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International Energy Summit

Transitioning Towards Green Economy

October 11-12, 2022

The Imperial, Janpath, New Delhi

AGENDA

THE ASSOCIATED CHAMBERS OF COMMERCE AND INDUSTRY OF INDIA

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International Energy Summit
Transitioning Towards Green Economy

Background

India representing 17% of the world population, is responsible for mere 5% global emissions. It has been ranked among the top 10 countries consecutively in the Climate Change Performance Index for the last two years. At the fifth anniversary of the Paris Agreement on Climate Change (December 2020), India was the only G20 nation compliant with the agreement - on track to meet and exceed its NDC commitment of achieving 40% electric power installed capacity from non-fossil fuel-based sources by 2030.

With the vision of increasing pace to towards climate concern, India has update the NDC which is now stands committed to reduce Emissions Intensity of its GDP by 45% by 2030, from 2005 level and achieve about 50 % cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

The earlier NDC indicated the quantitative targets up to 2030 namely, cumulative electric power installed capacity from non-fossil sources to reach 40%; reduce the emissions intensity of GDP by 33 to 35 percent compared to 2005 levels and creation of additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover.

Since the country joined the Paris climate accord (in 2015), it is estimated to have spent more than US$80 billion towards decarbonization efforts, with a focus on renewables. An additional US$300 billion is expected to be spent in the decade to 2030.

India is currently implementing one of the most extensive renewable energy expansion programmes globally.

India's focus on RE is manifest of the Government's target, policy measures and the official target of 500 GW RE power by 2030, of which ~300GW is expected to be from solar.

The Energy Conservation Act, recently passed in the Lok Sabha would largely help curb carbon emissions and achieve net zero compliance by 2070 in line with Hon'ble Prime Minister Shri Narendra Modi's announcements at the COP26 (UN Convention in Glasgow, UK).

The Energy Transition in India has begun with introduction and advancements in solar & wind technology, evolving alternate fuels like Green Hydrogen, Green Ammonia, Ethanol/ Methanol that will help create efficient and low carbon transportation systems and decarbonise industry 4.0. This will create significant opportunities for investment and finance, technical/joint venture collaborations (domestically and internationally).

In the transition from conventional fossil fuel-based power generation to an alternative resource based energy portfolio, nuclear energy plays a significant role to help economies achieving zero carbon footprint targets.

ASSOCHAM is pleased to announce the 2-Day "International Energy Summit – Transitioning Towards Green Economy" on 11th & 12th October 2022 at The Imperial, Janpath, New Delhi.

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AGENDA: DAY 1
Tuesday | October 11, 2022

09.30 am – 10.15 am	**REGISTRATION & NETWORKING TEA**	
10.15 am – 11.30 am	**INAUGURAL SESSION**	
10.15 am	Ceremonial Lighting the Lamp	
10.20 am	Welcome Address	**Mr. Deepak Sood,** Secretary General, ASSOCHAM
10.23 am	Opening Remarks	**Mr. Sumant Sinha,** President, ASSOCHAM & Chairman and CEO, ReNew Power
10.30 am	Shared Perspective	
	• *RE Industry*	**Mr. Ashish Khanna,** CEO, Tata Power Renewable Energy Limited
	• *Ancillary*	**Mr. Pradeep Kheruka,** Chairman, Borosil Limited
	• *Utility*	**Mr. Debasish Banerjee,** MD - Distribution, CESC Limited
	• *Hydrogen*	**Mr. Anindya Chowdhury,** Country Manager - Energy Transition, Shell
11.00 am	Address by the Guest of Honour	**Dr. Sudhanshu Trivedi,** Member Parliament, Rajya Sabha & Member, Standing Committee on Energy
11.10 am	Keynote address by Chief Guest	**Mr. Bhagwanth Khuba,** Hon'ble Minister of State for New & Renewable Energy, Government of India
11.25 am	Concluding Remarks	**Mr. Ajay Singh,** Sr. Vice President, ASSOCHAM & Chairman and Managing Director, SpiceJet

11.30 am – 1.00 pm	**STATE CONTRIBUTION AND TARGETS TOWARDS GREEN ECONOMY** ***(Confirmed State Partner – State Govt of Karnataka)***	
11.35 am	Opening	**Mr. Sumant Sinha,** President, ASSOCHAM & Chairman and CEO, Renew Power
11.45 am	Industry Addresses	
	• *RE Industry*	**Mr. Kishor Nair,** COO, Avaada Energy
11.55 pm	Investment Scenario and Ease of Doing Business in the State	**Smt. Gunjan Krishna, IAS,** Commissioner Industries and Commerce Department, Govt of Karnataka
12.05 pm	Special Address	**Mr. K. P. Rudrappaiah,** MD, Karnataka Renewable Energy Development Ltd. (KREDL)
12.15 pm	Address by the Guests of Honour	**Mr. Dinesh Waghmare, IAS,** Principal Secretary to the Govt. of Maharashtra, Department of Energy **Dr. E.V. Ramana Reddy,** Addl. Chief Secretary to Govt of Karnataka, Dept. of Commerce & Industries
12.35 pm	Address by the Chief Guest	**Mr. Murgesh R. Nirani,** Hon'ble Minister for Large and Medium Industries, Govt of Karnataka
12.50 pm.	Concluding Remarks & Vote of Thanks	**Mr. Sanjeev Seth,** Co-Chairman, ASSOCHAM National Council on Power and Managing Director, ITPCL
1.00 pm – 2.00 pm	**Lunch**	

2.00 pm – 3.30 pm	**SESSION 1: EMERGING TECHNOLOGY ROADMAP**
Session Chair and Moderator:	**Mr. Ashish Khanna,** CEO, Tata Power Renewable Energy Limited
Govt Panel:	**Mr. A. K. Tripathi,** Advisor, MNRE, Govt of India
Industry:	**Mr. Vish Ganti,** VP-Product and GM, AutoGrid India **Mr. Gaurav Verma,** DGM - Business Development & Branch Head, M N Dastur **Mr. Atul Arya,** Head-Energy Storage Systems, Panasonic Life Solution India **Mr. Vivek Bhide,** MD, John Cockerill India **Mr. Arijit Mitra,** Head Distribution C&I, Longi Solar India **Mr. Alok Nigam,** Senior VP-RE, Serentica
	Q & A
Points for Discussion (Supply-side)	• Integrated Solar Manufacturing & New Trends such as Perovskites, Beryllium, Hetero Junction Technology • Wind Energy Prospects – Repowering, Off-shore/ Fixed and Floating Platforms • Transition to Green Hydrogen Economy • Grid-Edge Technology and DER Integration • Feasibility of Carbon Capture Utilisation and Storage – CCUS

3.30 pm – 5.00 pm	**SESSION 2: GRID MODERNIZATION & RESILIENCE – INTEGRATE RE AT SCALE**
Session Chair and Moderator:	**Mr. Ghanshyam Prasad,** Chairman, CEA
Govt Panel:	**Mr. Praveen Gupta,** Chief Engineer, Integrated Resource Planning, CEA
PSUs:	**Mr. P. C. Garg,** COO CTU, PGCIL **Mr. S. K. Soonee,** Former CMD, POSOCO
Industry:	**Dr. Rajib K. Mishra,** Director-Marketing & Business Development, Addl Charge of CMD, Power Trading Corporation (PTC) **Mr. Balaji Sivan,** Director, Sterlite Transmission **Mr. Abhishek Ranjan,** SVP – Strategy, (Utilities & Retail), Renew Power **Mr. Sameer Ganju,** Associate VP, Adani Transmission Ltd. **Dr. Ashutosh Natraj,** Founder and CEO, Vidrona
	Q & A
Points for Discussion	• Policy and Regulatory Framework • Modernising the Grid - Automation & IoT Applications • Resource Adequacy • Reserves Assessment • Grid Balancing - Technology Options and Ancillary Market Design • Evolving trends: TSO-DSO Coordination

5.00 pm – 6.30 pm	**SESSION 3: EFFICIENT AND LOW CARBON MOBILITY**
Session Chair and Moderator:	**Mr. Sudhendu Sinha,** Advisor-Infra Connectivity, Electric Mobility, NITI Aayog
Govt Panel:	**Ms. Archana Chauhan,** Head e-Buses Vertical, CESL (EESL subsidiary) **Mr. Ashish Kundra,** Principal Secretary and Commissioner of Transport, GNCTD
PSUs:	**Mr. Sanjeev Gupta,** Executive Director-Corporate Strategy, IOCL
Industry:	**Mr. Anindya Chowdhury,** Country Manager-Energy Transition, Shell India **Mr. Awadhesh Kumar Jha,** ED, Fortum Charge & Drive India
Think Tank:	**Mr. Vinod Kala,** Founder & Director, Emergent Ventures India Pvt Ltd.
	Q & A
Points for Discussion	• Managed Charging for EV – Scoping V1G and V2G • Hydrogen Fuel Cells and Alternative Fuel Applications (eg. Ammonia Blending) • Meeting National Targets of Methanol/ Ethanol blending • Fuel Technology Options for Land and Marine Transportation • Comparative Technology cost economics • Enabling Framework of Policy and Technology support
6.30 pm	**TEA**

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CEO's Round Table Discussion with

Shri R. K. Singh

Hon'ble Union Minister for Power, New & Renewable Energy, Government of india

October 11, 2022 | 07.15 pm - 08.45 pm | The Imperial, Janpath, New Delhi

CEO's to Interact

- **Mr. Debasish U. Banerjee,** MD - Distribution, CESC Limited
- **Mr. Ashish Khanna,** CEO, TATA Power Renewable Energy Ltd
- **Mr. Pradeep Kheruka,** Chairman, Borosil Ltd
- **Mr. Sanjeev Seth,** Mananging Director, ITPCL
- **Mr. Manish Agarwal,** Director and CEO India Transmission Business, Sterlite Power Transmission Limited
- **Mr. Kishor Nair,** COO, Avaada Energy Pvt. Ltd.
- **Mr. Amal Sinha,** CEO, BSES Rajdhani
- **Mr. Vneet S. Jaain,** CEO, Adani Power
- **Mr. Kamal Kumar Agarwal,** MD, Jindal Power Limited
- **Mr. Prashant Jain,** Jt. MD & CEO, JSW Energy
- **Mr. Srivatsan Iyer,** CEO, Hero Future Energies Ltd.
- **Mr. Ivan Saha,** CEO, Vikram Solar
- **Mr. Kushagra Nandan,** Co-Founder & MD, SunSource Energy
- **Mr. Shashi Shekhar (IAS Retd.),** Vice Chairman, ACME Solar
- **Mr. Sharad Pungalia,** CEO, Amplus Solar
- **Mr. Vivek Bhide,** MD, John Cockerill India
- **Mr. Anindya Chowdhury,** Country Manager - Energy Transition, Shell India
- **Mr. Srini Viswanathan,** CEO, Vibrant Energy
- **Mr. Pinaki Bhattacharya,** Founder, MD & CEO, Amp Energy India
- **Mr. Umesh Chopra,** CEO, Jindal (JITF) Urban Infrastructure Ltd
- **Dr. Rajib K Mishra,** Additional Charge of CMD & Director (Marketing & Business Development), Power Trading Corporation
- **Dr. Harish Ahuja,** President, Waaree Energies Ltd.
- **Mr. Manish Narula,** Executive Vice President South Asia, Jinko Solar
- **Mr. Shailendra Bebortha,** Country Manager, Scatec
- **Mr. Sanjeev Mehra,** Director Markets & Govt Affairs, Statkraft
- **Mr. Amit Aggarwal,** Head Regulatory Affairs-Energy, Reliance
- **Ms. Paramita Sahoo,** Head - Regulatory and Policy Advocacy, Tata Power
- **Mr. K. R. Nair,** Director, Emergya Wind Turbines (P) Ltd.

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AGENDA: DAY 2
Wednesday | October 12, 2022

9.30 am – 10.00 am	**REGISTRATION & NETWORKING TEA**
10.00 am – 11.30 am	**SESSION 4: DECARBONISING HARD-TO-ABATE SECTORS**
Session Chairman :	**Mr. Rajnath Ram,** Advisor, NITI Aayog
Moderator:	**Mr. Ankit Hoshing,** Principal, Auctus Advisors
Govt Panel:	**Ms. Neha Verma, IFS,** Director, Ministry of Steel, Government of India
Industry:	
Petrochemicals:	**Mr. Mukesh Sharma,** General Manager-Corporate Strategy, IOCL **Mr. Kushal Kumar Banerjee,** Chief GM-BD, HPCL
Aluminum:	**Mr. Mitesh Pandya,** Chief Sustainability Officer-Aluminum Business, Vedanta Ltd.
Cement:	**Dr. K. V. Reddy,** Joint President - Corporate Head (Environment), Ultratech Cement
Buildings:	**Ms. Mili Majumdar,** MD, GBCI Inc and Sr. VP, USGBC
Technology Provider:	**Mr. Samrat Sengupta,** Vice President-BD, EKI Energy Services Ltd. **Mr. Deepak Gupta,** Sr. Vice President-Carbon Credit, Renew Power **Mr. Srini Viswanathan,** CEO, Vibrant Energy
	Q & A
Points for Discussion (Demand perspective)	• Decarbonising Pathways in Aluminium, Steel, Cement, Fertilisers, Petrochemicals (Refineries) and Building Sectors o Context of Scope 1,2 & 3 Emissions and Abatement Measures • Key Challenges to Scale Up o Policy Support o Path to Parity • Role of Voluntary Carbon Markets • Context of Cogeneration • CCUS

11.30 am – 12.45 pm	SESSION 5: INVESTMENT & FINANCING FOR ENERGY TRANSITION
Session Chair & Moderator:	**Mr. Vivek Kumar Dewangan, IAS,** CMD, Rural Electrification Corporation (REC)
PSU:	**Mr. Ravinder Singh Dhillon,** CMD, Power Finance Corporation (PFC)
International Orgs:	**Ms. Surbhi Goyal,** Sr. Energy Specialist, World Bank
Investment Fund:	**Mr. Mukul Modi,** Executive Vice President-Project Advisory & Structured Finance, SBI Capital **Ms. Maanavi Ahuja,** Principal Sustainable Energy Group, Canadian Pension Fund **Mr. Raghav Handa,** Director-Strategic Business Development & Govt. Affairs, HSBC **Mr. Aditya Sakhuja,** Assistant Vice President, Vibrant Energy Holdings
	Q & A
Points for Discussion:	• Role of Green Taxonomy vis-a vis ESG linked Green Finance • Unlocking Concessional Finance, including Blended Finance from DFIs • Formatting Credit Enhancement Risk Sharing Mechanisms – Partial Risk and First Loss Guarantees • Configuring Standardised Contracts and Evaluation Templates for Off-Balance Sheet Funding • Scoping Refinancing Options for Longer Loan Tenors and Low interest Regime • Aggregating decentralised / Small ticket projects into portfolios for financing
12.45 pm – 1.45 pm	**LUNCH**

1.45 pm – 3.15 pm	SESSION 6: DEMOCRATISING RENEWABLE ENERGY
Session Chairman:	**Ms. Anjuli Chandra,** Member, Punjab State Electricity Regulatory Commission
Session Moderator:	**Mr. Prabir Neogi,** Chief Advisor, Rp-Sg Group
Govt. Panel:	**Mr. Vijay Menghani,** Chief Engineer-Clean Energy and Energy Transition, CEA
PSU:	**Mr. Bikram Singh,** Executive Vice President-Marketing, PTC
Industry:	**Mr. Abhishek Ranjan,** SVP-Strategy, (Utilities & Retail), Renew Power **Ms. Ritu Lal,** Sr. Vice President & Head-Institutional Relations, Amplus solar **Mr. Jitendra Nalwaya,** Vice President, BSES Yamuna Power Ltd. **Mr. Prashant Choubey,** President, Avaada **Mr. Anil Kumar Kadam,** Director-Eco Struxure Cyber Security Business, Schneider Electric **Mr. Pinaki Bhattacharya,** Founder, MD & CEO, Amp Energy India **Mr. Saurabh Singhal,** Director, Auctus Advisors
	Q & A
Points for Discussion	• Enabling RTC RE Power – Economic Models, Role of VPPAs and CfD • Activating Distributed Platform – Emerging P2P and Transactive Energy Models • Storage Solutions – 'Front of the Meter' & 'Behind the Meter' Applications • New Distribution Model of 'Energy As A Service' • Enabling Policy Framework and Regulatory Pathways

3.15 pm – 4.45 pm	**SESSION 7: ENERGY SECURITY AND AFFORDABILITY**
Session Chairmen:	**Mr. R. P. Singh,** Chairman, Uttar Pradesh Electricity Regulatory Commission **Mr. B. N. Sharma,** Chairman, Rajasthan Electricity Regulatory Commission
Session Moderator:	**Mr. Prabir Neogi,** Chief Advisor, Rp-Sg Group
Govt. Panel:	**Mr. Anand Kumar,** Professor, IIT Gandhinagar and Former Chairman, Gujarat Electricity Regulatory Commission
Industry:	**Mr. Sanjeev Seth,** MD, ITPCL **Mr. Puneet Goel,** COO, Integrum Energy **Mr. Siddharth Malik,** Head-Energy Transition, Azure Power **Mr. Manish Karna,** General Manager, Adani Green Energy
	Q & A
Points for Discussion:	• Configuring Trajectory of Cost Recovery Mechanism under Energy Transition Plans o Tariff Rebalancing and Rationalisation o Formatting Tariff Affordability Ratios • Peaking Power Balancing, ToD/ToU Tariff Design and Critical Peak Pricing • Rebalancing Supply chains o Indeginising Technology – ACC Batteries, Electrolysers o Stepping up Domestic Manufacturing – Solar Cells and Modules • Reducing LCOE – Factor, Regulatory and Social Costs of Projects • Rooftop solar / BESS as an affordable source – Access to Clean Energy
4.45 pm	**CLOSE**
4.50 pm	**TEA**

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DAY 1

October 11, 2022

Inaugural Session

CHIEF GUEST

Shri Bhagwanth Khuba
Hon'ble Minister of State for
New & Renewable Energy
Government of India

GUEST OF HONOUR

Dr. Sudhanshu Trivedi
Member Parliament
Rajya Sabha & Member
Standing Committee on Energy

Mr. Sumant Sinha
President ASSOCHAM
& Chairman and CEO
Renew Power

Mr. Ajay Singh
Sr. Vice President, ASSOCHAM &
Chairman & Managing Director
SpiceJet

Mr. Deepak Sood
Secretary General
ASSOCHAM

Mr. Debasish Banerjee
Managing Director - Distribution
CESC Limited

Mr. Ashish Khanna
CEO, Tata Power Renewable
Energy Limited

Mr. Pradeep Kheruka
Executive Chairman
Borosil Group

Mr. Anindya Chaowdhury
Country Manager
Energy Transition
Shell India

State Contribution and Targets towards Green Economy

CHIEF GUEST

Shri Murgesh R. Nirani
Hon'ble Minister for
Large and Medium Industries
Govt of Karnataka

GUESTS OF HONOUR

Dr. E.V. Ramana Reddy, IAS
Addl. Chief Secretary
Deptt. of Commerce & Industries
Govt. of Karnataka

Shri Dinesh Waghmare, IAS
Principal Secretary to the
Govt of Maharashtra
Department of Energy

Smt. Gunjan Krishna, IAS
Commissioner
Deptt. of Commerce
& Industries
Govt. of Karnataka

Mr K. P. Rudrappaiah
MD, Karnataka Renewable
Energy Development Ltd.
(KREDL)

Mr. Sumant Sinha
President ASSOCHAM
& Chairman and CEO
Renew Power

Mr. Kishor Nair
COO
Avaada Energy

Mr. Sanjeev Seth
Co-Chairman
National Council on Power
& Managing Director, ITPCL

International Energy Summit

Transitioning Towards Green Economy

October 11, 2022

Session 1: Emerging Technology Roadmap

Mr. A K Tripathi
Advisor, MNRE
Govt of India

Mr. Ashish Khanna
CEO, Tata Power
Renewable Energy Limited

Mr. Vish Ganti
VP-Product and GM
AutoGrid India

Mr. Gaurav Verma
DGM - Business Development
& Branch Head, M N Dastur

Mr. Atul Arya
Head-Energy Storage
Systems, Panasonic Life Solution India

Mr. Vivek Bhide
Managing Director
John Cockerill India

Mr. Arijit Mitra
Head Distribution C&I
Longi Solar India

Mr. Alok Nigam
Sr. Vice President
RE, Serentica

ABOUT THE SESSION

Background

Energy transition has so far largely been led by solar and wind generation technologies. These technologies continue to advance, with focus on higher efficiency – advanced silicon based technology or non silicon technologies such as perovskites for solar, higher and large capacity turbine and offshore technology for wind, small modular reactors for nuclear power, and so on.

However, there is an increasing need for enabling technologies to support capacity addition of cleaner sources as they will face technical and operational constraints with large-scale deployment. While storage technologies are critical to manage diurnal variations and intermittency in RE generation, mechanisms such as green H2 / ammonia would help RE replace fossil-based energy.

Technologies for carbon emission reduction including emission control or carbon capture mechanisms would also be important.

Further, there is an increasing need for digital tech and associated hardware systems that can enable efficient utilization of available technologies and mitigate associated risks.
The above technology dimensions, some of which are completely new and currently unviable in the Indian context, need to be brought into the mainstream and developed strategically.

Discussion Points

- How new solar technologies (hetero junction, perovskites), offshore wind, and nuclear technologies (SMR) can enhance feasibility of clean energy adoption.
- While electric storage is currently expensive, does technology outlook indicate commercial viability and possibility of becoming the go-to technology for RE integration.
- While other storage technologies are available, some are more feasible than electric storage while others are worse off. Further, scalability of such technologies is also a concern
- Green Hydrogen is currently significantly expensive than grey hydrogen and is a huge deterrent for the transition. An ideal roadmap and suitable interventions would be required to ensure adoption of green H2 / Ammonia over short and long term.
- Technologies for fixing the already emitted carbon - CCUS (Carbon capture, utilisation, and storage) can help reduce high CO2 concentrations in atmosphere.
- Technologies in grid (such as grid-edge or smart grids) can ensure better assimilation of renewables through robust demand-supply management. This would include integration of distributed energy resources for improved and affordable access.

International Energy Summit

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Session 2: Grid Modernization & Resilience - Integrate RE at Scale

Mr. Ghanshyam Prasad
Chairman
CEA

Mr. S K Soonee
Former CMD
POSOCO

Dr Rajib K Mishra
Director (Marketing & Business Development)
Addl Charge of CMD, Power Trading Corporation (PTC)

Mr. P C Garg
COO CTU
PGCIL

Mr. Praveen Gupta
Chief Engineer
Integrated Resource Planning, CEA

Mr. Balaji Sivan
Director
Sterlite Transmission

Mr. Abhishek Ranjan
SVP – Strategy
(Utilities & Retail), Renew Power

Mr. Sameer Ganju
Associate VP
Adani Transmission Ltd.

Dr. Ashutosh Natraj
Founder and CEO
Vidrona

ABOUT THE SESSION

Background

India has ambitious renewable energy targets, aiming to have 50% of the cumulative electric capacity installed from non-fossil fuel energy sources by 2030. However, RE is associated with variations, uncertainties, and intermittency, posing a challenge to grid balancing and leads to issues such as curtailment.

Lower load factor of RE sources also results in underutilization of grid infrastructure. These challenges mean that effective integration of renewable energy would require the grid to be more resilient, flexible, and modern.

While modernization of the grid would entail use of better technology, effective grid management would require adequate policy measures and suitable regulatory regime. Policy interventions are required to ensure that the capacity of infrastructure, both in terms of grid system as well as generation sources for grid balancing, is adequate.

Further, effective market mechanisms are critical to provide avenues to participants for managing the grid. This would include developing the balancing markets and providing unrestricted access to existing and new mechanisms.

Discussion Points

- Grid modernization would be critical to ensure a more robust and efficient grid. However, the scope and extent of modernization (smart grids, grid scale storage, IoT) required needs to be determined.
- Resource adequacy needs to be established and sufficient advance planning is required to ensure development of grid infrastructure including green corridors, and the spinning reserve (with source mix) required to manage the grid.
- While ancillary markets are envisaged, an efficient market design would be critical to ensure that effective balancing is achieved with minimum cost to the system
- Effective coordination between TSOs and DSOs would be important to realise the most value from services potentially provided by DERs and manage the grid ‘smartly’.
- Strong policy and regulatory reforms are also required to avoid the legacy hurdles to effective grid management. This would include coordination in grid planning and operation, regulations on scheduling and forecasting, power evacuation guidelines, increasing private investment and competition in the transmission and distribution sectors, and so on.

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Session 3: Efficient and Low Carbon Mobility

Mr. Sudhendu Sinha
Advisor (Infra Connectivity & Electric Mobility) NITI Aayog

Mr. Sanjeev Gupta
Executive Director (Corporate Strategy) IOCL

Mr. Ashish Kundra
Principal Secretary and Commissioner of Transport, GNCTD

Ms. Archana Chauhan
(Head e-Buses Vertical) CESL (EESL Subsidiary)

Mr. Anindya Chowdhury
Country Manager Energy Transition Shell India

Mr. Awadhesh Kumar Jha
ED, Fortum Charge & Drive India

Mr. Vinod Kala
Founder and Director Emergent Ventures India Pvt Ltd.

ABOUT THE SESSION

Background

Transport sector in India accounts for about a third of petroleum consumption and ~15% of energy related CO2 emissions. Thus, energy transition will necessarily require adoption of efficient and low carbon mobility, and would require concerted efforts in two complementary areas – vehicles and fuel.

India has already acknowledged this need and set a target of EV sales penetration of 30% of private cars, 70% of commercial cars, 40% of buses and 80% of two and three-wheelers by 2030. Achieving this target would require resolving challenges around supply, availability of charging infrastructure, range anxiety, as well as high upfront cost.

Advancement in battery technologies would be key to solve for most of these problems. Further, efficient technology and market solutions would be required as higher proliferation of EVs would alter the electricity demand profile.

Apart from EV, increased adoption of alternative green fuels and blends will form a critical part of the transport sector's green transition journey. This can be further supported by exploration and development of new fuel technologies for land-based and non-land transportation systems.

Discussion Points

- Specific policy support required to address the gaps in EV adoption – interventions across the value chain and stakeholders (institutional setup, OEMs, network operators, EVSE and battery charging / swapping, consumers, financing, and other support mechanisms
- New technologies in EV battery including hydrogen fuel cells and smart charging trends such as V1G (one-direction charging), V2G/V2X (bi-directional charging), etc. need to be evaluated in the Indian context. Cost economics of alternative technologies and mechanisms need to be established
- Suitable business models to be devised for charging operations including grid ancillary support, and other services
- Blending of ethanol / methanol (India has set a target of 20% ethanol blending by 2030) is critical to facilitate transition in the short to medium term. However, considering the current challenges, specific measures required to achieve these targets need to be identified
- Alternate fuels for land and marine transportation to be identified with a view to move away from polluting heavy fuels currently used, and mechanisms for such transition to be developed.

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DAY 2

October 12, 2022

Session 4: Decarbonising Hard-to-Abate Sectors

Mr. Rajnath Ram
Advisor
NITI Aayog

Ms. Neha Verma, IFS
Director
Ministry of Steel

Mr. Mukesh Sharma
General Manager
Corporate Strategy, IOCL

Mr. Kushal Kumar Banerjee
Chief GM-BD
HPCL

Mr. Ankit Hoshing
Principal
Auctus Advisors

Mr. Mitesh Pandya
Chief Sustainability Officer
Aluminum Business
Vedanta Ltd.

Dr. K. V. Reddy
Joint President - Corporate Head
(Environment), Ultratech Cement

Ms. Mili Majumdar
Managing Director
GBCI Inc and
Sr. Vice President, USGBC

Mr. Samrat Sengupta
Vice President
(Business Development)
EKI Energy Services Ltd.

Mr. Deepak Gupta
Sr. Vice President
Carbon Credit
Renew Power

Mr. Srini Viswanathan
CEO
Vibrant Energy

ABOUT THE SESSION

Background

Decarbonization efforts face different specific challenges across industries, and ease of transition depends on availability and viability of alternative technologies. Several sector such as Metals, Cement, Fertilizers and Petrochemicals are energy intensive and dependent on fossil fuels as energy source based on viable technologies available, and are 'hard-to-abate' from sustainability perspective (large part of industries contribution of 25% of overall CO2 emissions).

Decarbonization of such sectors would require a multi-pronged approach involved development of more efficient and alternate technologies, transition to cleaner energy sources and energy recovery mechanisms. While sourcing electricity from cleaner sources could be achievable, many of the industrial processes involved are highly integrated and complex, making technology identification and implementation for higher efficiency and use of alternate fuels for processes, complicated and expensive.

These energy intensive industries also have significant energy wastage / loss, and mechanisms to minimize energy leakage can significantly reduce the carbon footprint.

Discussion Points

- Each industry would require its own specific approach to decarbonization. Different measures would be required to abate Scope 1/2/3 emissions (with Scope 2 and 3 providing for more uniform mechanisms). Key strategies for decarbonization for each sector need to be developed
- Technical and commercial feasibility of technologies for use if alternate fuels including path to parity for large scale deployment of these technologies
- Processes and mechanisms for more efficient use of materials through recycling, reusing and reducing
- Technologies to achieve efficiency in terms of energy use, supported by energy recycling through heat capture, cogeneration, etc and carbon capture technologies
- Feasibility of leveraging carbon markets for processes that cannot be abated by technical measures need to established and suitable mechanism to be devised
- Policy support required to overcome the challenges of cost and accessibility associated with identified measures

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Session 5: Investment & Financing for Energy Transition

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ABOUT THE SESSION

Background

India has consistently placed high-level policy targets as part of its energy transition mandate. However, the quantum of capital required to realise these targets is enormous, which is not easy for the Indian financing and investing sector to support.

Bank debt has been the primary source of domestic currency capital for projects. However, due to competing demands on this limited pool of capital, adequacy and affordability of the same is constrained.

Most investments envisaged for energy transition require low-cost capital given the challenges with commercial viability of these technologies/mechanisms. Thus, availability of large amount of debt capital on concessional terms (lower interest rate and higher tenor), and equity financing at lower expected returns would accelerate the transition, helping implement interventions which are otherwise unviable.

Innovative financing mechanisms to ensure easy access to capital and sovereign support to enhance bankability of the projects would be important to ensure that all stakeholders run these initiatives in a decentralized manner rather than being caught in procedural hassles of large-scale programs. Suitable policy support would be required to enable the above-mentioned mechanisms towards the transition.

Discussion Points

- We need a green taxonomy framework to standardize the notion of green finance and help determine initiatives that would qualify under energy transition/sustainability would help stakeholder avail financing and undertake innovative projects
- An enabling policy framework and support system to make the sector more conducive for investments. Initiatives such as green parks, provision of partial risk guarantees, etc. can help alleviate investor concerns and improve access to finance. Standardization and templatization of projects and financing mechanisms could facilitate access to capital.
- DFIs can use tools such as Blended Concessional Finance to help mobilize private investment in pioneering projects. Mechanisms for securing concessional finance from DFIs and making them accessible to the market need to be established
- Strategies for making small ticket projects attractive for affordable finance (aggregation into larger portfolios) need to be explored
- Further, bond markets need to be deepened along the lines of international markets, as they could be a better fit for the sustainability sector than bank loans.

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Session 6: Democratising Renewable Energy

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Mr. Pinaki Bhattacharya
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ABOUT THE SESSION

Background

As development of clean energy sources and adequate grid infrastructure enable the supply side for energy transition, ensuring demand for additional clean energy is critical to achieve the transition. While DISCOMs being the largest power procurers lead sourcing and absorption of clean energy, large consumers are actively seeking opportunities to adopt RE sources, largely driven by their sustainability / ESG goals.

Consumers can accelerate the energy transition as they look to absorb much higher proportion of renewables as compared to DISCOMs purchases / RPO targets. Further, DISCOMs have been increasingly struggling with absorbing renewables as its proportion increases. Hence, democratization of renewable energy would be critical to move towards a cleaner energy mix at the national level.

However, consumers have been finding it challenging to procure and absorb RE owing to various difficulties – technical (infirm and intermittent nature of RE), procedural (restrictions and complexities with open access) and commercial (high open access costs). Hence, solutions / interventions across each of these dimensions need to be explored.

Discussion Points

- Technical challenge would likely need solutions such as energy storage that can absorb the intermittency and variability in RE generation.
- Storage can be 'front of the meter' or 'behind the meter' depending on the supply vs demand construct
- Commercial / market constructs need to further evolved – mechanisms such as Virtual PPAs with Contracts for Difference can help transact RE while benefiting from market efficiencies.
- The above issues can be effectively addressed by aggregators who can build scalable solutions to provide RE power on RTC basis / aligned with consumer profiles, and who have the right capabilities that are otherwise lacking with individual consumers.
- This would further evolve the 'Energy as a Service' paradigm and can be adopted by both aggregators and the DISCOMs alike.
- However, implementation challenges need to be resolved through active policy and regulatory interventions – simplifying open access rules, removing procedural hindrances, and reducing open access costs (cross subsidy and other surcharges) to ensure commercially viable adoption of RE power across the country.

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Session 7: Energy Security and Affordability

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ABOUT THE SESSION

Background

Transition to clean energy sources will require significant cost and investment into new technologies, additional infrastructure and building new supply chains. Transition would also require sufficient capacity development with control over value chain to ensure self-reliance and uncompromised energy security. The long road to transition would mean that these costs will be borne over considerable period of time.

For sustainability of this journey, it is critical that suitable cost recovery mechanisms form a part of the transition plans. These plans should also acknowledge the disruptions caused and resultant impact on our twin objectives of energy security and affordability, and provide for appropriate mechanisms to mitigate associated risks.

Costs to the system should be shared between market participants rather than trickling down to the energy consumers. Increased costs, especially for industrial consumers, can be a huge deterrent to economic growth. Burdening DISCOMs is also not prudent given their compromised financial health. Thus, identifying elements in the value chain that can absorb additional costs would be critical.

At the same time, we need to focus on developing domestic capacity and access to resources to ensure control over the transition journey.

Discussion Points

- There should be a strong focus on ensuring self-reliance and minimizing the additional cost to the system by identifying and prioritizing low cost pathways to transition – use cheaper sources of power including DERs, indigenize technologies (storage, electrolyser, solar, etc).
- Tariff structure needs to be rebalanced and rationalized so that cost if not duly loaded on specific set of consumers
- New pricing concepts such as ToD / ToU need to be brought in to provide avenues for distributing additional costs.
- Innovative mechanisms for balancing peaking power need to be developed, given the diurnal / seasonal variability associated with renewable energy sources.
- Mechanisms to bring down Levelized Cost of Energy such as regulatory provisions, and building overall costs including social costs can help better apportion and suitably absorb additional costs of energy transition.

About ASSOCHAM

The Associated Chambers of Commerce & Industry of India (ASSOCHAM) is the country's oldest and most agile apex chamber, always evolving with the times ever since it was set up in 1920. The ASSOCHAM reaches out to and serves over 4.5 lakh members from trade, industry and professional services through over 400 associations, federations and regional chambers spread across the length and breadth of the country.

The ASSOCHAM was created to support nation-building, and this spirit continues to drive our initiatives to date. As India's oldest and respectable Chamber, ASSOCHAM has a rich legacy, which, coupled with our focus towards socio-economic growth will help us play a crucial role in India's next phase of growth. The Chamber's legacy has strengthened further, as we lead various Government initiatives, drive policy advocacy and support the industry to help enhance India's competitiveness and global positioning. To meet the aspirations of the New India, we at ASSOCHAM would continue to strive for excellence and creating knowledge, which would help India achieve unparalleled success in the coming years.

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