

WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2020



TOWARDS 2030 GOALS MAKING THE DECADE COUNT

January 29-31, 2020, India Habitat Centre, Lodhi Road, New Delhi, India

#Act4Earth

SUMMIT BULLETIN | DAY 2

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KEYNOTE ADDRESS

Geo-politics of the SDGs and India's Leadership in the World

Chair: Ambassador Manjeev Puri, Member, Advisory Board, TERI

Speaker: Prof. Jeffrey D Sachs, University Professor and Director, Center for Sustainable Development, Columbia University

He ended with a suggestion that engineers are needed to help give a framework and diplomats to rationalize with the politicians.



PROF. JEFFREY D SACHS

University Professor and Director, Center for Sustainable Development, Columbia University

“The idea of progress is a lie because it is not happening yet”



Within the paradigm of Sustainable Development Goals, Ambassador Manjeev Puri pointed out the importance of sustainability in the United Nations agenda, which brought the idea into 'global minds'. Prof. Jeffrey D Sachs brought the global dynamics of climate change and the role of India into focus. He emphasized that India is one of the most vulnerable countries, with huge stakes in the success of the global venture of sustainability. In the midst of dramatic environmental changes, he mentioned that 2019 was the second warmest year in global temperatures and the year of mega climatic disasters. Prof. Sachs noted that unlike small island nations at the brink of submergence, India's high-population density makes it incredibly prone to disasters.

Addressing the world's political economy, Prof. Sachs pointed out that the most important factor; countries consider is availability and usage of fossil fuels. European Union, according to him, is moving towards decarbonization due to its low availability of fossil fuels. Meanwhile, India's politics is divided on the topic of complete decarbonization despite its comparatively low fossil fuel production. He emphasized on the urgency of Regional Green Deals as renewable energy is geographically concentrated and is intermittent and hence should be shared.



MG Motor's electric SUV, MG ZS EV

ZS EV is India's First Pure Electric, Internet SUV and is part of the carmaker's vision for a clean and green future aligning with the government's recent push to put more electric vehicles on Indian roads.

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KEYNOTE ADDRESS

'Energy Future Map'

Chair: Dr Ajay Mathur, Director General, TERI

Speaker: Mr Dharmendra Pradhan, Hon'ble Minister of Steel, Petroleum and Natural Gas, Government of India

The session began with Dr Ajay Mathur introducing the Hon'ble Minister Mr Dharmendra Pradhan while acknowledging the accomplishments made so far under his leadership in the country's steel, petroleum and natural gas sectors.

Mr Pradhan thanked TERI for inviting him and congratulated the organization for successfully hosting the Summit since 2001.

The Hon'ble Minister talked about the urgent need to understand and act on the issues delaying the realization of, the impacts created and the future path for achieving the 2030 Goals and commitments made at COP. He was happy to note that the Summit focuses on energy and



global attempts in moving towards green and clean energy systems transition. He also believed that the objectives set forth for 2050 have unleashed a new paradigm in the energy sector. "The trajectory to end energy poverty in India in comparison to the rest of the world is based on special national circumstances," he said.

Further, he lauded Prime Minister Mr Narendra Modi, who had set out an energy future map at a climate week meeting in New York in September 2019 with an objective of developing a low-carbon pathway for the Indian industries and economy as a whole. He briefly stated the energy requirements of India in the coming years by highlighting India's third rank in the global energy consumption list with 4.2% per annum increase in consumption of energy by 2035, and doubling global primary energy demand to about 11% by 2045.

Additionally, a report produced by TERI, titled 'Towards a Low Carbon Steel Sector: An Overview of the Changing Market, Technology and Policy Context for Indian Steel' was also launched as part of the session. The report was sponsored by Shakti Sustainable Energy Foundation. The report is authored by Sachin Kumar, Thomas Spencer, and William Patrick Hall from TERI. This report represents a first step in the Indian steel industry towards developing an ambitious road map for a long-term decarbonization pathway.

CORPORATE CONCLAVE I: MOBILITY TALKS

Opening Session

Moderator: Mr Raj Chengappa, Group Editorial Director, India Today Group

Setting the Context: Dr Ajay Mathur, Director General, TERI

Keynote Address: Mr Amitabh Kant, CEO, NITI Aayog

Setting the context for the session, Dr Ajay Mathur threw light on electric mobility as the future of mobility. He further stated that there have been many initiatives taken up by the government, particularly related to bringing up electric mobility in the country and the subsidies that are provided for the same as part of FAME (Faster adoption and manufacturing of (hybrid) electric vehicle) 1 and 2 programmes. He suggested that we need to look into decarbonization in key sectors such as road economy and in the process push a transition to 100% green electricity-based mobility.

Mr Amitabh Kant further emphasized that 70% of the diesel and 99.6% of the petrol in India is consumed by

the transportation sector, which is why the shift to clean fuels is absolutely imperative to our country. He further suggested that in three years' time, the electric vehicles (EVs) will be much cheaper than combustion vehicles and hence the initial cost of buying these vehicles will be much more affordable, which would ultimately mean that we would move from 200 packs in combustion vehicles to 20 packs in EVs. In his opinion, the biggest transformation that will take place in the coming decade is the rapid fall in the cost of battery storage. Once it is achieved, much of the power across the world would not be based on fossil fuels, but rather on renewable energy. This would help us in achieving a decentralized, digitized, and decarbonized world.

Significantly, for boosting the sale of EVs, the Government of India levies a minimal GST of 5% on EVs as opposed to a GST of 28% on combustion vehicles; in addition to this it also provides a subsidy of up to INR1.5 lakh.



MR AMITABH KANT

CEO, NITI Aayog

“In order to move towards a shared, connected, and zero-emission world, it is important that the battery is charged with clean power and not fossil power”

Session 1: Need for Clean Mobility: Exploring the Options Available Towards Cleaner Future

Moderator: Mr Raj Chengappa, Group Editorial Director, India Today Group

Panelists: Mr Chinmaya Acharya, Chief of Programmes, Shakti Sustainable Energy Foundation; Mr Siddharthan Balasubramanian, Senior Advisor, Strategy, Climate Works Foundation; Prof. Kazuhiko Takeuchi, President, IGES

As the transport sector is one of the key emission generating sectors, the discussion steered toward the need for transition towards clean mobility solutions. Mr Raj Chengappa introduced the panelists and welcomed them. The deliberations focused on facilitating the transition in a more holistic manner. The transition to cleaner and sustainable mobility future should encompass multiple objectives of improving liveability, reducing air pollution at the city level; national trade security and energy security should be prioritized. The panelists deliberated on the need to decouple the transition and explosion of mobility services from adverse environmental effects. The panel reiterated that the clean transportation future should be based on the 7Cs, as mentioned by the Hon'ble Prime Minister Mr Narendra

Modi. Electric mobility is one of the transitions that India needs to adopt and manage in order to curtail the fuel consumption, especially in the 4W segment. Additionally, there is also a need to focus on strengthening non-motorized transport (walking and cycling) infrastructure and to promote a shift to public transport to make the transportation system more sustainable.

The transition to e-mobility requires risk-taking innovations and kick-starting of the R&D process. It is important to identify the international best practices and modify them as per the needs of Indian scenario.



PROF. KAZUHIKO TAKEUCHI

President, IGES

“Be a visionary, drive innovation and make India a hub of global sustainable transport”

From the investment and infrastructure perspective, it is important that energy generation through renewables is prioritized and the existing oil stations are redesigned for a renewable future. More efforts should be made to localize the R&D and manufacturing process. As battery costs comprise a significant share of capital costs of the EVs, there is a need to innovate and develop a better understanding of battery chemistry. Support from the private sector is essential in order to drive the market research and innovation. Electrification across segments will require customized solutions.

Overall, there is a need to adopt an integrated approach with multiple objectives as the challenges are intertwined.

Session 2: Inroads into e-Mobility – Enabling Environment to Encourage EV penetration

Moderator: Mr Raj Chengappa, Group Editorial Director, India Today Group

Panelists: Mr Rajeev Chaba, Managing Director, MG; Mr Sohinder Gill, Global CEO, Hero Electric and Official Spokesperson, SMEV; Mr Vikram Gulati, Country Head and Sr Vice President (External Affairs, PR, CSR, and CG), Toyota Kirloskar Motors Pvt. Ltd; Mr Vikash Mishra, Head of External Relations, Lithium Urban Technologies

The session started with a discussion on the key challenges in adoption of e-mobility in India. Mr Rajeev Chabba began by arguing against the critiques of e-mobility. He mentioned that although well-to-wheel analysis of different technologies is necessary, the fact that electric vehicles (EVs) have lower emissions on road along with the sound possibility of a clean grid in the future must also be acknowledged. He said that unlike oil, the import options of batteries could be diversified. He highlighted that supply follows the demand in India unlike China and hence consumers must act now to buy EVs for a sustainable future. Mr Sohinder Gill highlighted the market size of the EV industry in comparison to the overall automobile industry. He mentioned that future adoption of EVs is dependent on the trust consumers place in them. This

trust has to be built by awareness based on experience and exposure to EVs. Mr Vikram Gulati offered a global insight by stating that the cases of EV adoption differed drastically between countries. Therefore, he suggested that we must develop India-specific solutions that rely on 'make in India', 'design in India', and 'develop skills in India'. Further, Mr Vikash Mishra argued for 'electric to be not the future but the present'. He mentioned that his firm operates a large fleet of four-wheeler electric taxis that only faced supply issues with limited choices of EVs, which was being resolved with time. Further, the panelists discussed the challenges in infrastructure for the EVs. Mr Gill highlighted that most two-wheelers in India have batteries and their charging can be managed by individual owners with no need for public charging infrastructure. The government can help the same by easing the installation of charging boards outside



MR SOHINDER GILL

Global CEO, Hero Electric & Official Spokesperson, SMEV

“Consumers will not understand the life-time savings calculation, they will buy the EV through experience and exposure”

shopping centres, malls, etc. However, Mr Gulati differed on this, as he highlighted varied charging requirements of different segments. Mr Chaba emphasised on the need for long-term policies which clearly define the pathways in order to scale up EV production.



CORPORATE CONCLAVE-II

Addressing Climate Change through Waste Management Initiatives

Chair: Mr Sanjay Mitra, Prof. of Practice, IIT Delhi

Panelists: Ms Henriette Faergemann, Environment, Climate and Energy Counsellor, European Union Delegation to India; Dr Sadhan Kumar Ghosh, Professor and Former Head Mechanical Engineering Department, Jadavpur University; Mr Nitesh Mehta, Co-Founder and Director, Green ChemisTree Foundation; Mr Ashwin Shroff, Chairman and Managing Director, Excel Industries Ltd

The chair, Mr Sanjay Mitra stated that waste management is a matter of great concern for India, wherein urbanization has led to excessive generation of municipal waste, which needs to be categorized into solid waste and waste water. He further added that the technology used for waste treatment could create a great impact by solving issues, such as landfills and open burning of waste. Dr S K Ghosh said that climate change and resource consumption are correlated, and can only be dealt with using a multi-pronged approach. He highlighted the fact that in the Indian context, one need not only change consumption pattern but also think about re-circulation of resources.

Mr Shroff explained that the food waste, which is a

part of municipal solid waste, when untreated, becomes a source of carbon dioxide and methane, along with unpleasant smell and pathogens. He also added that if the waste is segregated at the source, separating out organic waste, it would serve a dual purpose of significantly reducing methane and carbon dioxide generation and making compost at the same time. Mr

Mehta began by describing how the chemical industry is making changes in waste management. He talked about treating the waste at the source and the strategy and initiatives taken up by the industry which focus on process optimization to decrease consumption, process efficiency, and finally process recovery.

The session came to an end with some questions put forward by the audience, focusing on the use of technology and waste management solutions in the fields of textile industry, electronic waste, and the challenges India faces in the implementation of its policies. The panelists described that initiatives have been taken up by the industries to decrease the amount of water use in the process of textile production and how changes at grassroots level could prove to be beneficial in the long run.



PLENARY-I

Beyond Connections: Sustaining Universal Energy Access in India

Chair: Mr Ajay Shankar, Distinguished Fellow, TERI

Panelists: Mr Ashvin Dayal, Senior Vice President, Power Initiative, The Rockefeller Foundation; Mr Arunabha Ghosh, CEO, Council on Energy, Environment and Water (CEEW); Mr Gavin McGillivray, Head, DFID India

Unlocking the transformative potential of an electricity connection is a crucial sustainable development goal for India and the international community. In a lively discussion on energy access in India, the panelists illuminated the many successes of

energy provisioning to date as well as the significant challenges that face expansion of this goal. The panelists were in agreement that while the reach of energy connections in India has expanded at an extraordinary level, the reliability of this energy input and the productivity of the outputs are crucial levers for improving development outcomes. In his welcome address, Mr Ajay Shankar highlighted the interrelated opportunities of energy access and clean cooking to meet goals for energy management and public health. Mr Ashvin Dayal clarified that the convergence of energy access, entrepreneurship, livelihood promotion, and social empowerment has yet to be fully realized. The panelists discussed pathways to these goals, including a blend of centralized and decentralized approaches, along with inclusion of last-mile production and distribution



hubs. Mr Gavin McGillivray stressed the inclusion of behavior economics and market mechanisms for shifting consumer behaviour in a more sustainable direction. Mr Arunabha Ghosh initiated a thought line on the interrelated responsibilities of the consumer, government, and power distributors to meet these challenges. All the panelists highlighted promising projects currently being pursued by various agencies and emphasized the need for continued innovations from all stakeholders in pursuit of these objectives.



PLENARY-II

Success at COP 26?

Chair: Ambassador Ajai Malhotra, Distinguished Fellow, TERI

Panelists: Mr Yvo de Boer, Advisor and Consultant on International Environmental Policy and former Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC); Ms Brigitte Collet, French Ambassador for Climate; Mr Vincenzo de Luca, Ambassador of Italy to India, Embassy of Italy; Prof. Nicholas Stern, Member – COP26 Advisory Board

In his opening remarks, Ambassador Ajai Malhotra said that the developing world should look towards securing sustainable development and tackling climate change. Opening with his views on the success of COP25, Mr Yvo de Boer expressed hope that all countries would reach an agreement on an increased ambition at COP26 as he pointed out that the urgency of the climate change challenge has reached a level of massive global action. In her address, Ms Brigitte Collet mentioned that to reach success at COP26, we need to consolidate the four pillars of the Paris Agreement architecture and to integrate the youth into the process. She suggested that the Paris Agreement should be implemented in its full letter and spirit and how 2020 must be a year of ambitions which

are nearing fulfillment. She talks about how the \$100 billion GCF fund will be a reality by 2025 seeing the past trends. The role of businesses and private sector in general was emphasized by her to make COP26 a success. Mr Vincenzo de Luca mentioned that the UK and Italy are doing their best for the COP26 and acknowledged that inclusion of every stakeholder to tackle the challenges of climate change being extremely crucial. He talked about how social acceptance is social awareness and how social impact on the people can decide the actual success or failure of any policy. He majorly focused on inclusivity and how every sector, whether it is private or government, needs to come together to make COP26 a success by putting their best foot forward. In his address, Prof. Nicholas Stern mentioned five strands that feed into



MR YVO DE BOER

Advisor and Consultant on International Environmental Policy and former Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC)

“COP 26 needs to ensure that the private sector comes alive and fight climate change with partner countries”

the NDCs and the long-term strategy that fundamentally underlines the narrative of drive to zero carbon economy through a sustainable and inclusive growth story of the 21st century.



PLENARY-III

Strengthening National Clean Air Programme (NCAP) for Breathable Air

Chair: Mr Suman Bery, Global Fellow, Woodrow Wilson International Center for Scholars

Keynote Address: Mr C K Mishra, Secretary, Ministry of Environment, Forest and Climate Change, Government of India

Panelists: Mr Gaurav Gogoi, Hon'ble Member of Parliament, India; Dr Ajay Mathur, Director General, TERI; Mr Jake Schmidt, Managing Director, International Program, NRDC; Ms Priya Shankar, Director - India Environment Program, Bloomberg Philanthropies

In his appreciation of the Ministry of Environment, Forest and Climate Change's initiative of launching NCAP, Mr C K Mishra hoped that it would provide a platform to formulate air pollution abatement strategies in a more integrated and holistic manner. He advocated dealing with air pollution at source as the most cost-effective way compared to the efforts that we need to put once the pollutants have already been emitted into the environment. He suggested there is a need of a dedicated group of CEOs under the Indian CEO Forum

on air pollution for accelerating clean air actions in the country.

Mr Gaurav Gogoi addressed the audience on NCAP instilling hope that the programme would be extremely actionable. He suggested that the need of the hour is a collaborative effort between central and state governments along with the involvement of the local agencies for tackling this regional issue.

Mr Jake Schmidt set up the air pollution context of American Air Quality scenario. Investments in air

pollution control works on the fact that for every \$1 invested in air pollution, mitigation has benefits of over \$30. He also stated that nearly 5 million people die from air pollution as reported by the Global Burden of Diseases.

Ms Priya Shankar set the context by mentioning that Bloomberg Philanthropies has been working in partnership with TERI and Shakti Sustainable Energy Development on technical assistance on National Clean Air Programme as a part of which, work is being carried out in Surat, Patna, and Bengaluru. She agreed to the fact that currently, India is facing a huge problem of air pollution with an enormous impact on public health due to industrial emissions, transport emission and biomass burning.

Dr Ajay Mathur explained the current air pollution scenario in the Indo-Gangetic Plains and how metrology plays a major role in deciding the air pollution scenario. He cited various examples from national and international studies, which have demonstrated the devastating impact of both outdoor and indoor air pollution.



MR C K MISHRA

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

“There is a need of integrated action plans in selected cities bringing various actors together such as governments, industry, and civil society”



SUMMIT GLIMPSES



THEMATIC TRACKS: GROUP B



RUCHI VERMA

Founder & CEO, HumanQind,
Dalai Lama Fellow

“Efforts to bring down air pollution shall be viewed through health conditions”

Mobility options are currently evolving at a rapid pace. There is a need to assess how new mobility options can be integrated into the existing transport ecosystem and their environmental and social effects. The panel discussion threw up some interesting and thought-provoking insights in this regard. Mr Lagu Parashar expressed his concern that the shift towards e-mobility options could encroach into the usage of public transport. Ms Ruchi Verma highlighted the need to look at streets and transport from the perspective of children. Ms Manju Menon stressed on the need to promote the use of autorickshaws for providing first and last mile connectivity. Mr Subhash Chandra Vashishth mentioned that the needs of the disabled have largely been ignored while framing transport policies. Thus,



Inclusive and Integrated Mobility Systems for Cities

Welcome Address: Mr I V Rao, Visiting Senior Fellow, TERI

Setting the Context: Ms Palak Thakur, Research Associate, TERI

Moderator: Dr Geetam Tiwari, IIT Delhi

Panelists: Ms Ruchi Verma, Founder & CEO, HumanQind; Dalai Lama Fellow; Ms Manju Menon, Project Manager, Namma Auto; Mr Subhash Chandra Vashishth, Director, Svayam – Global Centre for Inclusive Environments (an initiative of Sminu Jindal Charitable Trust); Ms Kalpana Viswanath, Co-Founder & CEO, Safetipin; Mr Rajiv Agarwal, Head of Policy for Uber India and South Asia; Mr Vikas Singh, Chief Technical Officer, Hero Youon Private Ltd (Hexi); Mr Laghu Parashar, Senior Technical Advisor, GIZ



changes at a regulatory level are required to ensure that the right to mobility is not hindered for disabled people. Speaking about gender equality in the transport sector, Ms Kalpana Viswanath pointed that there is a need for more diversity at the planning level and we need to relook at the way cities are planned so that both genders could access mobility options equally.

Mr Rajiv Agarwal spoke about the need for upcoming mobility options to complement existing public transport infrastructure. Shared mobility, including bike taxis, could become the predominant mode of travel in the near future. Mr Vikas Singh spoke about the challenges associated with public bicycle sharing system and highlighted the role of vandalism and lack of infrastructure in the slow uptake of bicycle sharing.

Alternativism: Give Paris a Chance

Chair: Mr Sanjay Mitra, Distinguished Fellow, TERI

Panelists: Mr Roger Darashah, COO, Adfactors PR; Mr Anirban Ghosh, CSO, Mahindra; Mr Shankar Venkateswaran, Chief, Tata Sustainability Group, Tata Sons Limited; Mr Jarnail Singh, India-Head, The Climate Group; Mr Vineet Mittal, Chairman, Avaada Group

The session began with Mr Sanjay Mitra introducing the briefing paper by Mahindra talking about carbon footprints and waste management procedures. He discussed how our behavioural changes do not match the rising awareness on climate change. This was followed by Mr Roger Darashah giving a brief presentation on a survey conducted with 2000 people from five cities. Mr Darashah referred to the consumer as the 'convenient culprit', but held the stand that the



responsibility largely laid with big corporate houses and the people in power.

The panel discussed the climatic solutions needed for individuals to be able to lead a responsible low carbon life. Mr Jarnail Singh emphasized the use of low energy from scratch. He addressed the conflict between businesses and consumer responsibility.

Mr Sanjay Mitra talked about the urgent need for renewable energy sources as opposed to coal. Mr Shankar Venkateswaran raised the topic of the push that will cause the youth to practice judicious use of resources.

Mr Vineet Mittal discussed adopting traditional practices and learning their importance for reduced carbon footprint. Lack of knowledge among people was identified as one of the causes holding people back. Further, Mr Venkateswaran insisted that companies that sell alternatives should explain their lifetime cost versus initial cost to actually convince consumers into adopting them into daily lives. Later, Mr Singh explained how humans are inclined to think in the binary sense of the term and how one needs to look at multidimensional aspect of our problems.

The session focused on ways to reduce the pollution by 20–30% in 4 of the 122 non-attainment cities which come under the National Clean Air Programme (NCAP) for achieving the National Ambient Air Quality Standards (NAAQS). The objective under the Clean Air Programme (CAP) India is betterment of air quality through research and implementation. Under the research study, the sources will be identified through air quality monitoring and source apportionment studies. CAP India aims at achieving the city-specific

MARYLAURE CRETTAZ

Head, SDC

“Efforts to bring down air pollution shall be viewed through health conditions”

Clean Air Project: a SDC Initiative

Welcome Address: Dr Ajay Mathur, Director General, TERI

Moderator: Dr Anand Shukla, Senior Thematic Advisor Energy, SDC

Panelists: Mr A K Nautiyal, Joint Secretary, MoEF&CC, Government of India; Ms Marylaure Crettaz, Head, SDC; Mr Anil Diggikar, Principal Secretary, Environment Department, Maharashtra; Mr Stefano Pelle, Managing Director, Ferrero India; Mr Sudhir Garg, Principal Secretary, Department of Environment, Forest and Climate Change, Uttar Pradesh; Dr Sumit Sharma, Director, TERI; Prof. S N Tripathi, IIT Kanpur; Dr Satoshi Takahama, EPFL, Lausanne



air shed management in consultation with multi-stakeholder consortium. The programme will emphasize on source apportionment studies of all the cities concerned, implement the pilot-scale project, raise public awareness through educational drives and develop sector-specific mitigation action plan. Under the implementation of CAP India objective, TERI in collaboration with other partner agencies will come up with the city-wise sector-specific pollution control

strategies by promoting cleaner mode of transportation, cleaner use of cooking fuels, and proper waste and in-situ crop residue management for controlling stubble burning problems. In addition, a pilot scale study will be demonstrated to control the industrial and genset PM emissions. Further, the goal of the project is to improve health conditions through air quality management and make air a solvable issue.



from both EU and India to sign a commitment to portray and infuse EU Excellence in India. The signing ceremony was hosted by EU embassy and chambers head and included companies, such as IKEA, Ferrero, Tata Steel, Enercon, Regnant Energy Solutions, Umicore, and few state business chambers of India. The companies shared their plans on sustainability in India and announced to share their EU-based technologies with Indian counterparts. According to them, Indian businesses have a huge opportunity to become sustainability hubs and set examples for other aspiring countries. The EU companies showed prospects to collaborate and assist the Government of India and their Indian counterparts for policy formulation and technology transfer in the future. This was followed by a session on perspectives on EU Excellence in India by Indian stakeholders. The speakers of the session advocated reduction in cost by development of information sharing platforms through



The Green Business Opportunity – EU Excellence in India

Welcome Address: H E Mr Ugo Astuto, Ambassador of the European Union to India

Panelists: Mr Poul V Jensen, MD EBTC; Ms Henriette Faergemann, Head of Section Environment, European Union Delegation; Dr P K C Bose, Vice Chairman, MD, ENERCON Wind Energy; Mr Stefano Pelle, MD Ferrero India; Mr Souvik Bhattacharjya, Associate Director, TERI; Mr Deb Mukherjee, President Designate, Bengal Chamber of Commerce & Industry; Mr Amrendra Kumar, Head of Business Management, TATA Steel

The thematic track was based on bringing EU business champions in India that foster climate action and sustainability goals. The session served as a platform to bring together EU and Indian corporates to develop green business opportunities towards creation of jobs, innovation, and sustainable operations and ecosystems. It brought together group of corporates

EU in India. The session concluded with remarks on bringing together local communities, civil society, government and businesses for achieving sustainable and economic prosperity in both EU and India.

Transparency and Accountability in Global Climate Governance: Needs, Challenges and Opportunities for India

Chair: Mr R R Rashmi, Distinguished Fellow, TERI

Setting the Context: Ms Vani Rijhwani, Research Associate, TERI and Mr Thomas Spencer, Fellow, TERI

Panelists: Dr Henning Wuester, Director, ICAT; Ms Rajasree Ray, Economic Advisor, Ministry of Finance, Government of India; Mr Ajay Raghava, Deputy Director (CC), MoEF&CC, Government of India; Mr Pankaj Bhatia, Deputy Director, World Resources Institute; Dr Vijeta Rattani, Technical Expert, GIZ India

The main challenges in India for preparing the Biennial Transparency Report (BTR) along with its progression from the Biennial Update Reports (BUR) were discussed in the session titled, Transparency and Accountability in Global Climate Governance: Needs, Challenges and Opportunities for India. Following the Paris Agreement, there has been a shift in reporting from BURs to BTRs, where the key differentiating points include reporting of NDCs, reporting of actions, targets, and financial support. The discussion followed a comprehensive breakdown of what the difference between the reporting systems now is, and tracked India's planning so far. It aimed to pave the way for improved Monitoring, Reporting and Verification (MRV) in India.



The session iterated that the BTR acts as a reporting vehicle to provide information on the status, action and support within which parties would also be required to submit GHG inventories. This data would come through



RAJASREE RAY

Economic Advisor,
Department of Economic Affairs,
Ministry of Finance, Government of India

“Reporting obligations of developing countries have increased, but they have not been matched in action and support received by governments. As a result, there has not been much demonstrable progress”

verification systems and go through a technical expert review process along with the multilateral consideration of the progress. Panelists also highlighted international initiatives' support in capacity building and leveraging enhanced transparency and accountability for greater climate actions and reporting.

SMART Policy Levers for Achieving Sustainable Cooling

Welcome Address: Mr Girish Sethi, Senior Director, TERI

Setting the Context: Mr Vasudevan Rangarajan, Vice President and Corporate Lead, Edelman India

Inaugural Address: Mr Arijit Sengupta, Director, Bureau of Energy Efficiency

Keynote Address: Ms Geeta Menon, Joint Secretary, MoEF&CC, Government of India

Special Address: Ms Dana Purcarescu, Chargée d'affaires, Embassy of France

Chair: Dr Amit Love, Joint Director, Ozone Cell, MoEF&CC

Vote of Thanks: Mr Karan Mangotra, Associate Director, Delhi

The welcome address was delivered by Mr Girish Sethi, Senior Director, TERI. He mentioned that the Ozone cell was initially established and housed in TERI in the early 1990s. The initiative taken by MoEF&CC to bring out ICAP is first of its kind and India is the first country that is talking about cooling as a comprehensive subject.

Mr Vasudevan Rangarajan, Edelman India, set the theme for the event by delivering a presentation on the initial findings of the stakeholder perception study. Some of the findings that were highlighted included the importance of energy efficiency as a parameter for purchasing decision for the consumers. This is seen as the biggest innovation in the sector.

Two publications 'NewsTRAC' and a policy brief 'Accelerating the Uptake of Energy-Efficient Air Conditioners in India' were launched at the event.



GEETA MENON

Joint Secretary,
MoEF&CC, Government
of India

“Perception and behaviour are innovative and welcoming in the realm of policymaking”

Mr Arijit Sengupta discussed the current status of Standards & Labelling programme and mentioned that 100 GW capacity has already been saved with improvements in the energy efficiency sector.

Ms Geeta Menon highlighted the synergistic actions taken in bringing out the ICAP and congratulated TERI for its perception study initiative.

In her special address, Ms Dana Purcarescu mentioned the need of ratification of Kigali amendment of the Montreal Protocol and the Biarritz Pledge. Dr Amit Love raised the issue of the barriers to communication and said, "Perception is based out of information, awareness, context, and messaging."



Pilot Implementation of India's Forestry NAMA in Assam

Chair: Ms B V Umadevi, IFS, Additional Principal Chief Conservator of Forests, Chhattisgarh Forest Department

Co-Chair: Mr R K Das, Chief Conservator of Forests (SFM), Assam Forest Department

Setting the Context: Mr Kundan Burnwal, Technical Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Panelists: Dr Ashish Chaturvedi, Director, Climate Change, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH; Dr J V Sharma, Director, TERI

This session aimed to address the foremost unplanned drivers of forest degradation in Assam. The session began with a presentation by Mr Kundan Burnwal, where he briefly explained the pilot implementation of Forestry NAMA in Assam, emphasizing on its importance in reducing the degradation of forests and thereby mitigating climate change. Further, Mr R K Das elaborated on the current situation of carbon stock, biodiversity, and forest cover in various districts of Assam and how the forestry NAMA project shall influence these attributes in a positive way. Dr Ashish Chaturvedi highlighted the importance of bringing actors that are not associated with the forestry



sector can play a significant role in forest conservation sector. Dr J V Sharma detailed the progress being done and the experiences of working with various stakeholders in Assam. The 'Training Manual for Capacity Building of Assam Forest Department on Carbon Stock Assessment of Forests' was also released. The panel discussion focused on the ideas to enhance forest carbon stock through conservation and plantation and also reducing fuelwood

demand by promoting fuelwood saving technologies. Ms BV Umadevi concluded the session by emphasizing on the importance of convergence of institutions, capacity building, and consistency in efforts to address drivers of forest degradation. The session was attended by senior forest officers, representatives of donors, community-based organizations, international organizations, and other stakeholders.

During the discussion, Lord Adair Turner talked about the decreasing cost of electricity from solar or wind, which is cheaper than the coal-based electricity. But the challenges with the solar and wind is intermittency. He also mentioned the decreasing battery prices. Ms Mani Khurana discussed the role BESS can play with increasing penetration of distributed RS. Since BESS is a new technology and yet to find its niche in power distribution system, appropriate regulatory interventions and funding is required to make the battery technology economically viable.

Mr Shuvendu Kumar Bose talked about the increasing EV penetration and the need to allow open access for charging/swapping stations. Dr Anindya Narayan Biswas discussed the need of BESS for different applications and also described about existing pumped storage in West Bengal and utilization of RE power in pumping the water. Mr Abhishek Ranjan discussed about the various applications of BESS for DISCOMs such as stationary and mobile applications. Mr Manoj Kohli talked about decreasing price of RE, which was the first barrier in affordability of RE. He discussed the requirement of BESS to absorb intermittent behaviour of RE such as solar and wind. Dr Y B Reddy briefed about the ongoing pilots of BESS along with solar PV and plausible revenue streams. He highlighted that BESS can help in absorbing more solar PV at distribution level. Dr Ajay Mathur concluded the discussion by mentioning about falling RE and battery prices which offer ample investment opportunities in BESS segment.

During Panel Discussion 2, Mr Rajib Kumar Das highlighted the important issues relating to distribution equipment overloading and the anticipated intermittency due to EVs that would require solutions like battery storage at the distribution level. Mr Amitava Sen highlighted the initiatives being taken by WBSEEDCL along with TERI for pilot implementation of battery storage in their license area. Mr Abhishek Ranjan highlighted the importance of encouraging behind-the-meter energy storage applications. This would enable prosumers to obtain the true value of

Battery Energy Storage at Distribution Downstream-Investment Opportunities and Way Forward

Panel Discussion 1: Investment Opportunities and Business Models of BESS at Distribution Downstream

Moderator: Lord Adair Turner, Chair, Energy Transitions Commission

Panelists: Ms Mani Khurana, Senior Energy Specialist, World Bank Group; Mr Shuvendu Kumar Bose, Senior Energy Specialist, International Finance Corporation; Dr Anindya Narayan Biswas (IAS), Commissioner, Department of Power, Government of West Bengal; Mr Abhishek Ranjan, Additional Vice President, BSES Rajdhani Power Limited; Mr Manoj Kohli, Executive Chairman, Softbank India; Dr Y B Reddy, Addl. General Manager (PV), Solar Energy Corporation of India Limited

Concluding Remarks: Dr Ajay Mathur, Director General, TERI

Panel Discussion 2: Use Cases of BESS at the Distribution-level

Chair: Mr A K Saxena, Senior Director, TERI

Panelists: Mr Rajib Kumar Das, Deputy General Manager (Planning), CESC Limited; Mr Amitava Sen, Chief Engineer, West Bengal State Electricity Distribution Company Limited; Dr Ganesh Das, Chief Operating Officer (Clean Energy International Incubation Centre) and Head (Collaborations & Smart Grid Lab), Tata Power Delhi Distribution Limited; Mr Abhishek Ranjan, Additional Vice President and Head of Renewables, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited; Mr Mukesh Dadhich, Assistant Vice President (Sustainability & Clean Technology), BSES Yamuna Power Limited; Mr Aditya Trivedi, Director, Business Development, AES Corporation; Mr Atul Arya, Head, Energy Systems Division, Panasonic India Private Limited



their power by helping them sell the energy to the grid and gain credits. Mr Mukesh Dadhich segmented the key drivers for deploying battery energy storage systems into those influenced by the geographical location, market prices and commercial implications relating to deviation settlement and also peak shaving. Mr Atul Arya spoke about the affordability of battery energy storage for distribution level applications and highlighted a few technical aspects of system operation. He underlined the importance of having a flexible policy regime to encourage such technologies.

The welcome address by Mr Dipak Dasgupta was followed by the launch of the second handbook on carbon pricing and briefs developed by CDP in partnership with TERI.

In Track 1, it was discussed that carbon pricing is an effective and critical tool for setting a social cost of carbon to correct externalities and efficiently reduce emissions from the corporate sector. The panelists were unanimously of the view that carbon pricing will become more mainstream in coming years despite Article 6 of Paris Agreement being unresolved at COP25. The common barriers the corporates face in transitioning towards decarbonization pathways are lack of both an



Finance Mechanisms for Accelerating Industry Decarbonisation

Welcome Remarks: Mr Dipak Dasgupta, Distinguished Fellow, TERI

Track 1: Accelerating Carbon Pricing for Low Carbon Finance in the Corporate Sector

Panelists : Mr Damandeep Singh, Director, CDP India; Dr Venkata Ramana Putti, Program Manager, World Bank; Ms Tamiksha Singh, Associate Fellow, TERI; Mr K N Rao, Director, Energy, Environment & Sustainability, ACC Limited; Ms Mathsy Kutty, Regional Manager, Infosys Limited

Track 2: Mainstreaming Green Finance for Decarbonising Industries

Panelists : Mr Will Hall, Associate Fellow, TERI; Dr Ashwani Pahuja, Chief Sustainability Officer, Dalmia Cement; Dr Nils May, Senior Research Associate, DIW Berlin; Mr Devesh Singh, Chief Risk Officer, PTC India Financial Services

enabling policy framework and clear external carbon pricing signals. An enabling policy framework can facilitate its implementation and adoption by corporates.

In Track 2, Dr Ashwani Pahuja stressed that financing gap does not exist in terms of businesses transition as technology is already available. He underlined the need

DR NILS MAY
Senior Research Associate, DIW Berlin

“We also need to create new markets for low carbon products and reduce regulatory risks and create lead markets for low carbon alternatives”

of scaling up already existing technology. Mr Will Hall spoke about how studies indicate that India will not be able to decarbonize hard-to-abate industries without access to much larger scale of financing. Finance is just one part of the story and it relies on people having security to invest, which is dependent on policy framework that needs to be specific to country and region. Dr Nils May highlighted the need to work on the financing and regulatory challenges. It is important to link policy and regulatory schemes to financial schemes to act as incentives to investment.

Achieving SDG 6 Goals: The Need for Circular Economy Approaches

Inaugural Address: Dr Sudhir Narasimha Murthy, Vice President, IWA

Opening Remarks: Dr Nupur Bahadur, Fellow, TERI & Vice Chairman, IWA India

Keynote Address: Dr T Prabhushankar, IAS, Executive Director, Chennai, Metropolitan Water Supply and Sewerage Board

Panelists: Prof. M S Mohan Kumar, IISc Bengaluru; Mr Shubhagato Dasgupta, Senior Fellow and Director, Centre for Policy Research; Mr Ajith Radhakrishnan, WRG 2030, World Bank; Dr S K Sarkar, Senior Director, TERI; Mr Rajneesh Chopra, Global Head- Business Development, VA Tech Wabag Limited; Mr Sanjay Seth, Senior Director, TERI



During the discussions, Dr Sudhir Narasimha Murthy talked about Indirect Potable Reuse (IPR). There are two forms of IPR, that is, Surface Water IPR and Ground Water Direct Recharge. He mentioned that ozone-biofiltration is one of the most effective and cheap IPR and it is energetically viable. Dr Nupur Bahadur emphasized that the concept of 'circular economy' has emerged in response to drawbacks of the conventional linear economy model of growth of 'take-make-consume and dispose'. She emphasized on an impending

regulatory environment and opaque market conditions as significant drawbacks in achieving circular economy. Dr T Prabhushankar mentioned the case study of earlier water stressed city of Chennai and talked about new projects and technology development in Chennai with respect to IPR and also mentioned the use of desalination in Chennai and other areas having similar issues. Prof. M S Mohan, emphasized that the policy of reuse of treated water, which came out in 2017, has changed the scenario of wastewater treatment in India, now, treated water is a



commodity, and improves the feasibility of wastewater treatment. Mr Ajith Radhakrishnan discussed multi stakeholder platforms which involved financial innovation and service delivery model. Dr S K Sarkar informed that treated water is a resource for the local bodies and they can create economically viable models to use this water for various purposes. He iterated that the cost of treated water should be less than the cost of available freshwater and shall consider the cost of treatment (CAPEX recovery and O&M) and cost of conveyance of untreated and treated water.

Mr Sanjay Seth lastly emphasized on the need of learning from best practices and working towards strict implementation of policies made.



Implementation of NAMA: Improving Waste Management in India

Chair: Ms Karin Deckenbech, Programme Advisor – Climate Change & Environment Programme, GIZ, India

Setting the Context: Mr Vaibhav Rathi, Technical Advisor, GIZ, India; Mr Sourabh Manuja, Fellow, TERI

Panelists: Mr Ajay Kumar Singh, Additional Municipal Commissioner, Varanasi Municipal Corporation (VMC), UP; Mr Sanjit Rodrigues, Municipal Commissioner, Corporation of the City of Panaji (CCP), Goa; Dr Suneel Pandey, Director, TERI; Mr V K Chaurasia, Joint Advisor, PHEE, Ministry of Housing and Urban Affairs, Government of India



SANJIT RODRIGUES

Municipal Commissioner, Corporation of the City of Panaji (CCP), Goa

“Goa has the highest number of plastic in its sea, which is not a good statistic. Every hour’s delay adds more plastic to my sea”



The session began with Mr Vaibhav Rathi, who introduced the theme and talked about the ongoing activities in Panjim and Varanasi under the NAMA project. In India, Varanasi and Panjim are the two pilot cities. He spoke about the activities that are undertaken by TERI and GIZ in Panjim under the NAMA project. Next, TERI’s Mr Sourabh Manuja highlighted the activities of NAMA in Varanasi. He started by mentioning the

Information, Education and Capacity building (IEC) being conducted in different wards of Varanasi. Door-to-door campaigns were started that aimed at motivating people to start source segregation.

The keynote address by Mr Chaurasia was insightful. He discussed the current waste management challenges, challenges in the implementation of Swachh Bharat Mission, need for a comprehensive, systematic, end-to-

end solution for waste management and the way forward including behavioural change and capacity building.

After the keynote address, the panel discussion was hosted by Ms Karin Deckenbech. Panelists Mr Rodrigues stated that a major problem is that the transportation expense for plastic sent to cement plants for co-processing is incurred by CCP. A solution to this problem would be that the cement plants must pay the city the amount they save on burning fuel. Mr Ajay Kumar Singh praised NAMA but added that it must be more comprehensive as a few wards were not sufficient to clean an entire city.