing of these areas has begun. Secondly, these areas have existing good quality infrastructure.

Dr Tejaswi S. Naik, Managing Director, Madhya Pradesh Jal Nigam Maryadit (Former District Magistrate, Betul, Madhya Pradesh), added, “My observation has been that the winding down of the coal industry leads to a sharp rise in crime in those districts and I believe that the District Mineral Fund can be a useful tool for the development of affected areas.”

Mr Amit Kumar, Senior Director, Social Transformation & Knowledge Management, TERI, highlighted three key challenges facing India's transition process: 1) Lack of a transition strategy; 2) Involving workers and communities in strategic framework; and 3) Huge workforce is in informal sector and is vulnerable to losing their livelihood. He said training and skill development for alternate livelihood options is needed in order to provide these communities with a social security net.

Prof Kuntala Lahiri Dutt from the Australian National University provided a different perspective and said there is no single coal economy in India and any strategy has to take into account the multiplicity of coal economies in the country. She stressed on the need to move away from GDP-based growth and focus on social justice and ecological sustainability. She added, “We need de-growth, as the current growth paradigm leads to environmental injustice.”

Mr S.M. Vijayanand, Former Chief Secretary, Government of Kerala, provided a way forward and cited interventions such as focusing on co-regeneration, ensuring livelihood, skilling farmers and agri labourers, establishing micro-enterprises, focusing on health, education & nutrition, institutionalising transition activities, and enabling cluster facilitation to usher in a seamless transition. **Mr Jules Kortenhorst, Chief Executive Officer, Rocky Mountain Institute**, said due to the falling cost of renewable energy, the speed of transition

is accelerating around the world, as coal and gas struggle to compete. He added that the communities that rely on fossil fuel economy will need our support in making this transition and deep commitment is necessary for a just transition. According to him, there are new employment opportunities in new energy sectors and embracing them can lead to a just energy transition.

The speakers also focused on using the European model for transition as a blueprint, a sentiment echoed by **Dr Anna Sobczak, Policy Coordinator, Coal Regions in Transition, European Commission**, when she said, "The European green deal is the most ambitious climate policy in the world. The EU has put just transition at the heart of building a resilient climate-proof economy. Our motto is to 'leave no one behind'.

Low Carbon Industry Transition

Eminent Speakers:

- Opening Remarks: Mr Girish Sethi, Senior Director-Energy Program, TERI
- Mr Jacob Werksman, Principal Adviser to Directorate General for Climate Action, European Commission
- Professor Måns Nilsson, Executive Director, Stockholm Environment Institute
- Dr Ajay Mathur, Director General, TERI
- Mr Pradip Kumar Tripathi, Secretary, Ministry of Steel, Government of India

Panellists (Discussion 1):

- Moderator: Mr R R Rashmi, Distinguished Fellow, TERI
- Opening Remarks: Ms. Richa Sharma, Joint Secretary, MOEFCC
- Mr Will Hall, Visiting Fellow, TERI
- Mr Kaustubh Phadke, General Manager, Global Cement and Concrete Association, India
- Mr Tobias Winter, Director, Indo-German Energy Forum, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Panellists (Discussion 2):

- Ms Madhulika Sharma, Chief - Corporate Sustainability, Tata Steel Ltd.
- Mr Uday Gupta, Managing Director, Adhunik Metaliks Ltd / Liberty House Group
- Mr Arvind Bodhankar, Joint Executive President & Chief Sustainability Officer, Ultratech Cement

- Dr Gökçe Mete, LeadIT Secretariat, Stockholm Environment Institute
- Ms Dina Lanzi, Head - Technical Business Unit Hydrogen, SNAM

Concluding Remarks: Mr Souvik Bhattacharjya, Associate Director, TERI

The thematic track on Low Carbon Industry Transition set the tone dived into the need for a net-neutral emission industry sector and why it is crucial to meeting the goals of the Paris Agreement. **Mr Jacob Werksman, Principal Adviser to Directorate General for Climate Action, European Commission**, spoke about how EU and India now share the urgent challenges of net-zero emissions with a just transition that leaves no one behind. He also said net-zero means targets can no longer be designed as incremental steps but as milestones on a pathway towards net-zero. He added, "Targets must also be backed by policy and implementation."

Professor Måns Nilsson, Executive Director, Stockholm Environment Institute, said, "It is now fast dawning on industry actors that it has become technically and economically possible to decarbonise harder to abate sectors too such as steel and metals but requires major shifts in product processes ." **Mr Pradip Kumar Tripathi, Secretary, Ministry of Steel, Government of India**, emphasised on the use of hydrogen, saying radical changes are required in steel making technology. He said, "It is vital to discuss pathways to decarbonise to ensure India stays on track to meet its emission targets while ensuring that aspirations of its people are met."

In the second part of the session, **Ms Richa Sharma, Joint Secretary, MOEFCC**, remarked "Affordability and accessibility of key technology is key to make the business case for low-carbon transition. This requires investment and collaborative partnership and scaling up of cutting-edge technology. India continues to push for the role of technology transfer and climate finance. Developed countries are expected to take the lead in low-carbon transition. We are now interested in hearing from partners what challenges they face and to which national policy must respond."

The panel discussion also saw **Madhulika Sharma, Chief - Corporate Sustainability, Tata Steel Ltd; Uday Gupta, Managing Director, Adhunik Metaliks Ltd/Liberty House Group; Arvind Bodhankar, Joint Executive President & Chief Sustainability Officer, Ultratech Cement; Dr Gökçe Mete, LeadIT Secretariat, Stockholm Environment Institute; and Dina Lanzi, Head -Technical Business Unit Hydrogen, SNAM**, deliberate on the various aspects for managing the energy transition for the steel industry.

Water Sustainability

Monitoring of Community Wastewater for early Signaling COVID-19



Eminent Speakers:

- Welcome Address: Dr S K Sarkar, Senior Director & Distinguished Fellow, TERI
- Special Address: Ms Debashree Mukherjee, IAS, Additional Secretary, Ministry of Jalshakti, Govt. of India

Panellists:

- Moderator: Dr Girija Bharat, Director, Mu Gamma Consultants Pvt Ltd
- Dr Paromita Chakraborty, Associate Professor, Dept of Civil Engineering, SRM Institute of Science

and Technology, Chennai

- Dr N. Godhantaraman, Head Centre for Environmental Sciences, University of Madras, Chennai
- Mr Joep Verhagen, Global Lead Water, Global Centre on Adaptation, Rotterdam, The Netherlands
- Dr Magdalena Urbaniak, Associate Professor, Department of Applied Ecology, University of Lodz, Poland
- Keynote Address: Dr Jonathan Demenge, Head of Corporation, Swiss Agency for Development and Cooperation (SDC), India

Closing Remarks: Ms Sakshi Chadda Dasgupta, Sr. Thematic Advisor, SDC

The thematic session began with opening remarks from **Dr Girija K Bharat, Director, Mu Gamma Consultants Pvt Ltd**. Dr Bharat said a thematic study on 'Monitoring of Community Wastewater for Early Signaling the Spread of COVID-19' in Chennai was developed, with support from the Swiss Development and Corporation (SDC) by a consortium of TERI, SRM, and Mu Gamma consultants.

Dr S.K. Sarkar, Senior Director and Distinguished Fellow, TERI, said the major goal of the study is to develop an early signaling system to detect the spread of COVID-19 in communities in Chennai. The findings of the study have the potential to be replicated in other parts of India and could be useful for policymakers and the public for providing real-time assessment of the COVID-19 situation.

Ms Debashree Mukherjee, IAS Additional Secretary, Ministry of Jalshakti, Government of India, said the monitoring sewage water system to detect the spread of COVID-19 has considerable potential. She said a change in science and technology, knowledge, and tools in detecting this disease would be welcome.

Dr Paromita Chakraborty, Associate Professor, Dept of Civil Engineering, SRM Institute of Science and Technology, Chennai, discussed the analysis and results of the study, and suggested new set of outcomes to 'Detecting SARS-COV-2 in Wastewater: An Early Warning System for COVID -19'. She added that around 1500 samples were collected and analysed and the adopted four methods (WHO approved) have worked very well. She further stated that the striking feature of the project is that it is cost-effective.

Dr N Godhantaraman, Head Centre for Environmental Sciences, University of Madras, gave an overview on the ways COVID-19 spreads and highlighted that temperatures in various regions, along with pH, humidity, sun light exposure plays vital roles in the sustainability of the virus.

Mr Joep Verhagen, Global Lead Water, Global Centre on Adaptation, Rotterdam, spoke of his experience in the Netherlands, which is 99.9% open defecation free and has a sewer network covering almost the entire country. Drawing a contrast, he said that almost 4.5 billion people in the rest of the world currently do not have access to safely managed sanitation. He also highlighted that it is the poor, who live in overcrowded and unsanitary conditions, are likelier to be infected by COVID-19 and thus improving existing health, water and sanitation facilities is vital for bolstering the resistance to future climate impacts and pandemics.

Dr Magdalena Urbaniak, Professor, European Regional Centre for Ecohydrology of the Polish Academy of Sciences/UNESCO Chair on Ecohydrology and Applied Ecology, spoke about the Wastewater Based Epidemiology (WBE) technique that determines the consumption of, or exposure to, chemicals or pathogens in a population. She added that WBE gives an opportunity to reliably survey the presence of the virus in the population in a better and more harmonised way without direct testing of individual persons.

Dr Jonathan Demenge, Head of Cooperation at Swiss Agency for Development and Cooperation, in his keynote address, emphasised that, from a practical and policy point of view, the numerous applications that have come out of the research is laudable.

From Coasts to High Seas: Exploring solutions for a cleaner ocean and a sustainable blue economy

Eminent Speakers:

- H.E. Hans Jacob Frydenlund, Ambassador of Norway to India

Panellists (Discussion 1):

- Session Chair: Dr Shailesh Nayak, Director, National Institute of Advanced Studies (NIAS)
- Dr MV Ramana Murthy: Scientist-G & Director, National Center for Coastal Research (NCCR)
- Dr Amardeep Wander, International waste and marine litter consultant, UNEP – Team leader
- Dr Vijay Habbu, Adjunct Professor, ICT
- Closing Remarks: Dr Suneel Pandey, TERI

Panellists:

- Chair: Dr M.A. Atmanand, Visiting Faculty, Indian Institute of Technology, Chennai,
- Prof. V.N Attri, FICCI task force on Blue Economy, Former Chair in Indian Ocean Studies (CIOS), IORA
- Mr C. N. Ravishankar, Central Institute of Fisheries Technology (CIFT)
- Capt Sarabjeet S Parmar, Executive Director, National Maritime Foundation

- Ms Joana Cymbalista, Quality & Sustainability Compliance Manager, IKEA Purchasing

Closing Remarks: Souvik Bhattacharya, TERI

The thematic session on 'From Coasts to High Seas: Exploring solutions for a cleaner ocean and a sustainable blue economy' began with an inaugural address from **H.E. Hans Jacob Frydenlund, Ambassador of Norway to India**, who spoke about the tangible and intangible importance of the ocean to human civilization and its deep connection with all life forms on earth. Blue economy, he asserted, could lead the way in a post-COVID world, through sustainable management and vigilant policymaking. The ambassador also stressed on the Norwegian model of sustainable ocean management and how by partnering with India, the two nations can be the front runners in controlling oceanic pollution across the world.

In the first part of the session, **Dr Shailesh Nayak, Director, National Institute of Advanced Studies (NIAS)**, said plastics are a major source of marine litter as they take several decades to decay and then later become micro-plastics, which pose a more serious threat to the environment. In India, the primary concern is waste management and without a proper waste disposal infrastructure and legislation, tackling plastic pollution is not possible, he explained. In his concluding remarks, he emphasized that research and education are pivotal in curbing marine pollution. **Dr M.V. Ramana Murthy, Scientist-G & Director, National Center for Coastal Research (NCCR); Dr Amardeep Wander: International waste and marine litter consultant, UNEP – Team leader; and Dr Vijay Habbu, Adjunct Professor (ICT)** discussed the different types of plastics found in oceans and foregrounded how micro-plastics and nano-plastics are the most harmful as they infect the food chain.

In the second part of the session, **Dr M.A. Atmanand, Visiting Faculty, Indian Institute of Technology, Chennai**, underpinned the importance of cohesion between science and policymaking and how the two

must be synchronised in order to create a pathway towards positive sustainable oceanic development. Following suit, **Mr C.N. Ravishankar, Central Institute of Fisheries Technology (CIFT)**, pointed out how a decline in fish species can endanger the livelihood and consumption patterns of over 1.3 billion people, globally. Thus, the need of the hour is to focus on deep sea areas to gain access to untapped fish resources.

Mr Ravishankar further discussed the merits of technological innovation that can help build fuel-efficient designs and reduce the impact of bottom trawling, thus bringing a new level of sustainability into the fishing industry. Prof. V.N. Attri steered the conversation to India's ability to achieve its blue economy targets, based on technological innovation and scientific research. Prof. Attri expressed immense confidence that the country is on its way to becoming a \$10 trillion economy by 2030, while **Capt. Sarabjeet S. Parmar, Executive Director, National Maritime Foundation**, focused on the governance aspect and highlighted the importance of strong institutional structures and advantageous multilateral collaborations, and how they can help in developing a sustainable blue economy. He said, as a country, we must set clear and measurable targets and allow for a seamless intra-institutional collaboration to effectively improve the state of our oceans and the various industries that rely on them.

Ms Joanna Cymbalista, Quality & Sustainability Compliance Manager, IKEA South Asia, shed light on the exceptional work IKEA has been doing in the area of recycling fishing nets and it has assumed control over the entire supply chain to make sure that these nets do not end up in the seas, but are reused for the production of other materials. In his concluding remarks, **Mr Souvik Bhattacharya, Fellow and Director, Resource Efficiency and Governance, TERI**, expressed gratitude to all the presenters and acknowledged how the amalgamation of science and technology with policymaking can be instrumental in enhancing the development of a sustainable blue economy.

Urban Planning

Planning Cities for a Sustainable Future



Eminent Speakers:

- Opening Remarks: Mr Sanjay Seth, Senior Director, Sustainable Habitat Program, TERI
- Mr Hitesh Vaidya, Director, National Institute of Urban Affairs (NIUA)
- Mr Michel Mouchiroud, Partner Instrument Coordinator, EU Foreign Policy Instruments, Regional Team Asia & Pacific, Delegation of the European Union to Thailand
- Mr Jostein Nygard, Senior Environmental Specialist, World Bank and Dr.
- Mr Michael Bucki, Head of Section, Counsellor, Delegation of the European Union to India

- Mr Banchhanidhi Pani, IAS, Commissioner, Surat Municipal Corporation, Gujarat
- Mr M Anil Kumar, Mayor of Kochi, Kerala

Panellists:

- Moderator: Ms Kamilla Kristensen Rai, Counsellor, Delegation of the European Union to India
- Ms Sriparna Iyer, Key Expert, EU-India Urban Partnership Support Project IPE Global Limited
- Ms Parul Agarwala, Country Programme Manager, UN-Habitat India
- Ms Vaishali Nandan, Project Director, GIZ India
- Mr Emani Kumar, Executive Director, ICLEI South Asia

- Ms Rupali Deshmukh, Senior Coordinator, Business Development and Marketing, IVL Swedish Environmental Research Institute

The thematic session on 'Planning Cities for a Sustainable Future' was aimed at driving a discourse on the need for sustainable development at a city level. **Mr Sanjay Seth, Senior Director, Sustainable Habitat Programme, TERI**, in his welcome address said while cities are growth drivers for a country, they consume a lot of resources. Hence, the key is to strike a balance between development and environment for planning sustainable, smart, and inclusive cities. **Mr Hitesh Vaidya, Director, National Institute of Urban Affairs (NIUA)**, said the COVID-19 pandemic has shown that our local governments have the capacities to innovatively manage difficult situations and bring about transformative impact by utilising technology and multi-level partnerships. **Mr Michel Mouchiroud, Coordinator, European Union - Service for Foreign Policy Instruments (FPI) for Asia and Pacific**, discussed the second phase of the global corporation programmes on urban action and highlighted EU as a global player in achieving sustainable development.

Ms Sriparna Iyer, Key Expert, EU-India Urban Partnership Support Project IPE Global Limited, spoke about the need to revisit our existing modal building by-laws to make our cities resilient. She highlighted that cities would continue to grow, and physical planning is vital, with a combination of good governance and community mapping. **Ms Parul Agarwala, Country Programme Manager, UN-Habitat India**, shed light on the need to strengthen intra-city partnerships for implementation of planning policies and schemes at grassroots level. She also emphasized that data collection and synthesis are important pillars for sustainable development. **Ms Vaishali Nandan, Project Director, GIZ India**, added that all the sectors in the cities such as water, waste, etc. are inter-connected and the planning initiatives should be integrated accordingly.

Mr. Emani Kumar, Executive Director, ICLEI South Asia, explained how public-private partnership models can become an important instrument in timely implementation of innovative schemes for sustainable development of cities. **Ms Rupali Deshmukh, Senior Coordinator, Business Development and Marketing, IVL Swedish Environmental Research Institute**, concluded the session by outlining three tools – eco-governance, innovations, and community engagement – for creating long-lasting and sustainable solutions.

Urban Resilience: Participative Governance, Design and Development

Eminent Speakers:

- Inaugural Address: Dr. Ajay Mathur, Director General, TERI
- Special Address: Mr Ken O'Flaherty, Regional COP26 Ambassador for Asia-Pacific and South Asia, Government of UK

Panellists:

- Moderator: Mr. Jagan Shah, Senior Infrastructure Advisor, Foreign, Commonwealth and Development
- Office, British High Commission
- Mr Mahesh Rajasekar, Chair, Urban Resilience at National Institute of Urban Affairs
- Dr Surendra Babu, Deputy General Manager, NABARD
- Mr Devendra Dalai, Director Environment, Department of Environment, Chandigarh
- Ms Preeti Bhandari, Director, Climate Change & Disaster Risk Management Division, ADB
- Ms Aditi Garg, CEO, Indore Smart City
- Dr Manish Shrivastava, Assistant Professor, Department of Energy and Environment, TERI School of Advanced Studies

Closing remarks: Ms Swati Pillai, Associate Fellow, TERI

The thematic session on 'Urban Resilience: Participative Governance, Design and Development' again focused on city level sustainability and looked at it through the lens of collaboration. This thematic track discussed the roles that subnational and non-state actors play in building urban resilience to climate change, and explored innovative means for cities to build resilience, including the challenges they have faced and the way forward.

Mr Ken O'Flaherty, Regional COP26 Ambassador for Asia-Pacific and South Asia, Government of UK, highlighted the importance of subnational and non-state actors in fighting climate change on the urban, rural, and coastal fronts. **Mr Mahesh Rajasekar, Chair, Urban Resilience, National Institute of Urban Affairs (NIUA)**, said it is critical to replicate and scale climate action to meet the ambitious national and

global targets, starting from cities with a bottom-up approach, despite the challenges. According to him, initiatives such as 'Climate Smart Cities Assessment Framework' being implemented by the NIUA are helping cities to be more responsive and less vulnerable to climate change. **Dr Surendra Babu, Deputy General Manager, NABARD**, said that NABARD's various initiatives and green growth projects focus on building resilience and low emission development. **Ms Aditi Garg, CEO, Indore**

Smart City, said cities such as Chandigarh and Indore are the success stories from which best practices and advisories can be replicated in other cities.

Ms Preeti Bhandari, Director, Climate Change & Disaster Risk Management Division, Asian Development Bank, said international institutions such as ADB are supporting city-level sustainability initiatives. ADB's 2030 strategy is to focus on helping create livable cities and building climate resilience, she added.

Special Focus

Youth Unite for a Safe and Secure Environment for All



Eminent speakers:

- Mr Darsh Vatsa, Delhi Public School, Sonapat
- Welcome Address: Mr Ajai Malhotra, Dist. Fellow & Sr. Advisor (Climate Change), TERI
- Special Address 1: Mr Christophe Manet, Chargé d'Affaires a.i., Delegation of the European Union to India
- Special Address 2: HE Mr Vincenzo de Luca, Ambassador of Italy to India
- Special Address 3: HE Ms Jan Thompson (Acting High Commissioner, UK)
- Dr Ajay Mathur, Director General- TERI
- Student moderator: Ms Jasmine Kaur Narang, Panjab University, Chandigarh
- Dr Arunabha Ghosh, CEO, Council on Energy, Environment and Water (CEEW)
- Youth Voice Matters
- Ms Indira Basu, Board Member, Indian Youth Climate Network
- Ms Tosca Barucco, Special Envoy for COP 26 of the Italian Ministry of Foreign Affairs
- Special Remarks: Ms Taru Mehta, Area Convenor, EEA, TERI

Women on the Rise: Prioritising Gender Equity as a Business Imperative

- Opening Remarks: Ms Monali Zeya Hazra, Regional Energy Manager and Clean Energy Specialist, Indo Pacific Office, USAID/India

Panellists (Discussion 1):

- Moderator: Ms Gauri Jauhar, Executive Director, IHS Markit
- Ms Katie McGinty, Vice President & Chief Sustainability, Government and Regulatory Affairs Officer, Johnson Controls

- Dr Laurel Harmon, Vice President (Government Affairs), LanzaTech
- Ms Christine Lins, Executive Director, Global Women's Network for the Energy Transition (GWNET)
- Ms Alexandra Palt, Chief Corporate Responsibility Officer, L'Oréal

Panellists (Discussion 2)

- Moderator: Dr Shalini Sarin, Co-Founder & Executive Director Elektromobilität; Co Chair SAWIE
- Ms Rana Ghoneim, Chief, Energy Systems and Infrastructure Division, UNIDO
- Dr Sujatha Narayan, Regional Vice President, Wabtec Corporation India
- Ms Rachel Kyte, Dean, The Fletcher School, Tufts University
- Ms Susan Ferguson, Representative, UN Women India
- Concluding Remarks: Dr G Mini, Fellow, TERI

Two thematic sessions, 'Women on the Rise: Prioritising Gender Equity as a Business Imperative' and 'Youth Unite for a Safe and Secure Environment for All' underscored the spirit of inclusiveness that achieving the Paris Agreement goals demands.

Significant gender biases currently prevalent in the realm of businesses act as roadblocks towards achieving the goals of gender equity and equality. This was highlighted succinctly by **Ms Gauri Jauhar, Executive Director, IHS Markit**, who cited the findings of the 2015 McKinsey report titled, 'The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth' that stated, "In a 'full potential' scenario in which women play an identical role in labour markets to that of men, as much as \$28 trillion, or 26 per cent, could be added to global annual GDP by 2025."

These findings underpin the considerable untapped potential of a large share of the labour force, which has been neglected for long. This presents a compelling case for a larger participation of women in sectors, including climate action. **Ms Christine Lins, Executive Director, GWNET**, echoed this sentiment, stating that empowerment is not just a women's issue but also a men's issue. She added that it's not just women's right to have equal work opportunities but it's also a proven fact that this makes great economic and environmental sense. In the developing world especially, where women are much more marginalised, there is a huge need to develop and promote skill development programmes

along with making education more accessible.

Dr Sujatha Narayan, Regional Vice President, Wabtec Corporation, added that women must proactively market the work they do and have the courage to take risk and venture into new areas.

Equally important was the need to create an enabling environment for women to thrive and prosper.

Ms Rana Ghoneim, Chief, Energy Systems and Infrastructure Division, said women need to reach out and find an ecosystem of support. **Ms Rachel Kyte, Dean, The Fletcher School, Tufts University**, reiterated the fact that sustainable development cannot be divorced from the voices of the women and the marginalised.

The youth also have a key role to play in the ongoing fight against climate change. **Dr Anurabha Ghosh, CEO, Council on Energy, Environment and Water (CEEW)**, speaking at the thematic track, 'Youth Unite for a Safe and Secure Environment for All', called for the youth across national and international boundaries for an immediate and coordinated climate action. There has been a clear surge in youth-led climate movements across the globe. This rise in support for climate action has brought with it something that until a few years back seemed distant and undervalued – the human-nature connect. Their voices have highlighted how the present model of growth has turned the planet into nothing more than a transactional commodity.

Ms Tosca Barucco, Special Envoy for COP 26 of the Italian Ministry of Foreign Affairs, said, "The future of the youth is at stake and we can't delay taking climate actions anymore." She added that we must reach the goal of the Paris Agreement by following the youth's spirit. **HE Mr Vincenzo de Luca, Ambassador of Italy to India**, in his special address, spoke of the importance of looking at our lifestyle and culture to address climate change. He said young people are crucial in this as they are more innovative and aware of sustainable resource use.

TERI's Director General Dr Ajay Mathur spoke of the need to change the way in which investment decisions are made by both governments and corporates. He called for more attention to be paid to green job creation and skill development for a greener future.

The youth of today not only have the will, but also the urgency to push for action. This thought was captured neatly by **Ms Jasmine Kaur Narang, a student at Panjab University**, who said the youth have the ability, agency, and capacity to drive change. Ms Narang also spoke of collaboration for ushering in a better tomorrow.

Valedictory Session



The valedictory session marked the culmination of the 20th annual World Sustainable Development Summit (WSDS) with the promise of a more secure and sustainable future. Mr Nitin Desai expressed hope in the way the climate narrative has taken shape over the years, especially among young activists such as Greta Thunberg and others who have been leading from the front. There is universal agreement by scientists about what needs to be done along with a great deal of support from civil society and corporations to tackle climate change. The challenge, he felt, is before the governance.

Rt Hon Alok Sharma shared his concern over the urgent need to tackle climate change. The climate crisis is accelerating and Mr Sharma reiterated why we must act now and act together. "The Paris Agreement may have established the framework, but we are far away from the target and are on the brink of environmental tragedies of epic proportions," he said. In this regard, COP26 presidency is at the forefront to get the world on track to make the Paris Agreement a reality through investment in green recoveries, adaptation plans, commitment to net-zero emissions, and aligned NDCs.

Mr Frans Timmermans warned the audience about the challenges of climate change and biodiversity loss. Only a couple of years are left to make the necessary changes in the climate policies to avoid reaching the tipping points, which are dangerously near, he asserted. "How we shape the recovery

from the pandemic will determine whether we can succeed in realizing our goals against our fight against climate crisis," Mr Frans Timmermans said. "We are not in an area of traditional diplomacy; we must help each other in creating solutions to the existing challenges,"

Mr Suresh Prabhakar Prabhu congratulated TERI and WSDS in bringing together different opinions on a common platform to achieve a common target. "Collaboration is key. Without common action, we cannot achieve green growth," he said, and highlighted how the nationwide lockdown as a means to curb the spread of the virus turned out to be a blessing in disguise. "Those who doubted whether climate change is human induced or not, got their answers when everything closed down in (early) 2020. There were clearer skies, cleaner air, and a better environment," he pointed out.

In the closing remarks, Dr Ajay Mathur began with a recap of the events held at the first-ever online WSDS and reiterated how everybody must be united to achieve the climate goals. He acknowledged and thanked all the partners for both their financial support and intellectual leadership. The online mode opened up opportunities for more participation and exchange of ideas, which Dr Ajay Mathur noted to be a positive communication trend in a pandemic-stricken world. Thanking his colleagues, management, directors, and the entire TERI fraternity, Dr Ajay Mathur signed off.

Prominent Publications

- Mapping the Impact of Coal Mines and their Closure: A Case of Betul
 - Sustainable Freight Initiatives in India – State of Play
 - Estimation of the current emission and sequestration, as well as future potential of sequestration/ emission reduction to achieve land degradation neutrality in India
 - Baseline and quantification of sequestration of 2.5–3 billion tonne of CO₂e by 2030
 - Designing the methodology to establish minimum support prices of trees grown outside forests
 - Scope and potential of coastal ecosystem towards mitigating climate change
 - Innovative financial mechanisms to achieve additional 2.5–3.0 billion tonne of CO₂e through additional forest and tree cover in India by 2030
 - Will India attain its forestry NDC target of achieving 2.5–3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030?
 - Super-efficient AC deployment: Opportunities through business models in India
 - Detecting SARS-COV-2 in wastewater An Early Warning Signal for Covid-19
-

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Secretary, Ministry of New and Renewable Energy, Government of India



Mr Ravi Shankar Prasad

Additional Secretary, Ministry of Environment, Forest and Climate Change, Government of India



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Mr Suman Bery

Non-Resident Fellow, Bruegel & Former Chief Economist Strategy and Business Environment, Shell International Limited



Ms Preeti M Bhandari

Chief of the Climate Change & Disaster Risk Management Thematic Group; concurrently Director Sustainable Development & Climate Change Department, Asian Development Bank (ADB)



Mr Yvo De Boer

Former Director General, Global Green Growth Institute, Korea & Former Executive Secretary, UNFCCC



Ms Rachel Kyte

Dean, The Fletcher School, Tufts University



Ms Kathleen McGinty

Vice President & Chief Sustainability, Government and Regulatory Affairs Officer, Johnson Controls



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Prof. Kazuhiko Takeuchi

President, Institute for Global Environmental Studies (IGES), Japan



Ms Nicole Thomas

India Programme Manager, International Energy Agency (IEA)



Mr Arne Walther

Former Secretary General of International Energy Forum & former Chairman, International Energy Agency

Summit Pre-Events

The World Sustainable Development Summit, in each of its subsequent editions, has seen its reach and scope widen. Every year, in the run up to WSDS, a series of dialogues and events are held, with the aim to shine a spotlight on geography and sector-specific climate issues. The deliberations held prior to the Summit also contributed and enriched the discussions held during the WSDS. The Summit pre-events that were organized prior to WSDS 2021 included:

Virtual Dialogues

Virtual Sustainable Action Dialogue

The discussions of the 2021 edition of the World Sustainable Development Summit (WSDS) were launched on the eve of the World Environment Day as a virtual dialogue. The Chief Guest of the launch was the Hon'ble Indian Minister for Environment, Forest, and Climate Change, Mr Prakash Javadekar who, in his video message, laid emphasis on India's ethos to be one with nature in order to lead sustainable lives in the midst of nature. The other esteemed speakers of the session included, Prof Nicholas Stern, IG Patel Professor of Economics and Government, Co-Director of the India Observatory & Chair - Grantham Research Institute, LSE, HE Mr Ugo Astuto, Ambassador of the European Union to India, HE Mr Hans Jacob Frydenlund, Ambassador of Norway to India and HE Ms Jan Thompson, Acting British High Commissioner to India. The event also saw the launch of the youth dedicated initiative called, Youth Unite for a Safe and Secure Environment for All'.

Virtual Sustainable Action Dialogue on Energy Transition

A virtual meeting on the theme 'energy transition' with a focus on the Indian power sector, in collaboration with the Energy Transitions Commission (ETC) India was held in the presence of the Hon'ble Minister of Power, Mr R K Singh. During the dialogue, the minister highlighted that India has the highest rate of growth of renewables in the world today and the solar energy capacity has increased sixteen times

since 2014. The occasion also marked the release of reports on 'Renewable Power Pathways: Modelling the Integration of Wind and Solar in India by 2030' & 'Bending the Curve: 2025 Forecasts for Electricity Demand by Sector and State in the Light of the COVID Epidemic'. The event also featured keynote statements from Mr Sanjiv Nandan Sahai, Secretary, Ministry of Power, Government of India and Lord Adair Turner, Chair, Energy Transitions Commission.

Kolkata Virtual Sustainable Action Dialogue

A webinar was organised in partnership with The Bengal Chambers of Commerce & Industry on 'Driving Post COVID Economic Growth through Resource Efficiency'. The webinar focused on the existing challenges associated with material access and distribution and stimulating adoption of resource efficiency and circular economy. The panel also looked at the green shoots of recovery from the lens of sustainability and deliberated on the creation of an enabling framework that is required to ensure growth through resource efficiency.

Women on the Rise: Redefining our Common Future

A virtual dialogue under the theme 'Women on the Rise: Redefining our Common Future' was hosted by TERI, in partnership with USAID, SAWIE and USISPF with the objective of strengthening and promoting dialogue on the role of women in reviving the global economy, while also addressing climate-related priorities for a sustainable future.



Report Launch

The Potential Role of Hydrogen in India – ‘Harnessing the Hype’ TERI Report Launch

TERI launched its report, ‘The Potential Role of Hydrogen in India’ – a first-of-its-kind, cross-sector assessment for how hydrogen technologies can support the transition to a zero-carbon energy system in India. The report was launched in the august presence of Dr. Rajiv Kumar, Vice Chairman, Niti Aayog and Mr. Indu Shekhar Chaturvedi, Secretary, Ministry of New and Renewable Energy, Government of India.

COP26 Webinar Series in partnership with the British High Commission, India

Future of E-Mobility in India: Strategies to Drive Demand

A webinar on the ‘Future of E-Mobility in India: Strategies to Drive Demand’ was held to discuss potential avenues to boost clean and resilient economic recovery through an e-mobility revolution in India. The discussions delved into the ways to generate demand for electric vehicles using innovative awareness campaign strategies, policies, technologies, and financial models and explored interventions to accelerate adoption of electric mobility through partnership models that reflect international best practices.

Green Finance for Enhancing Climate Ambition

A webinar on the theme ‘Green Finance for Enhancing Climate Ambition’ was held to deliberate

on how broader economic and social development concerns can be addressed in green investments, the role of financial mechanisms and instruments in catalysing much needed private capital for green finance and how India can transition to a resilient, ‘greener’ financial system incorporating relevant global standards on disclosures and risk management.

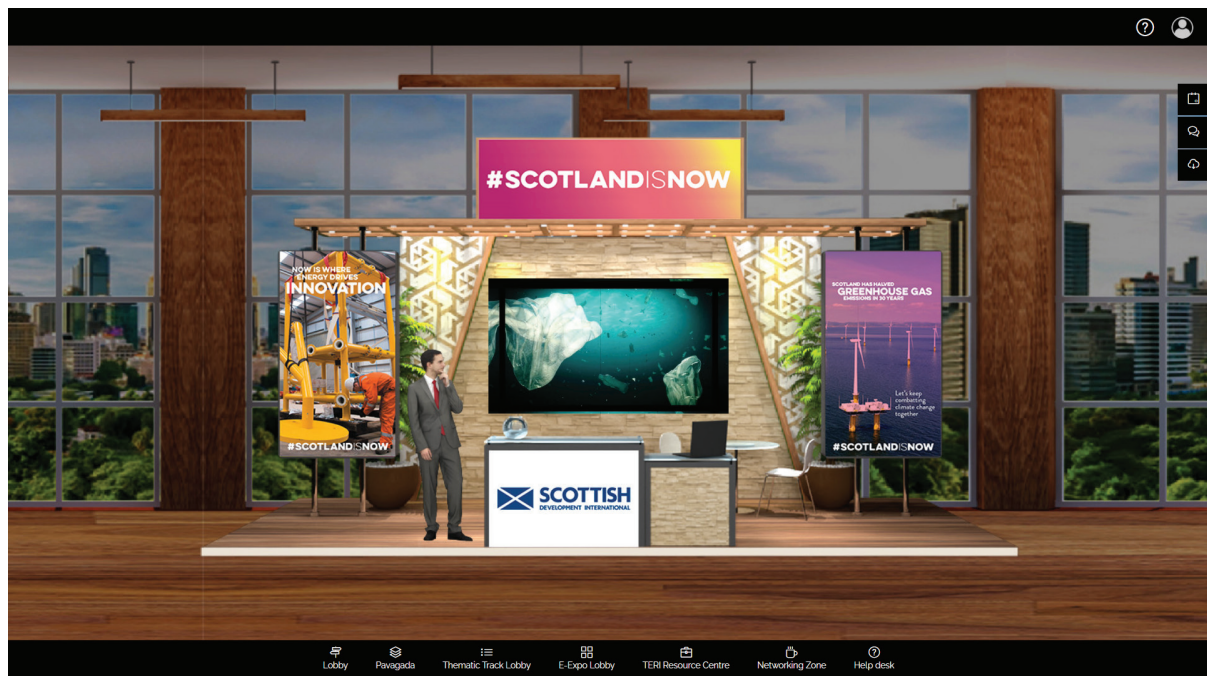
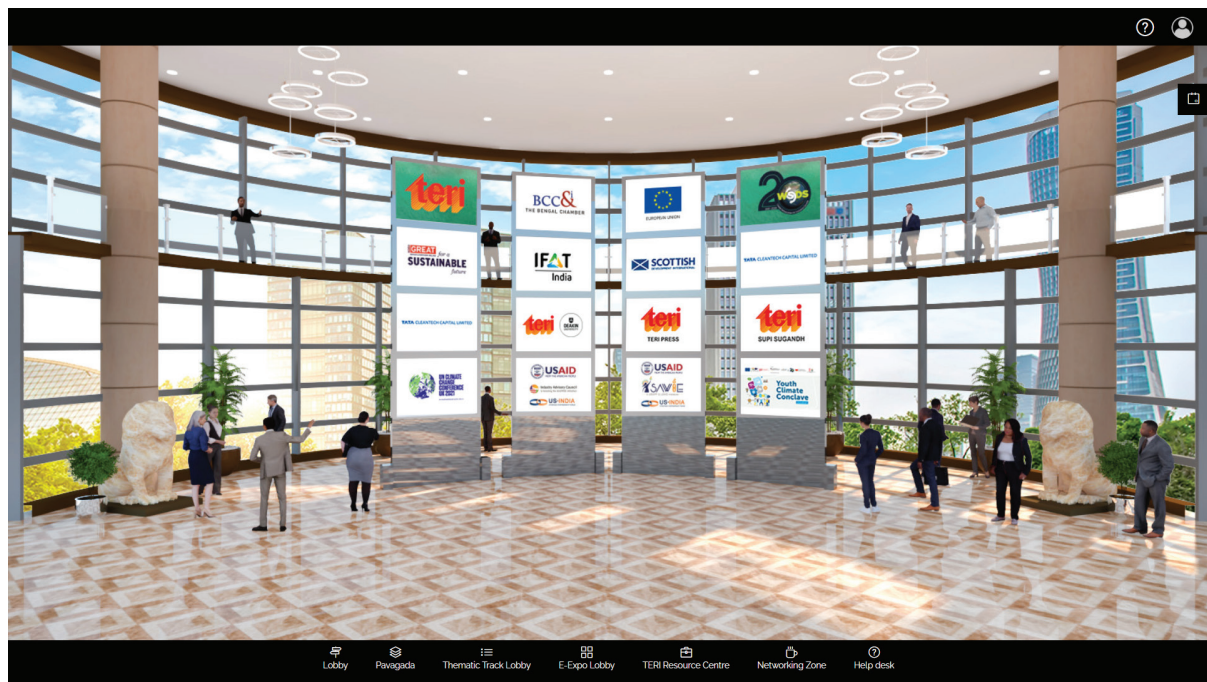
Role of Nature based Solutions (NbS) in Carbon Sequestration: An opportunity to be explored

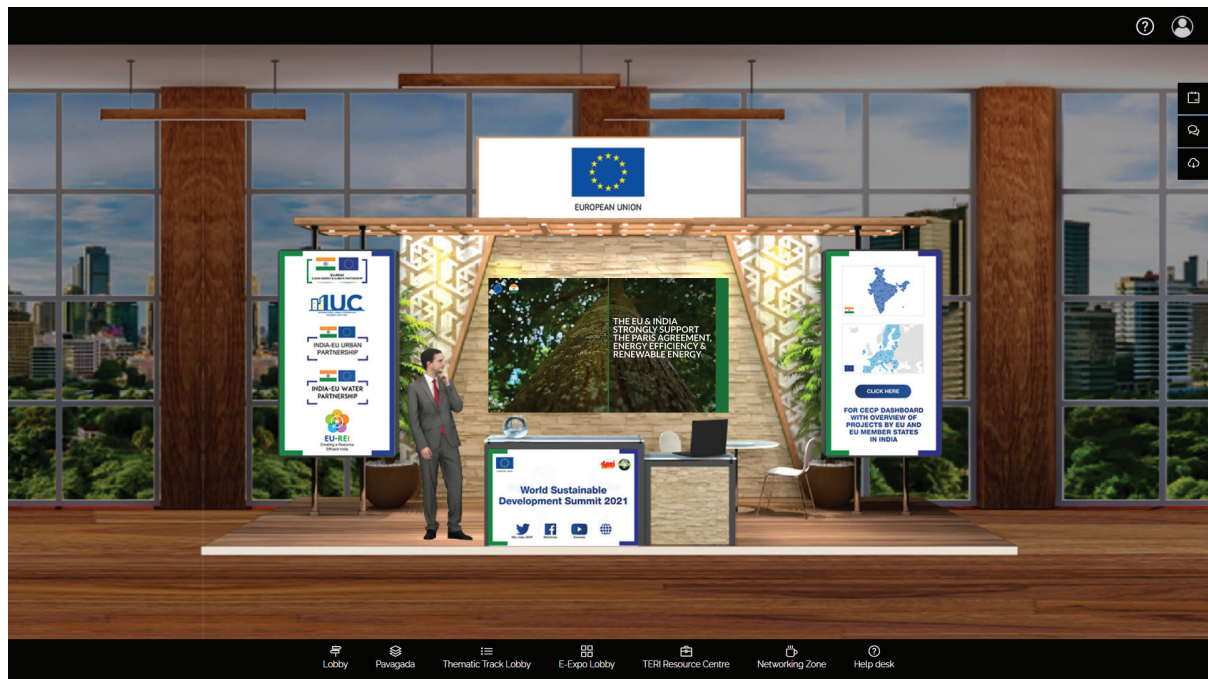
The webinar on ‘Role of Nature based Solutions (NbS) in Carbon Sequestration: An opportunity to be explored’ explored the diverse set of nature-based solutions along with their cost effectiveness, policy implications & overall approach that may be deployed in order to reduce the emissions gap. The key focus areas for the deliberation included improved land use and watershed management, low-emissions agriculture, agro-forestry, and ecosystem conservation and restoration. The speakers strategised on the implementation of NbS to move towards a low carbon path and implementation of a Carbon Neutrality Policy at national and state level.

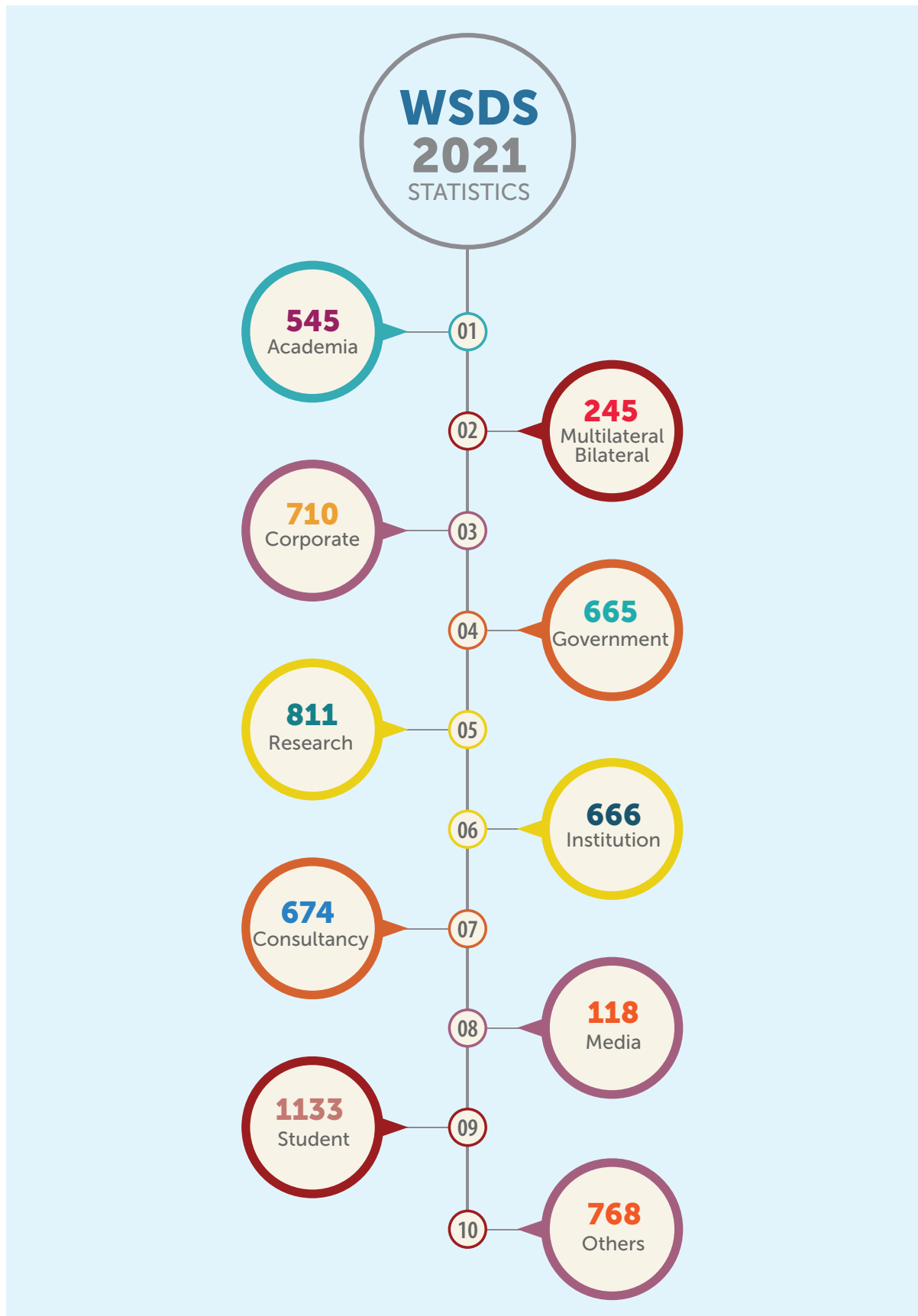
Adaptation and Resilience: Towards Resilient Countries, Communities and Corporates’

The webinar on ‘Adaptation and Resilience: Towards Resilient Countries, Communities and Corporates’ drove a dialogue on accelerating adaptation action. The panel also examined the climate and investment policies, technological innovations, and attitude changes required to ramp up adaptation action.

E-Expo WSDS 2021







Thematic Tracks

The thematic tracks held as part of the Summit are designed as parallel break-away sessions which allow for discussions of considerable depth on niche topics. The tracks are held simultaneously on themes in sync with the overall Summit theme and sub-themes. The thematic tracks serve as a curtain-raiser to the Summit, setting the tone for the succeeding days. These thematic tracks are populated by experts and key practitioners from respective fields.

This year, WSDS hosted 20 distinct thematic tracks, deliberating on an array of sustainable development issues and solutions.

PARTNERS

GROUP-A

Youth Unite for a Safe and Secure Environment for All



Harnessing the Socio-Economic Co-Benefits of Renewable Energy: Making the Paris Agreement a success



From Coasts to High Seas: Exploring solutions for a cleaner ocean and a sustainable blue economy



Electricity Transition in India – National as well as state level Interventions



Accelerating and Institutionalizing Resource Efficiency & Circular Economy in India



GROUP-B

Private Sector's Role in Achieving Climate Resilience: Leading examples from coastal cities

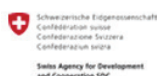


giz Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) GmbH

Are We Really Aware About Air Pollution and its Impacts?



Monitoring of community wastewater for early signalling the spread of COVID-19



Urban Resilience: Participative Governance, Design and Development



IEA's India Energy Outlook: Exploring energy and emission pathways to 2040



GROUP-C

Is a decarbonised transport sector possible in India by 2050?



Women on the Rise: Prioritising gender equity as a business imperative



Cleaning the Air in Indian Cities



Decarbonizing South Asia



Just Transition: A Way Forward from the Energy Crossroads



GROUP-D

Low Carbon Industry Transition



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Planning Cities for a Sustainable Future



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Mainstreaming Climate
Finance Solutions in SMEs
Including Start-ups



Collaborative Platforms
to Fast-track India Inc.'s
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Industry Dialogue: Towards Sustainable
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