CII-ITC Centre of Excellence for Sustainable Development

Confederation of Indian Industry

Race to Zero

Summary Report of Events and Webinar Series

Table of Contents

Executive Summary

Global climate is expected to continue to change over this century and beyond. Over the last few decades, governments have collectively pledged to combat the impacts of climate change. The Paris Agreement that was adopted and ratified by countries five years ago, aimed to address the impacts of climate change, reduce greenhouse emissions, and limit the increase of global temperature rise to 1.5°C. India, being a signatory to the Paris Agreement, has committed to a decarbonised future by adopting low-carbon and climate-resilient development practices. As a run up to COP26 and beyond, it is important for businesses along with governments and civil society to deliberate and drive actions on the key sectors of the economy. Confederation of Indian Industry (CII) is supporting the Indian Industry to combat climate change and build resilience through the CII Climate Change Council among other initiatives.

In this context a series of events and webinars were organised by CII ITC Centre of Excellence for Sustainable Development (CII-ITC CESD), on Climate Change and Race to Zero from the month of March to September 2021. This was done in partnership with Hindustan Zinc Limited (HZL), British High Commission (BHC) and The Climate Group. The sessions and webinars organised in this series are given below:

- Session on Transition to Low Carbon Pathway for Hard to Abate sectors at the Conference on Sustainable & Green Solutions for Climate Change | 3 March
- Session on Climate Adaptation and Resilience at the Conference on Business Action in Achieving SDGs | 12 May
- Webinar on EP 100 (Energy Productivity) – Fueling Race to Zero | 8 June
- Webinar on SMEs - Future Proof Business with Climate Action | 25 June
- Webinar on RE 100 – Renewable Energy for Climate Proof Future | 14 July
- Webinar on EV 100 – Clean Transport to Decarbonize Transportation | 28 July
- Webinar on Technology Transfer – Adopting and Innovating for Net Zero Future | 11 Aug

The above sessions and webinars culminated into different sessions at CII's annual flagship event – the 16th Sustainability Summit, which was virtually organised on 2-3 September 2021.

The key takeaways of these events are:

- Companies across all sectors are impacted by climate change. However, the hard-to-abate sectors face more difficulties. Steel sector comprises 7-9% of global GHG emissions. While most steel companies have short, medium, and long-term strategies in place, only a few of them set targets as per the 2° scenario
- The solutions to achieve neutrality in the long-term for hard-to-abate sectors include carbon capture and utilization/storage, renewable energy installations, relevant subsidies, technological solutions, and learning from global best practices
- Due to weather uncertainties caused by climate change, there is an urgent need to develop a disaster-resilient infrastructure. Finance in the infrastructure sector is a crucial criterion for public and private sector partnerships. Institutions are deploying life cycle analysis and cost-benefit analyses in funding sustainable infrastructure. Governments are also engaging with predictable mechanisms for the reconstruction and recovery of assets
- Establishing an industry environment that is conducive to achieving net zero should be done through aligning financial disclosures with climate-related risks. The TCFD

framework for companies can identify the risks and opportunities and convince the senior management on where they need to focus. Along with risk identification, the opportunities can also become a driving force to decarbonize the sector

- Decarbonization initiatives, be it hydrogen reduction process or the use of bio energy, natural gas injection or continuation of large-scale carbon capture and utilization are expected to be commercially implementable after 2030 and by 2040-50 the technology is expected to mature
- The success of transition to clean energy and the switch to renewable energy is going to have a major impact on climate change. To reduce emissions to a maximum extent, focus should be on Renewable Energy Power Transition of EVs. As the grid becomes greener, emissions will be lower
- Considering how charging stations are critical in transitioning to EVs, government and companies should focus on correct locations and number of charging stations. Managing the rush hour area and location for charging stations are of utmost importance
- The expectations from suppliers/ SMEs to reduce emissions and to support large scale companies to achieve their carbon neutrality targets is growing. SMEs do not have enough financial and technical resources to carry out these activities. Thus, it is important for large companies to establish task force for climate-related disclosures, to help their supply chains and make them aware of climate actions
- Funding from the government and private sectors shall be improved to help companies adopt cleaner technology and innovations in this area
- A proper transition roadmap needs to be prepared and adhered to for the next 25 years with inclusions of emission standards, energy efficiency, fuels, and energy mix
- Joining campaigns like EP100, RE100 and EV100, allows industry to set ambition, take action and engage in policy advocacy to meet the goals of 100% renewable efficiency

Introduction to Race to Zero

Race to Zero is a global campaign, ahead of COP26, initiated with the objective to build momentum around the shift to a decarbonized economy for achieving commitments of Paris Agreement. It focuses on the pledge for enhanced action by non-state actors like businesses, cities etc. to achieve net zero emission in the sphere of their work. It is closely linked to various global initiatives and coalitions for emission reduction through enhanced energy productivity, shift to fuel in transportation, energy shift in industrial production, supply chain among others.

The Race to Zero campaign was launched in June 2020 to drive net zero commitments ahead of the UK government hosting the COP26 Summit in November 2021 in Glasgow — the biggest climate summit to take place since the Paris Agreement was signed in 2015. This is led by the High-Level Climate Champions for Climate Action – Nigel Topping and Gonzalo Muñoz – to mobilize actors outside of national governments to join the Climate Ambition Alliance. Signing up for the Race to Zero means also signing up to the Climate Ambition Alliance, a coalition set up in 2019 to encourage nations to amplify ambitions of their Nationally Determined Contributions (NDCs) as established in the Paris Agreement. Countries need to submit the plans for climate action i.e., NDCs between 2016 and 2020 and reduce emissions to half by 2030.

To join the campaign, entities must fulfil the minimum criteria as given below:

Pledge	Pledge at the head-of-organization level to reach (net) zero GHGs as soon as possible, and by midcentury at the latest, in line with global efforts to limit warming to 1.5C. Set an interim target to achieve in the next decade, which reflects maximum effort toward or beyond a fair share of the 50% global reduction in CO2 by 2030 identified in the IPCC Special Report on Global Warming of 1.5°C
Plan	Within 12 months of joining, explain what actions will be taken toward achieving both interim and longer-term pledges, especially in the short- to medium-term
Proceed	Take immediate action toward achieving (net) zero, consistent with delivering interim targets specified
Publish	Commit to report publicly both progress against interim and long-term targets, as well as the actions being taken, at least annually. To the extent possible, report via platforms that feed into the UNFCCC Global Climate Action Portal

Source: https://racetozero.unfccc.int/wp-content/uploads/2021/04/Race-to-Zero-Criteria-2.0.pdf

CII-ITC CESD's Action on Race to Zero

The Centre has been supporting Indian Industry to combat climate change and build climate resilience via various endeavours as given below:

Climate Action Programme (CAP) 2.0°

CAP 2.0° aims at raising the bar on corporate climate action and building climate resilience of Indian businesses

CAP 2.0° in 2019-2020:

- 36 large corporate participants
- 20 assessors trained
- 150 MSMEs trained
- 5 companies recognised

CII Climate Change Council – Led by Industry

The Council is chaired by Mr. Jamshyd N. Godrej, Chairman and Managing Director, Godrej & Boyce since its inception in 2016. The Council holds responsibility for policy advocacy on climate change issues.

In 2020, three working groups were established under the Council to create sectoral awareness on climate change risk and develop recommendations for policy interventions. The working groups comprised of industry professionals, sector experts and research institutions.

1. Carbon Border Adjustment Mechanism (CBAM)
2. Alliance for Sustainable Agriculture (ASA)
3. Climate Change Impacts on Finance and Insurance Sector

CII-Certified GHG Emissions Accounting & Management Training Program

Aims to bring standardization in corporate GHG reporting as per global norms and get more companies in preparing a roadmap for decarbonization

Research

Promote Sustainable Corporate Procurement Practices in India's Manufacturing Sector: Baseline Study for the Automobile Sector

International Platforms

1. Chosen as industry lead from India to contribute to India-Sweden Industry
2. Track under UN Secretary General Climate Action summit
3. Participated in NDC partnership meet in Berlin to represent India and Industry
4. Participated in UNFCCC COP 26, at Madrid with dedicated session on Transportation sector best practices

Advisory Services in sectors like MSMEs, Spice & Agriculture, Mines & Minerals, Automobiles

- GHG Accounting
- Internal Carbon Pricing
- Developing Science-based Targets
- Carbon Sequestration
- Climate Risk Assessment and Management

Summary of Events and Webinars

Event 1: Session on Transition to Low Carbon Pathway for Hard-to-Abate Sectors | Conference on Sustainable & Green Solutions for Climate Change | 3 March 2021

A session on Transition to Low Carbon Pathway for Hard-to-Abate Sectors was organized at the virtual conference on Sustainable and Green Solutions for Climate Change on 3 March. The conference was part of the 24th International Engineering and Technology Fair (IETF), one of the flagship events of CII.

The session focused on the challenges and opportunities faced by Indian industry in achieving technological solutions that will help in meeting Paris Agreements targets and NDCs. It highlighted the sectoral difficulties of the hard-to-abate industries including steel, cement, and chemicals. The sectors are striving to achieve their commitments using tools, methods and strategies including science-based targets, internal carbon pricing, net-zero commitments, RE100, EP100 and similar commitments.

Moderator

- Mr Damandeep Singh, Director, CDP India (then)

Key Speakers

- Mr Shubhashis Dey, Director, Climate Policy Program, Shakti Sustainable Energy Foundation
- Mr Sanjiv Paul, Vice President, Safety Health & Sustainability, Tata Steel Limited
- Mr Ashwani Pahuja, Chief Sustainability Officer and Executive Director, Dalmia Cement (Bharat) Limited
- Ms Alka Talwar, Chief CSR & Sustainability Officer, Tata Chemicals Limited

Challenges

- There is an increase in disclosures from Indian companies. While 16 companies submitted their information last year, 22 companies submitted data this year. An estimate of $100 billion will be required for climate change activities in the next five years, of which the hard-to abate sectors will contribute $7 billion. Globally, emerging regulations are the highest form of risk that companies anticipate
- The GHG-intensive steel sector has its own set of challenges, considering that approximately 7% of global GHG emissions come from this sector, due to its reliance on fossil fuels in operations. China's current hold of steel manufacturing and recycling of 50% of steel is expected to drop to 25% by 2050 and India is expected to be the fastest growing in the steel sector in the next 30 years
- While innovative technological solutions are possible in the iron and steel sectors, they are currently available at very high costs. Other hard-to-abate sectors including petrochemicals, aluminum, cement have no proven technologies. Available solutions with respect to green hydrogen are very expensive. However, waiting for solutions will delay carbon neutrality commitments

- R&D is required in the cement sector as 55-60% of GHG emissions result from process emissions from limestone, along with high fuel requirements and temperatures of approximately 1500 degrees. Electricity consumption is also high in this sector

Solutions

- Steel as a material has infinite recyclability, which newer materials cannot replicate. Hence, steel remains a preferred option for users. The battle to decarbonize power has been won technically, however deployment of this will require time, enabling policies as well as finances
- Carbon capture and storage hold answers to some sectors and have a significant potential. Products made of saved carbon are also being researched and developed
- If capex costs of technologies are $1.4trillion, the cost of newer technologies is in the range of $200 million and therefore may be considered an incremental cost
- Indian cement has the lowest GHG emissions due to material circularity & reuse of industrial waste, waste heat recovery processes, renewable energy usage etc. Yet, there is scope for improvements to achieve carbon neutrality and possible carbon negativity in the long-term future. Some possible solutions lie in carbon and hydrogen-based fuels, synthetic petrol and polyfuels
- Innovation is a game changer. The chemicals sector is likely to have some residual emissions and some experiments of plantations are being considered, along with fuel switching to natural gas in the UK, renewable energy installations in Andhra Pradesh. Carbon capture and storage in USA are being conducted to test the possibilities and feasibilities of low GHG options
- Solutions to achieve neutrality in the long-term include - carbon capture and utilization / storage, renewable energy installations, relevant subsidies, technological solutions eg: bamboo plantations, higher tax for landfilling, preferential buying for low carbon products aimed at customers and learning from global examples could be explored
- Policies for carbon markets, enabling policy frameworks for alternative fuels, global indication of a price on carbon, R&D for technologies and proactive adoption along with innovative and enabling financial mechanisms will support hard-to-abate sectors to achieve neutrality

Number of Participants: 53

Recording Link: Sustainable & Green Solutions for Climate Change-20210303 0930-1.mp4

Pictures of the Session

Mr Shubhashis Dey, Director, Climate Policy Program, Shakti Sustainable Energy Foundation

Mr Damandeep Singh, Director, CDP India (then)

Ms Alka Talwar, Chief CSR & Sustainability Officer, Tata Chemicals Limited

Mr Sanjiv Paul, Vice President, Safety Health & Sustainability, Tata Steel Limited

Mr Ashwani Pahuja, Chief Sustainability Officer and Executive Director, Dalmia Cement (Bharat) Limited

Event 2: Session on Climate Adaptation and Resilience | Business Action in Achieving SDGs | 12 May

The virtual conference 'Business Action in Achieving SDGs' was organised on 12 May 2021 in partnership with British High Commission, Hindustan Zinc Limited (HZL) and Embassy of Sweden. The Conference focused on how industry is integrating and implementing climate change adaptation measures. It highlighted the benefits of building effective adaptation solutions and collaborations required for a climate resilient future and Race to zero.

Chairman & Moderator

- Mr. Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development

Panellists

- Mr. Jens Sedemund, Head of the Environment and Climate Change, Financing for Sustainable Development Division, Organisation for Economic Co-operation and Development (OECD)
- Mr. Kamal Kishore, Indian Co-Chair of CDRI Executive Committee and Member, National Disaster Management Authority
- Mr. Pradeep Singh, Chief HSE Officer, Hindustan Zinc Limited
- Mr. Harsh Dhagamwar, Head - Corporate Sustainability, Tata Steel Limited

Challenges

- Climate change is expected to profoundly change the economy and companies should look at addressing this as a business opportunity. It can be as severe and worrisome as the pandemic in terms of its destruction and the urgent need is to look at measures to curb climate change impacts
- The World Economic Forum has listed climate change as the top global risk for two consecutive years. In the context of race to net zero, targets, intervention areas and disclosures have been taken up by a handful of listed companies in India and the momentum needs to be built up
- Climate change brings with it, weather uncertainties and there is an urgent need for a disaster resilient infrastructure. National Disaster Management Authority is aware of the challenges faced with collapsing infrastructure due to floods, cyclones and impacts due to heat waves. They are faced with dilemmas such as looking at investments in climate-resilient coal power or switching to renewable energy completely. Similarly, strategy for aging infrastructure is also being considered
- Companies across all sectors are impacted by climate change. However, the hard-to-abate sectors face more difficulties. Steel sector comprises 7 to 9% of global GHG emissions. Most steel companies have short, medium, and long terms strategies in place, however only two of them set targets as per the 2-degree scenario

Way Forward

- The government has a key role to play in terms of information & awareness, technology development & transfer and accessibility to finance. Government investment in the aforementioned is crucial to address the issues faced by climate change. Along with that, the government also needs to engage with other organisations / institutions such as academia, industry, farmer support groups as well as private finance companies to come up with solutions to existing and anticipated problems
- For disaster resilient infrastructure, solutions could revolve around improving physical risk assessments not just for the infrastructure to be built but also for it not to create a downstream risk. Upgrading standards is a way forward for creating a better and resilient infrastructure network
- Finance in the infrastructure sector is a crucial criterion for public and private sector partnerships. Institutions are deploying Life Cycle Analysis and Cost-benefit Analyses in funding sustainable infrastructure. Governments are also engaging with predictable mechanisms for the reconstruction and recovery of assets
- HZL has climate change resilience as its first and most important consideration in terms of sustainability. Their initiatives work around avoiding GHG emissions including energy efficiency measures or reducing / switching to low GHG emitting fuels. They have renewable energy installations of solar, wind etc. on mine waste dump yards or waste lands. Through plantation initiatives, they have sequestered offsets of 2,500 tonnes equivalent. They are also actively working with the supply chain to reduce emissions
- Tata Steel instituted a Centre of Excellence for Climate Mitigation and Adaptation in 2018. They identified three solutions to their transitional risks:
    i. Technology upgrades including energy efficiency measures, waste heat recovery, secondary steel making procedures, use of recycled scrap steel, switching to waterways & railways to transport goods
    ii. Strengthening internal governance to strategize carbon neutrality for the company, supply chain resilience, revise their current internal carbon price from $15 (to at least double)
    iii. Stakeholder collaboration by working with customers to seek feedback on low carbon emitting products & their feasibility, working with start-ups, academia, technology providers to reduce their climate change impacts.

Number of Participants: 266 national and global participants attended the session, out of which 28% were female delegates

Recording Link: https://ciiindia-my.sharepoint.com/:v:/g/personal/banajyotsna_baruah_cii_in/EZyqPCNids1EpeORDjnZA4EBNQrXDQYhA8xj1X3E6fOJog?e=ffzyu9&isSPOFile=1

Pictures of the Session

Mr. Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development

Mr Kamal Kishore, Indian Co-Chair of CDRI Executive Committee and Member, National Disaster Management Authority

Mr Harsh Dhagamwar, Head Corporate Sustainability, Tata Steel Limited

Mr Jens Sedemund, Head of the Environment and Climate Change, Financing for Sustainable Development Division, Organisation for Economic Co-operation and Development (OECD)

Mr Pradeep Singh, Chief HSE Officer, Hindustan Zinc Limited

Webinars on Race to Zero

CII in partnership with HZL organised a series of six webinars on Race to Zero with focus on topics like EP100, SME Climate Hub, RE100, EV 100, Technology Transfer including a CEOs session. The CEOs session was held as a part of CII's 16th Sustainability Summit. The webinars were organised as a run-up to COP26 to generate awareness.

Webinar 1: EP 100 (Energy Productivity): Fueling Race to Zero | 8 June

The webinar aimed to bring awareness on Race to Zero campaign and EP 100. EP 100 is focused towards enhancing energy productivity through energy smart companies. Under EP 100, companies have committed to doubling their energy productivity, rolling out energy management systems, or achieving net zero carbon buildings.

Session	Speaker
Welcome	• Mr Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development
Decoding race to net zero with energy productivity	• Ms Shaily Maloo, Advisor, CII-ITC Centre of Excellence for Sustainable Development
Viewpoint on race to net zero	• Ms Anshul Bhamra, Policy Manager, CDP India
Climate action leaders speak on Race to Net Zero	• Mr Prabodha Acharya, Chief Sustainability Officer, JSW Group
Energy smart future from the lens of an EP 100 member	• Mr Pravin C. Rawool, AVP & Head (MEP, Internal Services & EP100 lead), Godrej & Boyce • Mr Nagahari Krishna L, Director – Industry Affairs and Hot Spots, Danfoss Industries Private Limited
Q&A and Concluding	• Mr Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development

Challenges

- Over the next 2-3 decades, India's emissions are likely to grow at the fastest pace in the world because of the responsibility of pulling millions of people out of poverty. And most of the carbon neutral technologies are unreliable, too expensive, or not in existence

- The steel sector is a hard to abate sector and there is an intense pressure from all stakeholders since it is a carbon intensive sector. Energy efficiency as well as material efficiency are the two areas that will play a crucial role in the transition. This would account for nearly 90% of reduction in direct emissions from the current decade

- Globally, the iron and steel industry are one of the major contributors of emissions and energy demand. According to the Indian Energy Outlook report, Indian industry accounts for more than a 10% increase in global energy demand since 2000

- With respect to exports, international regulatory requirements (example, border carbon adjustments) pose a challenge, which may affect businesses, and there are financial as well as regulatory barriers especially in the steel sector. Either investments are needed to improve technology or taxes need to be paid

- High upfront costs of installing higher efficiency or energy management technologies as well as lack of technology available for energy efficiency in certain energy intensive processes

- Identification of energy wastages across the organisation in terms of lack of energy data

- Lack of policy incentives and support

- Increasing demand due to cooling especially from buildings- by various estimates, including the India Cooling Action Plan, can be the single factor that pushes electricity demand in the next decade and a half, from cooling requirements

- Leveraging the potential of energy efficiency and achieving annual energy efficiency improvements that would put India on a path towards net zero is a challenge that would require coordinated efforts between governments and business partners

Solutions

- Decarbonization initiatives be it hydrogen reduction process or use of bio energy, natural gas injection or continuation of large-scale carbon capture and utilization are expected to be commercially implementable after 2030 and by 2040-50 the technology is expected to mature

- Currently the steel industry has deployed best available technology- top gas recovery and coke dry punching, waste heat recovery systems. That is how JSW is trying to become more energy efficient and reduce emissions. At the same time, they are also looking at new technology – the Combiflex productions route

- JSW is the first steel company in India which has an operating CCUS plant and now looking at scaling it up. They are collaborating with World Steel to work towards improving efficiencies- both on the energy and material efficiency fronts, as well as process efficiency

- Establishing an industry environment that is conducive to achieving next zero should be done through aligning financial disclosures with climate related risk – TCFD is the framework for companies to identify the risks and opportunities which helps in convincing the senior management on where they need to focus

- At Godrej, there is a re-look at the processes on the shopfloor to optimize on the processes, improve on it so that energy efficiency can be brought in w.r.t operational efficiency, and product performance. Leveraging advanced technology and looking at IoT- internet of things for smart factories can make monitoring and data analytics relatively simpler

- Use of real time energy analytics, for monitoring purposes with IoT and technology, all utility meters, of energy air gas etc can be integrated together so that data is available at real time for grid power as well as solar power and consumption till the last mile. This is very useful to analyse the data and take decisions in order to implement energy saving projects

- Installation of energy efficient pumps and motors with improved design of impeller & casing, better efficiency at high RPM, high efficiency motor and integrated control though DPT can lead to 20% energy saving compared to a standard pump

- Process upgradation done in the paint shop of decentralisation of the ventilations systems can provide significant energy savings

- Producer gas, which is green power is used instead of applications related to ovens in the plants which have benefitted in 2 ways - it works on Agri-waste(bio-briquettes), which creates employability (owing to the supply chain), the cost is less compared to a conventional electric heater/oven. Contributes to RE footprint as well as reduces energy consumption

- 40% reductions in CO2 emissions can be achieved with energy efficiency improvements. This can be done by using energy efficient motors, retrofitting buildings, use of heat pumps, use of smart technical building systems, using appliances with the highest energy efficiency standards, electrifying transport. All this is from a global perspective

- Danfoss looks at improving energy efficiency via sector integration – that means not improving energy efficiency in silos. Combining more than one system or process so that the energy use is optimised. For example, in a lot of buildings, there is energy use for heating requirements as well as cooling requirements (a lot of heat is generated from cooling). Technologies are available for combining the cooling and heating and much more can be done in this area. There are multiple ways of doing sector integration in various sectors. Coupling of sectors (electricity and heating) is key for the future.

- Danfoss has oil free systems, variable frequency drives, valves, energy converters. Globally, there are over 160 energy saving projects in 27 factories in 11 countries at an average payback time of 2.8 years

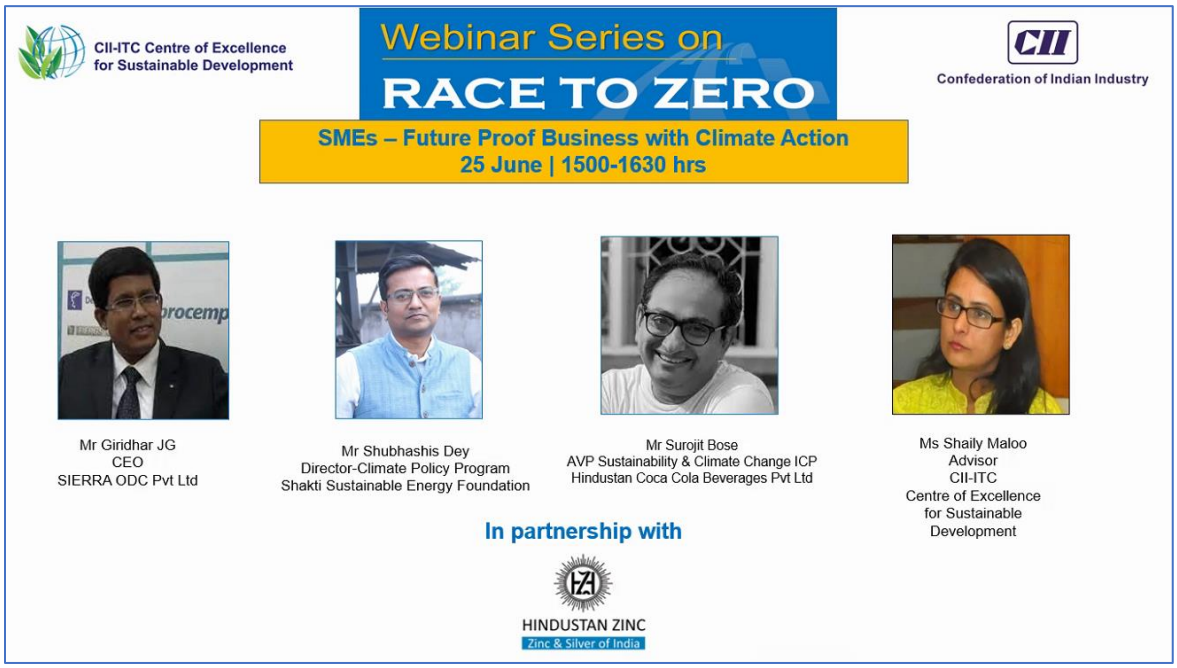
- The Danfoss Chennai campus has used 100% Green Energy for successive three months starting June'20. 92% of the total energy consumption in the Chennai campus was covered by renewable energy sources in 2020

Number of Participants: 67 Participants attended the session

Recording Link: https://ciiindia-my.sharepoint.com/:v:/g/personal/sonia_dhamija_cii_in/ESj1xMyhEXNKnkQzwpCvnIUBlqiFRrxoh-08kKKRKGKw4Q?e=vEcx1A

Webinar 2: SMEs - Future Proof Business with Climate Action | 8 June

Race to Zero campaign is closely linked to various global initiatives and coalitions focused on emission reduction through enhanced energy productivity, a shift in fuel in transportation, energy shift in industrial production, and supply chain. Small and medium enterprises play an essential role in achieving net-zero emission by mid of century. The webinar focused on building resilience and mainstreaming climate change among Small and Medium Enterprises (SMEs).



Session	Speaker
SMEs - Future Proof Business with Climate Action	• Ms Shaily Maloo, Advisor, CII-ITC Centre of Excellence for Sustainable Development
SMEs commitment on Climate Action	• Mr Giridhar JG, CEO, SIERRA ODC Private Limited
A perspective on climate action by SMEs	• Mr Shubhashis Dey, Director, Climate Policy Program, Shakti Sustainable Energy Foundation
Future-proofing business with climate action – SMEs perspective	• Mr Surojit Bose, AVP Sustainability and Climate Change ICP, Hindustan Coca Cola Beverages Pvt Ltd

Challenges

- Transition of organisations to Race to Zero is at a much higher pace, so the expectation from suppliers is growing to reduce emissions and help larger organisations achieve their targets. SMEs do not have enough resources both financial and technical to carry out these activities

- Understanding of environmental laws and disclosures for SMEs outside tier 1 or tier 2 cities and more specifically for SMEs in rural areas is difficult

- Mr Shubhashis Dey stated that according to an article in the Economic Times, 59% of SMEs and start-ups are expected to close or sell off by end of 2021 due to back-to-back waves of COVID-19. Economic strategy and hard work of SMEs over the years is vulnerable to climate disasters

Solutions

- SMEs need to divide targets into short, medium & long-term plans to achieve Race to Zero

- Build enough resilience to disasters and adapt to the new normal

- SME Climate hub provides guidance to SMEs on how to work on their emissions

- Initiatives like Science Based Targets (SBTi) provide companies a clearly defined path to reduce emissions in line with the Paris Agreement goals

- Invest in renewable energy & rainwater harvesting, construct green buildings with eco-friendly material, use CFL and adapt technologies that help in making a carbon neutral building

- Educate employees on their contribution to the environment and reducing ecological footprints

- Draw a climate risk plan for the business to keep it going during climate disasters

- Big companies are establishing task forces for climate related disclosures to help their supply chains and make them aware of climate actions

- In countries like China & Germany, companies from sectors like iron & steel, chemical plants, pharma & clean tech have come together and shared utilities, infrastructure, and waste, to reduce the cost of procuring and processing waste. Other countries need to adopt solutions like these in order to achieve the Paris Agreement goals

Number of Participants: 50 participants attended the session

Recording Link: https://ciiindia-my.sharepoint.com/:v:/g/personal/sonia_dhamija_cii_in/EWJ48okrMqZNtJ__lWFydp0BQOdPpzRQUrnms0-rYrZFQQ?e=RKHuG2

Webinar 3: RE 100 – Renewable Energy for Climate Proof Future | 14 July

The International Energy Agency estimates that over 40% of emissions cuts are needed to reach global climate goals. While energy efficiency holds potential, the goal of net zero emissions cannot be achieved without use of renewable energy. Renewable energy

commitments are an essential component of decarbonizing growth. In the series of six , this webinar focused on bringing awareness to the Race to Zero campaign and renewable energy, assisting climate proof future with renewable energy. This webinar was organised by CII in partnership with HZL and Climate Group.

Session	Speaker
Viewpoint on Race to Net Zero	• Ms Shaily Maloo, Advisor, CII-ITC Centre of Excellence for Sustainable Development
Renewable energy pathway for achieving net zero	• Mr Avinash Acharya, Manager, Energy Transitions, Climate Group India
Renewable energy commitment and action from the lens of an RE 100 member	• Mr Bose Varghese, Head- Green initiatives, Infosys • Mr Shabbir Kanchwala, Senior Vice President, K Raheja Corp

Challenges

- Policy barriers & regulatory complexities are a big challenge for companies
- In the current situation where employees are working from home, electricity consumption has increased thus making difficult to calculate daily carbon footprint of companies
- Corporate (industrial and commercial sector) electricity demand accounts for about 50% of total electricity consumption in India and globally. Businesses are thus a major market force to drive decarbonisation of the power sector
- Together, RE100 members have a combined annual demand for renewable electricity of 334TWh - demand for renewable electricity is now greater than that of the UK

Solutions

- Mainstreaming renewable energy technologies that exist will help companies to adopt them
- More needs to be done to realise the scale and speed of demand-driven renewables investment that regions such as Europe and North America are already enjoying
- Transition to EVs will help achieve the net zero emission goal
- Remove regulatory barriers and implement stable frameworks to facilitate corporates' renewable energy sourcing
- Create an electricity market structure that allows for a direct trade between corporate buyers and renewable electricity buyers
- Promote direct investments in on-site and off-site renewable electricity projects
- Joining campaigns like RE100 allows to set ambitions, act and engage in policy advocacy to meet the goals on 100% Renewable Electricity

Number of Participants: 55 participants attended the session

Recording Link: RE 100 – Renewable Energy for Climate Proof Future Action_14 July_1500-1640 hrs-20210714 0931-1.mp4

Webinar 4: EV 100 – Clean Transport to Decarbonize Transportation | 28 July

Transportation sector accounts for about 25% of the total greenhouse gas emissions from energy. Thus, Race to Zero cannot be achieved without shift to cleaner transports. The electric vehicle has emerged as the forerunner in decarbonization of transportation sector. In a series of six webinars, this fourth one is focused on bringing awareness to the Race to Zero campaign and electric vehicle – the clean transport for achieving Race to Zero. The webinar was in partnership with HZL, British High Commission (BHC) and Climate Group.

Session	Speaker
Viewpoint on Race to Net Zero	• Ms Shaily Maloo, Advisor, CII-ITC Centre of Excellence for Sustainable Development
A perspective on decarbonization of electric vehicle	• Dr Andrew Fleming, British Deputy High Commissioner to Andhra Pradesh & Telangana, British High Commission
Electric Vehicle – The Shift in Transport	• Mr Atul Mudaliar, Head of Business Actions, Climate Group India
Industry Speaks - Share insight on industry actions and commitment to decarbonize transportation through EVs	• Ms Shilpi Samantray, Lead - Electric Mobility & Energy, Ola Mobility Institute • Mr S A Sundaresan, Vice-President, EV & eMobility Solutions, Ashok Leyland Limited • Mr Anirban Ghosh, Chief Sustainability Officer, Mahindra Group

Challenges

- Limited availability of green electricity for the purpose of charging EVs
- Lack of charging infrastructure in terms of number and location of charging stations
- Lack of correct vehicle type
- Lack of access to capital cost required for manufacturing, land lease rentals, electricity, manpower, etc.
- Embedded emissions in products which are a result of the raw material that the product is made from

Solutions

- To reduce emissions to a maximum extent, Renewable Energy Power Transition of EVs should be focused on. As the grid becomes greener emissions will be lower

- Charging stations are critical in transitioning to EVs. Government and companies should focus on correct locations and numbers of charging stations. Managing the rush hour area and location for charging stations is of utmost importance

- SMART battery is a smart solution to charge EVs. The goal is to reduce the size of the battery and by minimizing the same, the cost of the vehicle can be reduced. Also, batteries should be charged at the right time and by the right amount

- Charging is temperature dependent which should be kept in mind while manufacturing EVs

- Driver behaviour is also important; thus, trainings should be provided to drivers to improve energy efficiency

- The cost factor of EVs in future would be lower as compared to the current scenario and people's preference to buy them as a value preposition will be higher in comparison to fuel-based vehicles. The demand side should be more than the supply side for this transition, which has started happening

- The focus should be on decarbonising purchased products that have embedded emissions

- Certain strategies of developed countries could be adopted to make this transition easier. For example, under the Ten Point Plan of UK, the sale of new diesel and petrol cars by 2030 will end. The UK Plan outlines time and technology to decarbonise automobile sector. This will support highly skilled jobs up to 9.7 billion in 2050. Second-hand cars will still be sold but no new ones after the key timeline. The goal is to achieve a more resilient economy. India can also work on similar models to achieve more significant results

Number of Participants: 48 participants attended the session

Recording Link: EV100 – Clean Transport to Decarbonize Transportation-20210728 0930-1.mp4

Webinar 5: Clean Technology Transfer- Adopting and Innovating for Net Zero Future | 11 August

Clean technology is evolving every day and is a must for the success of Race to Zero and race to resilience. Several clean technologies are still not well tested. In such a scenario, clean technology transfer poses both an opportunity and a challenge. Hence, finance for clean technology becomes important. In a series of six webinars, this fifth one organised by CII in partnership with HZL focused on bringing awareness to the Race to Zero campaign and sharing insights on clean technology transfer.

Session	Speaker
Viewpoint on Race to Net Zero	• Ms Shaily Maloo, Advisor, CII-ITC Centre of Excellence for Sustainable Development
Clean Technology Transfer Perspective	• Mr Sandeep Tandon, National Project Manager, Low Carbon Technology Deployment Project, UNIDO
Cleantech Finance	• Mr Arunavo Mukherjee, Vice President - Advisory Services, Tata Cleantech Capital Ltd
Industry Speaks - Share insight into technology transfer from industry point of view	• Dr. Anuradda Ganesh, Chief Technical Advisor and Director, Cummins Technologies India • Dr. Santanu Satapathy, Corporate HSSE – Environment Lead, CLP India Private Limited • Mr Sandeep Sarin, Head - Market Development, Wärtsilä India

Challenges

- Fund requirements to adopt low carbon technologies
- No proper roadmap towards achieving green technology
- Less focus on carbon sequestration and utilization as it involves high cost
- Lack of centres for data collection and analysis
- Lack of awareness and skilled manpower
- Lack of proper government policies on green technology

Solutions

- Overall carbon analysis is very important, and industry and academia need to come together to work on enough analysis for policy making
- National level forums should be formed for carbon capture or energy storage to lay down long term roadmaps and help companies work in line with national action plans
- Funding from government sector and private sector shall be improved to help companies adopt cleaner technology and innovations in this area
- A proper transition roadmap needs to be prepared and adhered to for the next 25 years with inclusion of emission standards, energy efficiency, fuels, and energy mix
- Government policies need to play an important role in adopting cleaner technologies
- Building of a center for data collection and analysis of green technologies could also help
- Trainings to be provided to skill the manpower in green technology

Number of Participants: 43 participants attended the session

Recording Link: Clean Technology Transfer- Adopting and Innovating for Net Zero Future-20210811 0937-1.mp4

Webinar 6: Session on Race to Zero at CII's 16th Sustainability Summit | 3 September

Global climate is projected to continue to change over this century and beyond. Effects of global climate change like loss of sea ice, accelerated sea level rise, and longer, more intense heat waves are now occurring. Over the last few decades, governments and businesses have collectively pledged to combat the impacts of climate change. The UN climate champions have launched the Race to Zero Breakthroughs that define a roadmap for net- zero carbon emissions and slow the pace of climate change.

The Race to Zero campaign aims to builds momentum around the shift to a decarbonized economy and strengthen contribution to the Paris Agreement. To progress towards net zero emissions, engagement and commitment from leaders, regulators, policymakers, businesses, investors, and other stakeholders are required to achieve a healthy planet. India being a signatory to Paris Agreement has committed to a decarbonised future, adopted low-carbon and climate-resilient development practices. Different initiatives are taken to scale up energy efficiency, zero carbon recovery, green mobility, climate adaptation, and protecting biodiversity. The session was a part of the Race to Zero awareness campaign as a run-up to COP26.

The session brought together leaders to discuss actions and opportunities for industry to work collaboratively and mitigate climate related risk and move towards Race to Zero. It further deliberated on policy support required for resilient practices, creating more focus on Scope 3 emissions, and finding innovative solutions like use of hydrogen, 100% RE and waste utilization.

Chairman & Moderator

- Mr Ravichandran Purushothaman, President, Danfoss India Pvt Ltd

Panelists

- Mr Mahendra Singhi, MD & CEO, Dalmia Cement (Bharat) Limited
- Dr Pradheepram (Ram) Ottikkutti, Executive Director – India Engineering, Cummins India
- Mr Mark Griffiths, Global Climate Business Leader, WWF

Challenges

- Hard-to-abate sectors such as cement, steel and chemicals are the biggest polluters of greenhouse gases and the cement sector is known for emitting 7-8% of total global CO2 emissions

- Indian entrepreneurs have great ideas, but the challenge is lack of funds for innovation and technology adoption

- Globally, the transport sector is responsible for 25% of total carbon dioxide (CO2) emissions from fuel combustion according to the EIA 2020 report. In India, it is the third most CO2 emitting sector, and within the transport sector, road transport is a major contributor to total CO2 emissions

- Biodiversity loss is one of the major concerns. As per the latest WWF report, there has been a loss of 60% of biodiversity in the last 40 years

- Agriculture and food sector are the major contributors to GHG emissions and play an important role in net zero transition of India. As more than 600 million people are dependent on agriculture, the transformation to net zero will be a humongous task

Solutions

- Decarbonization of the transport sector is crucial for sustainable development of the nation. With initiatives like electrification of the transport sector, adoption of renewables, and new policies to support clean transport and mobility in India such as Vehicle Scrappage Policy, Bharat Stage-VI emission norms and Electric Vehicle Policy, India is now on par with EU and US emissions in various forms of transport and mobility

- To achieve the net zero transition, we bank on technology and science-based targets (SBTi). It is not just companies who need SBTi, but countries too

- In achieving net zero in hard-to-abate sectors, mindset, and leadership play an important role. Dalmia Cement took a leadership role and has set an example in reducing its carbon

footprint of around 40% lower than global average in the cement industry by adopting different measures such as carbon capture and utilization, water efficiency and renewable energy in its operations

- The government needs to take calibrated steps to reduce emissions while taking care of economic growth of the country. There is a cost of doing everything but there is a need to look at the benefits; we may pay for clean transport and mobility but save in health care and better fuel economy

- Soil, forest, fresh water, mangroves, and coral reefs protect our natural environment and enable us to manage the fluxes in our climate

- To transform the agriculture sector and make it climate resilient, there is a need to relook at farming practices - how we manage soil is important, and sound practices like crop rotation over monoculture is a good idea

- There is a need to educate consumers about the new ways of consuming and living. Both government and business have a role to play in the shift to how we make purchases and consume food

Number of Participants: 180 participants attended the session

Recording Link: https://www.youtube.com/watch?v=vrD7IPgDb3I

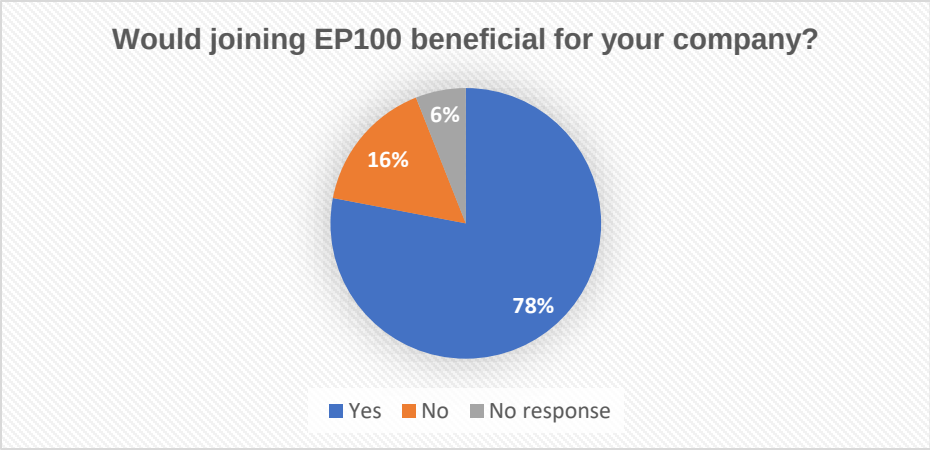
Audience Polling Results

Polling was conducted among the participants of the webinars to get their feedback. The polling questions are given below:

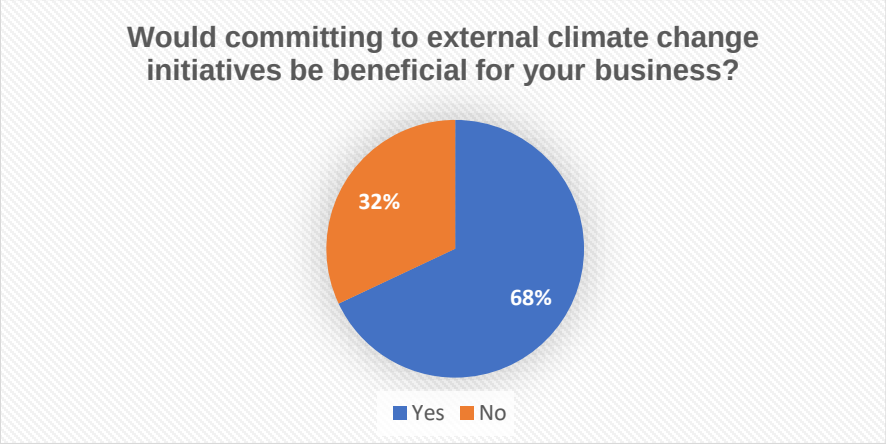
1. Would joining EP100 beneficial for your company?
    a. Yes
    b. No
2. Would committing to external climate change initiatives be beneficial for your business?
    a. Yes
    b. No
3. Would joining RE100 beneficial for your company?
    a. Yes
    b. No
4. Would joining EV100 beneficial for your company?
    a. Yes
    b. No
5. Has adoption or probable adoption of clean tech be beneficial to your company?
    a. Yes
    b. No
6. What are the clean commitments that your company would like to commit to or are committed to?
    a. EP100
    b. EV100
    c. RE100
    d. Race to Zero

These polls were run across all webinars and the graphs and results below is the cumulative response generated across all webinars. The number of respondents vary from 40-60 in the webinars.

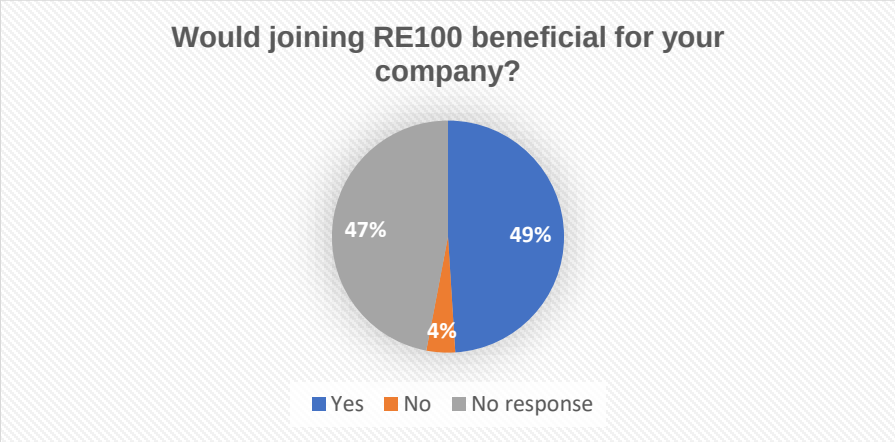
1. 78% respondents mentioned that their company will benefit if they join the EP100 initiative



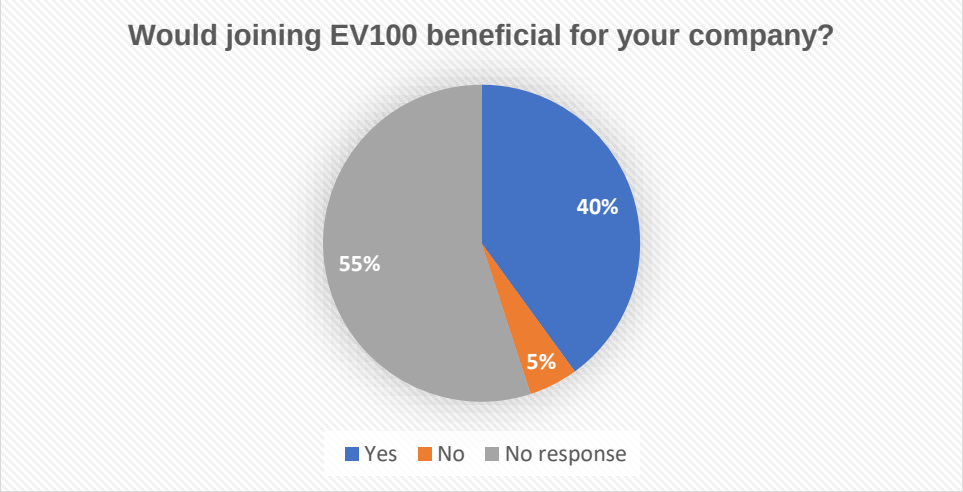
2. 68% have responded that committing to external climate change initiatives will be beneficial to their company



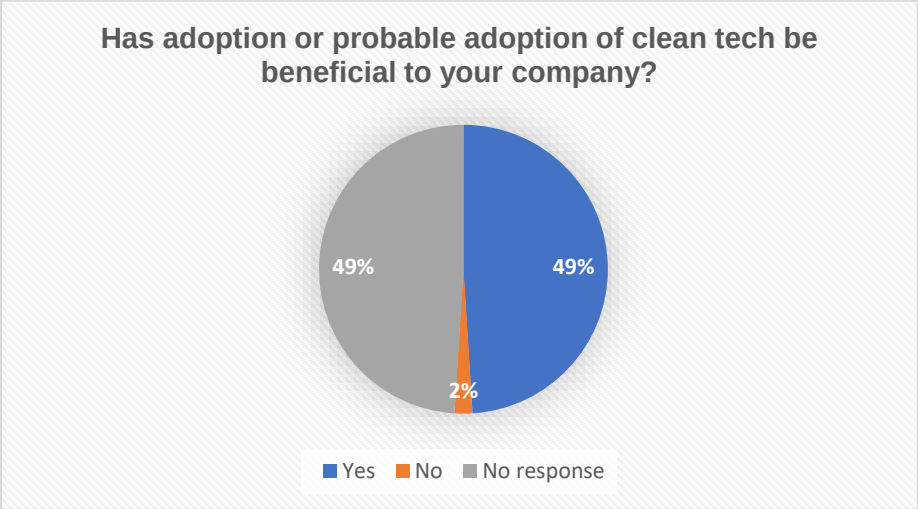
3. 49% respondents stated that joining RE100 initiative will be beneficial to their company



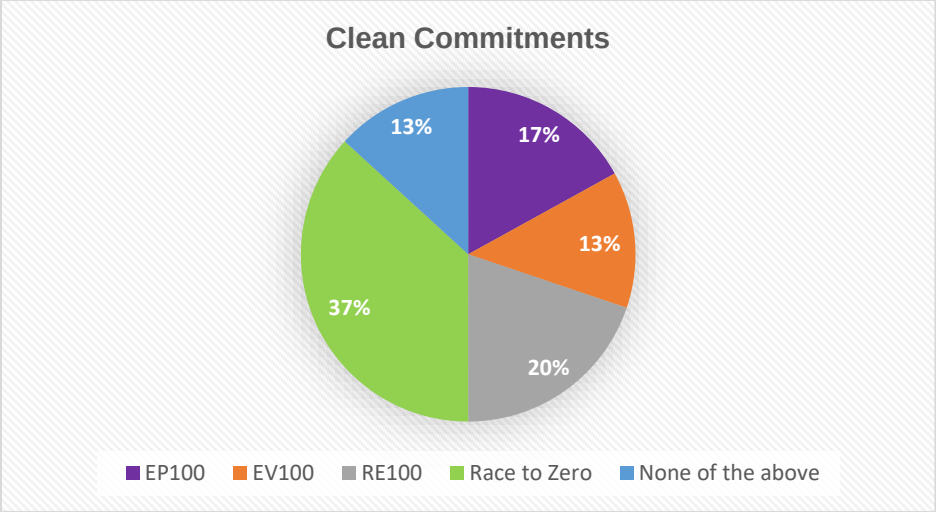
4. 40% respondents feel that joining EV100 initiative will be beneficial to their company



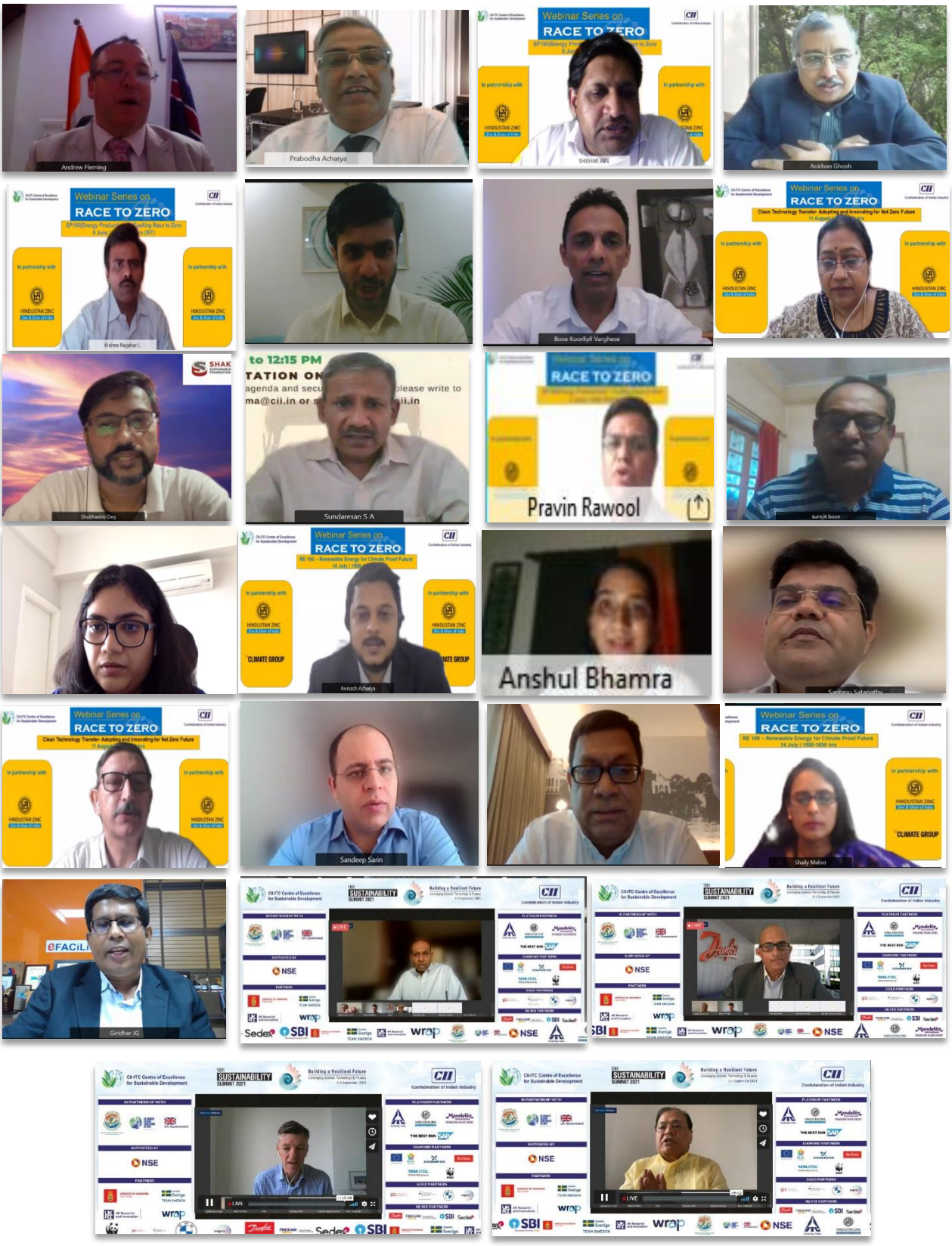
5. 49% respondents stated that adopting clean technology is beneficial to their company



6. An average of 37% respondents mentioned that they are committed or would like to commit to Race to Zero. Similarly, 20%, 17% and 13% of respondents would like to commit/ or committed to initiatives like RE100, EP100, and EV 100 respectively.



Speakers


Webinar Series on
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Andrew Fleming
Prabodha Acharya
SHEKHAR JAIN
Anirban Ghosh
Krishna Nagahari L
Bose Koorilyil Varghese
Clean Technology Transfer- Adopting and Innovating for Net Zero Future
Shubhashis Dey
Sundaresan S A
Pravin Rawool
surajit bose
RE 100 – Renewable Energy for Climate Proof Future
Avinash Acharya
Anshul Bhamra
Sandeep Sarin
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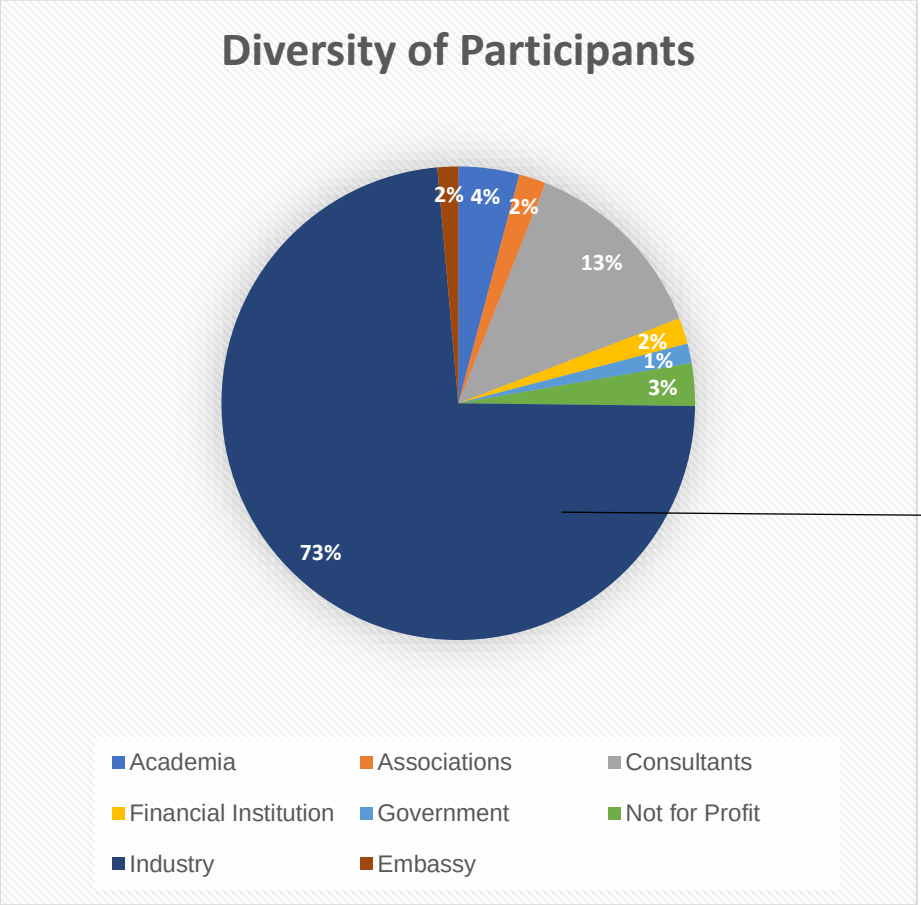
Annexure 1: Participants Diversity in the Events & Webinars

- There were 1346 participants in the aforementioned events and webinars, out of which 22% were females
- The different sectors which have been a part of the webinars are Industry, Government, Academia, Associations, Consultants, Financial Institutions and Not for Profit organisations



Industry Sectors
Auto & Auto Components
Cement
Chemicals
Construction & Infrastructure
Consumer Goods & Services
Electrical & Electronics
Energy & RE
FMCG
Oil & Gas
Healthcare
IT
Logistics
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