UK Government

iDeeksha

Bureau of Energy Efficiency
Ministry of Power, Government of India

# ASPIRE Programme

Accelerating Smart Power & Renewable Energy in India

# LAUNCH EVENT FOR IDEEKSHA

INDUSTRIAL DECARBONIZATION AND ENERGY EFFICIENCY KNOWLEDGE SHARING PLATFORM

DURING 21ST FOUNDATION DAY EVENT OF BUREAU OF ENERGY EFFICIENCY

# SUMMARY REPORT

Jointly organised by:

Bureau of Energy Efficiency and ASPIRE PROGRAMME

# CONTENTS


| | |
|---|---|
| **Abbreviations** | **3** |
| **Background** | **4** |
| **Objectives** | **6** |
| **Highlights** | **8** |
| **OPENING SESSION** | **10** |
| **TECHNICAL SESSION** | **13** |
| **INAUGURAL SESSION**<br>• LAUNCH OF IDEEKSHA PLATFORM<br>• RELEASE OF IDEEKSHA NEWSLETTER | **15** |
| **KEYNOTE ADDRESS AND VOTE OF THANKS** | **18** |
| **ANNEXURE I**<br>• Agenda for 21st Foundation Day of BEE and "Decade of PAT Scheme" | **15** |
| **ANNEXURE II**<br>• Brochure for IDEEKSHA Platform | **17** |
| **ANNEXURE III**<br>• IDEEKSHA Newsletter | **19** |
| **ANNEXURE IV**<br>• ATTENDANCE SHEET | **20** |

# ABBREVIATIONS

| | |
|---|---|
| ASPIRE | Accelerating Smart Power and Renewable Energy in India |
| BEE | Bureau of Energy Efficiency |
| DCs | Designated Consumers |
| DEEP | Demonstration of Energy Efficiency Project |
| EE | Energy Efficiency |
| EESL | Energy Efficiency Services Limited |
| EnMS | Energy Management System |
| ESCerts | Energy Saving Certificates |
| FCDO | Foreign Commonwealth and Development Office, Government of UK |
| GESI | Gender Equality Social Inclusion |
| GHG | Greenhouse Gases |
| IEED | Industrial Energy Efficiency and Decarbonisation |
| IDEEKSHA | Industrial Decarbonisation and Energy Efficiency Knowledge Sharing Platform |
| KEP | Knowledge Exchange Platform |
| MT | Metric Tonnes |
| NMEEE | National Mission on Enhanced Energy Efficiency |
| PAT | Perform Achieve and Trade |
| RE | Renewable Energy |
| UNNATEE | Unlocking National Energy Efficiency Potential |

# BACKGROUND

India has demonstrated climate leadership and a firm commitment for achieving the clean energy transition. At the COP27 in Egypt, India submitted its Long-Term Low Emissions Growth Strategy indicating low carbon transition pathways in key economic sectors. Earlier, at COP26 in Glasgow, the Prime Minister of India announced the five nectar elements or 'Panchamrit' of India's climate action to achieve net-zero target by 2070. In August 2022, India updated its Nationally Determined Contributions (NDCs) and has embarked on far-reaching new initiatives in renewable energy, e-mobility, ethanol blended fuels, and green hydrogen as an alternate energy source.

Industrial sector (including MSMEs) offers potential of upto ~55% of the total energy savings and ~42% of total emissions reduction in India by 2031, as per Bureau of Energy Efficiency's (BEE) "Unlocking National Energy Efficiency Potential" (UNNATEE) report, 2019. Thus, in order to enable our country to achieve its target to become net-zero by 2070. It is essential to decarbonise the industrial sectors, particularly, the 'hard to abate sectors such as Cement, Iron & Steel, Aluminium, Chemicals etc.

With seven cycles of Perform, Achieve and Trade (PAT) scheme rolled out by the BEE, large energy intensive industries have adopted various low hanging energy efficiency (EE) measures to achieve energy saving targets. Now, the next set of opportunities for incremental savings and decarbonisation would require adoption of emerging low carbon technologies and greater sharing of best practices and knowledge on industrial energy efficiency and decarbonisation (IEED).

UK has been playing a very active role in promoting energy efficiency and decarbonisation across industrial sectors. Technology providers from the UK offer new and innovative low-carbon technologies and industry best practices which can aid energy intensive industries in India in reducing their energy and carbon consumption, thus contributing to India's efforts to achieve its climate goals.

In view of the above, to enable industries in their efforts to decarbonise, the 'IDEEKSHA – Industrial Decarbonisation and Energy Efficiency Knowledge Sharing Platform' has been developed under the UK-India bilateral programme - Accelerating Smart Power and Renewable Energy in India (ASPIRE).[1] The IDEEKSHA would be a one-stop shop for all IEED needs of Indian energy intensive industries including database of proven and emerging technologies and their providers available in India and globally. The IDEEKSHA would facilitate exchange of knowledge and information to enhance peer-to-peer learning, access to best practices across sectors, energy management tools, technologies, links to data sources and knowledge repositories, and enable knowledge and commercial partnerships.

To commemorate BEE's 21st Foundation Day and a Decade of PAT Scheme, the BEE and FCDO jointly organised an event on March 01, 2023. During the event, the IDEEKSHA platform was launched by Mr. R.K. Singh, Hon'ble Cabinet Minister for Power and New and Renewable Energy, Government of India. Further, the first issue of IDEEKSHA Newsletter was also released. The Newsletter showcased case studies on new & emerging low-carbon technologies and industry best practices from the UK. In addition, amongst the various sessions, a dedicated technical session for UK based technology and solution providers was organised to present their IEED offerings.

The detailed agenda for the event is provided as **Annexure I**

[1]ASPIRE is a bilateral program implemented by Foreign Commonwealth and Development Office, Government of UK in association with Ministry of Power, Government of India. KPMG is the lead delivery partner for the ASPIRE programme. Idam Infrastructure Advisory Private Limited (India) and Carbon Trust (UK) are the key consortium members.

# HIGHLIGHTS

- Launch of IDEEKSHA platform and release of IDEEKSHA Brochure and Newsletter by Mr. R.K. Singh, Hon'ble Cabinet Minister of Power and New & Renewable Energy
- Active participation of senior officials including directors, senior executives and key officials from BEE, EESL, energy intensive industries from **13** sectors, various multilateral & bilateral agencies, research institutions
- **160+** participants from India and UK (**20+** Women participants)
- **5** speakers (**2 women** speakers) from **UK** based IEED technology and solution providers

An official press release by the Ministry of Power, Government of India regarding the event and highlighting launch of IDEEKSHA platform was published on the website of Press Information Bureau, Government of India.[2]

Further, the event and launch of IDEEKSHA platform was extensively covered in various media publications.[3]

This report provides summary of the discussions and key takeaways from the various sessions held during the event

[2] https://pib.gov.in/PressReleasePage.aspx?PRID=1903522)

[3] (a) https://energy.economictimes.indiatimes.com/news/power/r-k-singh-launches-voluntary-star-labelling-programme-for-multi-door-fridge-fans-induction-hobs/98350498
(b) https://timesofindia.indiatimes.com/r-k-singh-launches-voluntary-star-labelling-programme-for-multi-door-fridge-fans-induction-hobs/articleshow/98342658.cms?from=mdr

# OPENING SESSION


(L-R) Dr. Ashok Kumar; Mr. Vishal Kapoor; Mr. Abhay Bakre; Ms. Libby Green

## SPEAKERS

**Mr. Abhay Bakre**
Director General, BEE

**Mr. Vishal Kapoor**
CEO, EESL

**Dr. Ashok Kumar**
Deputy Director General, BEE

**Ms. Libby Green**
Head of Climate & Energy, FCDO, British High Commission

# KEY TAKEAWAYS

- Climate change is an existential challenge for our planet. Increasing number of extreme weather events around the world highlight the risks to our livelihoods, jobs and the natural environment
- ~200 countries have signed the Glasgow Climate Pact which strengthens resilience to climate change, to cut greenhouse gas emissions and to provide finance for the green transition
- At Glasgow, Government of India proposed ambitious new targets for 2030 and pledged to have net zero emissions by 2070
- Industries are one of the most significant contributors to emissions in India – around 25% of total emissions, second only to power generation
- At COP 27 in Egypt, the Government of India also submitted its Long-Term Low Emission Growth Strategy indicating low carbon transition pathways in key economic sectors.
- India's Long-Term Strategy highlights the opportunities to improve energy and resource efficiency, material efficiency and recycling, to strengthen the circular economy and to promote emerging technologies such as Green Hydrogen and Carbon Capture and Storage technologies
- Energy efficiency will have a major role to play with potential to unlock ~GBP 80 Billion (or INR 8 Lakh Crores) worth of market
- To enable industries in their efforts to decarbonise, 'IDEEKSHA – Industrial Decarbonisation and Energy Efficiency Knowledge Sharing Platform' has been developed by the Government of UK in collaboration with BEE, Ministry of Power, Government of India, under the ASPIRE programme
- The IDEEKSHA platform would act as a one-stop shop for all needs of Indian energy intensive industries including database of proven and emerging technologies and their providers available globally
- Energy Efficiency Services Ltd. (EESL) has implemented new and innovative business models targeting different consumer segments to address the technical and financial barriers and to accelerate implementation of EE measures
- EESL in association with BEE is implementing "Demonstration of EE Project (DEEP) to demonstrate EE technologies and deploy large scale implementation of energy efficiency measures in the PAT industries

# TECHNICAL SESSION


(L-R) Mr. Anand Vardhan; Mr. Niraj Singh; Ms. Radhika Tomar; Dr. Ashok Kumar; Dr. Sarah Connolly; Ms. Dee Roche

## SPEAKERS

**Ms. Radhika Tomar**

Head – Energy Sector Reform, British High Commission


**Dr. Sarah Connolly**

Innovation Lead, Innovate UK

**Ms. Dee Roche**

Chief Marketing Officer, Alchemie Technology, UK


**Mr. Mark Hardiman**

CEO, LAT Water, UK

**Mr. Niraj Singh**

Sales Manager, CarbonClean, UK


**Mr. Anand Vardhan**

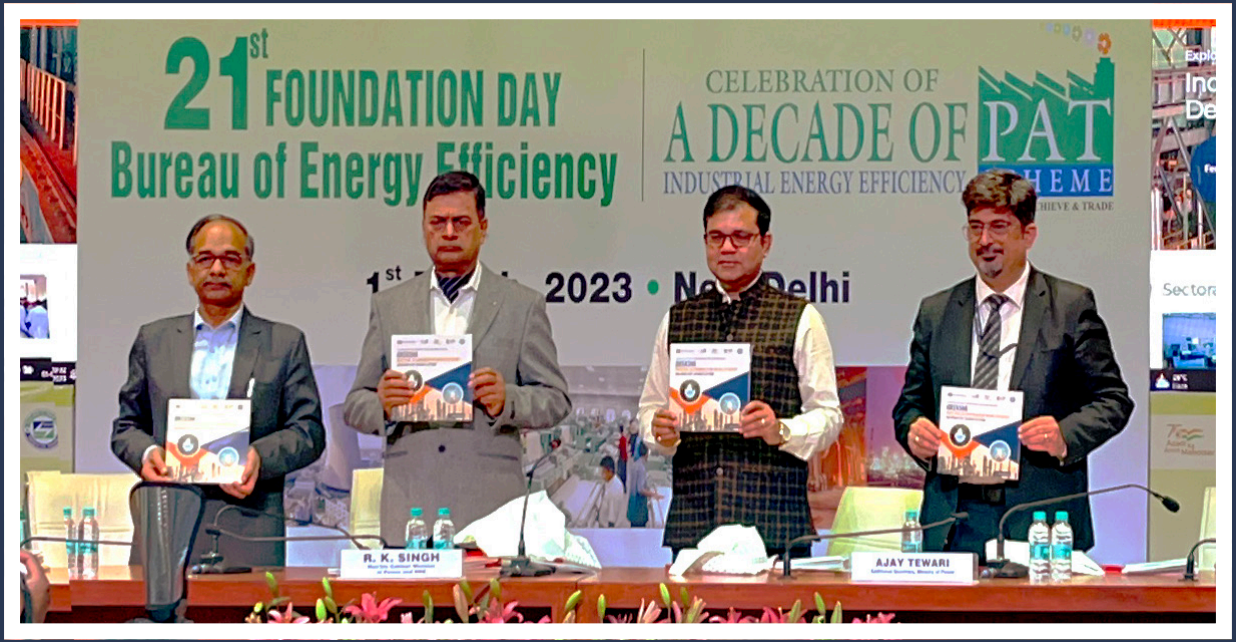
Director, Hitech Facility Engineers, (India partner of Centrica, UK)

# KEY TAKEAWAYS

- Alchemie Technology's two low-carbon offerings – Endeavour (Waterless, low-energy textile dyeing) and Novera (Energy saving non-contact finishing) with potential to save ~95% in water and ~85% in energy in fiber dyeing with a payback period of up to 2 years
- Centrica, UK offers patented IoT 4.0 real-time machine-level energy management solution driven by wireless sensors and advanced analytics technology
- LAT Water, UK has developed unique solutions for effluent water treatment using waste heat as a free energy source, with applications in a wide range of industries like agriculture & anaerobic digestion, food & drinks, metals & mining, waste management, chemicals & pharmaceuticals, etc.
- CarbonClean, UK presented their patented Carbon Capture Technology using CDRMax™ process which allows to capture more carbon at the lowest cost, all while meeting strict environmental criteria. The CDRMax™ process captures carbon dioxide from the industrial flue gases or off-gases emitted from power plants, boilers, kilns and chemical facilities. The process produces carbon dioxide with purities ranging from 95% to 99%, which can then be sold, re-used or sequestered
- Innovate UK highlighted TFI challenge and the need and importance of producing carbon neutral products for a sustainable net zero way of living. They also highlighted key areas of collaboration for UK – India foundation industries (glass, metals, chemical, paper, ceramic, and cement sectors):
- Use more process waste as an added value by-product, and provide process efficiency improvements on existing plants
- Energy efficiency through advanced refractory technologies, process & burner design efficiency, reheating kilns and furnaces to maximise on-time power versus dead time.
- Developing more efficient furnaces, burners, boilers and waste heat recovery systems that can be retrofitted to existing plants and equipment

# INAUGURAL SESSION
## LAUNCH OF IDEEKSHA PLATFORM


Launch of IDEEKSHA platform by Mr. R.K. Singh, Hon'ble Cabinet Minister of Power and New & Renewable Energy




Release of IDEEKSHA Brochure by Mr. R.K. Singh, Hon'ble Cabinet Minister of Power and New & Renewable Energy, Mr. Alok Kumar, Secretary, MoP, Mr. Ajay Tewari, Additional Secretary, MoP, Mr. Vishal Kapoor, CEO, EESL

# SESSION SUMMARY

1. Mr. R. K. Singh, Hon'ble Cabinet Minister (Power, New and Renewable Energy) highlighted that although India's per capita emissions are about a third of the world average, we had pledged in 2015 to reduce our emissions intensity by 33% by 2030 and we shall achieve that goal well before 2030

2. The Honb'e Cabinet Minister launched the IDEEKSHA platform and its brochure developed under the UK-India bilateral programme – ASPIRE, in collaboration with BEE

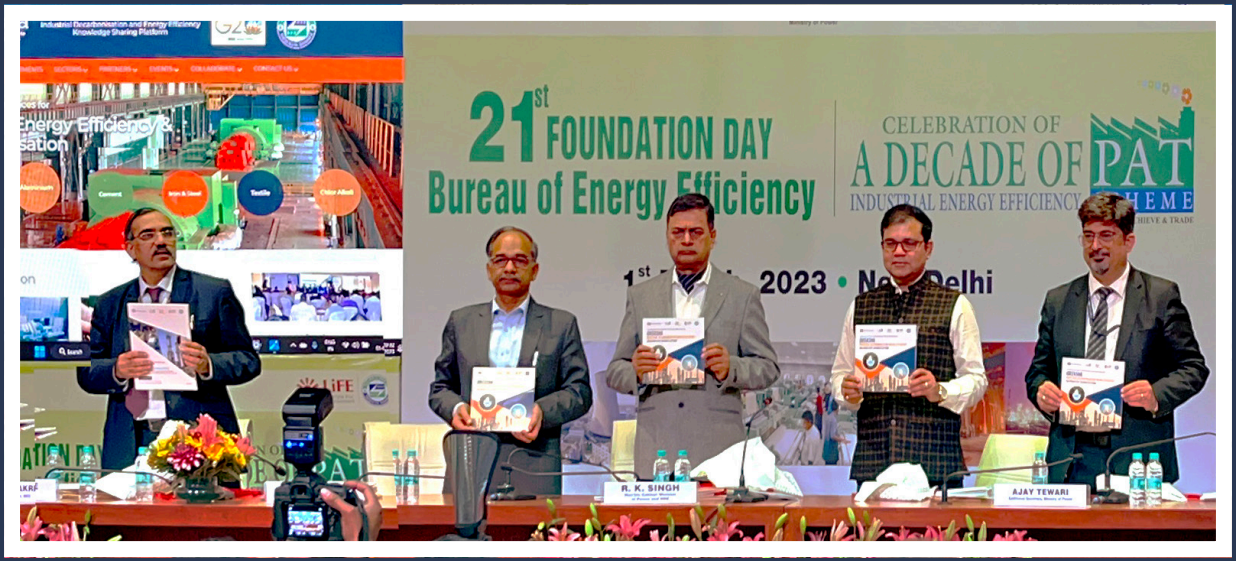
3. IDEEKSHA platform will serve as one stop shop for all IEED needs of Indian energy intensive industries and aims to facilitate exchange of information, knowledge and experience/best practices related to IEED among wide gamut of stakeholders such as industries, industrial associations, technology and service providers, research institutions etc.

4. IDEESKHA platform will initially cover eight energy intensive sectors – Aluminium, Textile, Cement, Iron & Steel, Pulp & Paper, Refinery, Chlor-Alkali and Fertiliser. The platform can be accessed at https://ideeksha.in. A copy of the brochure for IDEEKSHA Platform has been attached as Annexure I

5. The Hon'ble Minister launched the Voluntary Star Labelling Programme for multi-door refrigerators, table and wall mounted fans, pedestal fans and induction hobs

6. The 40 top performer designated consumer (DCs) industries from 11 industrial sectors under PAT Cycle II were felicitated

# RELEASE OF IDEEKSHA NEWSLETTER




Release of IDEEKSHA Brochure by Mr. R.K. Singh, Hon'ble Cabinet Minister of Power and New & Renewable Energy, Mr. Alok Kumar, Secretary, MoP, Mr. Ajay Tewari, Additional Secretary, MoP, Mr. Vishal Kapoor, CEO, EESL

## SESSION SUMMARY

- Mr. R. K. Singh, Hon'ble Cabinet Minister (Power, New and Renewable Energy) released the first IDEEKSHA Newsletter developed under the UK-India bilateral programme – ASPIRE, in collaboration with BEE
- The first Newsletter covers case studies on new and innovative IEED technologies from the UK as well as best practices implemented by UK industries which offer potential for adoption by Indian industries to accelerate decarbonisation in sectors such as Pulp and Paper, Aluminium, Cement, Textile.
    - **Case Studies on global IEED technologies**
        - Textile Sector: UK's smart waterless dyeing and non-contact finishing technology
        - Cement Sector: Low carbon multi-component cements for UK concrete Applications
        - Industry 4.0 wireless energy solutions for net-zero and energy productivity from UK
        - Pulp & Paper Sector: Novel dewatering solutions within corrugated case medium manufacture
    - **International best practices in IEED** – Global Aluminium Sector: Industry best practices
    - **Expert views on Emerging Low Carbon IEED Technologies**
        - "Importance of Inert Anode technology for the Aluminium Sector" – by Dr. Anupam Agnihotri, Director, JNARDC, Nagpur
- A copy of the iDeeksha Newsletter has been attached as **Annexure II**

# KEYNOTE ADDRESS AND VOTE OF THANKS

## SPEAKERS

**Mr. R.K. Singh,**
Hon'ble Cabinet Minister of Power and New & Renewable Energy

**Mr. Alok Kumar,**
Secretary (Power)

**Mr. Abhay Bakre,**
Director General, BEE

**Dr. Ashok Kumar,**
Deputy Director General, BEE

## KEY TAKEAWAYS

- India has demonstrated climate leadership and a firm commitment for achieving the clean energy transition
- As per the updated NDC, India now stands committed to reduce emissions intensity of its GDP by 45% by 2030, from 2005 level and achieve 50% of installed electric power capacity from non-fossil fuel-based energy resources by 2030
- Enhancing energy efficiency and decarbonisation of industrial sectors, particularly, the 'hard to abate sectors', is crucial to enable the country in its energy transition and to achieve its sustainability/net-zero targets
- On 21st foundation day, BEE decided to celebrate the success of its flagship scheme Perform, Achieve and Trade (PAT) scheme, which completed a decade
- **~1,000** energy intensive industries account for ~**60%** of primary energy consumption of entire industrial sector. These industries consume **300** million tonnes of oil equivalent (MTOE) i.e., more than total energy consumption by most of the developed countries of Europe
- PAT Cycle I to III (2012-2020) have resulted in energy savings of 24.34 MTOE and emission reduction of 105.86 MTCO2e across 13 large energy intensive industrial sectors

- Ten key achievements of PAT Scheme:
  - Most successful energy efficiency/ savings program
  - Highest mitigation potential out of all climate change efforts in a country
  - Largest coverage of the economic sector from the energy basket
  - All developed and developing countries aware about PAT scheme
  - Energy savings is actually measured and verified
  - More than 15,000 energy professionals involved and trained through different capacity building workshops on different sectors and technologies
  - Pool of more than 300 accredited energy auditors conducting mandatory energy audits, monitoring and validation (M&V) audits etc.
  - PAT enabled transition of energy savings measures from shopfloor to the board room with all stakeholders (including workers, energy managers, Board of Directors, etc.) proactively implementing measures under PAT scheme
  - Several international delegations visited India to learn about the program and replicated the same in their respective countries
  - PAT scheme made significant contribution in India's efforts to decarbonise and in the energy transition to make our economy green
- Significant potential and opportunity exit for the global low carbon technology and solutions providers to collaborate with the Indian energy intensive industries
- BEE is taking a lead in G20 Energy Transition working group and BEE is leading one of the key priorities in drawing the roadmap for doubling the energy efficiency rate in a decade and promoting low-carbon technologies for hard to abate industrial sectors
- BEE will soon be implementing the Indian Carbon Market under the jurisdiction of newly amended Energy Conservation Act, 2022
- Critical to electrify MSMEs in India that rely on coke and pet coke
- Electrifying the economy and greening the grid is the simplest way towards energy transition

# ANNEXURE I

## AGENDA FOR
## 21ST FOUNDATION DAY OF BEE AND "DECADE OF PAT SCHEME"

| Time | Session | Speakers |
|---|---|---|
| 13:30 – 14:00 | Registration | |
| **Opening Session** | | |
| 14:00 – 14:05 | Welcome Address | DDG, BEE |
| 14:05 – 14:10 | Special Address | FCDO |
| 14:10 – 14:15 | Special Address | CEO, EESL |
| 14:15 – 14:20 | Facilitation to SDA officials | DG, BEE |
| 14:20 – 14:25 | Inaugural Address | |
| **Technical Session: Moderator – DDG, BEE** | | |
| | Topics | |
| 14:30 – 14:40 | Carbon Market in India | Director, BEE |
| 14:40 – 14:50 | Energy Efficiency Financing | Director, BEE |
| 14:50 – 15:00 | DEEP for PAT Industries | CGM, EESL |
| 15:00 – 15:15 | Introduction of ASPIRE Program & Work Packages under Industrial EE theme | FCDO/ASPIRE Team |
| 15:15 – 15:30 | Transforming Foundation Industries in UK | Innovate UK |
| 15:30 – 15:45 | Waterless smart dyeing and finishing for textile industries | Alchemie Technology, UK |
| 15:45 – 16:00 | Wastewater treatment and the water-energy nexus | LAT Water, UK |
| 16:00 – 16:15 | Carbon Capture Technology to achieve net-zero | Carbon Clean, UK |
| 16:15 – 16:30 | Improve operating margins & drive sustainability with Centrica's IoT 4.0 real-time machine-level energy management solution | Centrica, UK |
| 16:30 – 16:40 | Q&A | |
| 16:40- 16:45 | Vote of Thanks | Director, BEE |
| 16:45– 17:00 | Tea Break | |
| **Inaugural Session** | | |
| 17:00 – 17:10 | Welcome Address and Impact of PAT | Mr. Abhay Bakre, DG, BEE |
| 17:10 – 17:15 | Address | AS, MOEFCC |
| 17:15 – 17:20 | Address | Mr. Ajay Tewari, AS, MoP |
| 17:20 – 17:25 | Exchange of MOUs between EESL and DCs for technology deployment under DEEP Project | |
| 17:25 – 17:35 | Keynote Address | Mr. Alok Kumar, Secretary, MoP |

| Time | Session | Speakers |
|---|---|---|
| 17:35 – 17:40 | 1. Launch of Voluntary Star Labelling program for Multi Door Refrigerator, Table/Wall Mounted and Pedestal Fans and Induction Hob<br>2. Launch of iDEEKSHA Platform and release of Flyer and Newsletter | Mr. R.K. Singh, Hon'ble Cabinet Minister of Power and New & Renewable Energy |
| 17:40 – 17:50 | Special Address | Hon'ble Minister of State for Power |
| 17:50 – 18:10 | Felicitation to Top Performer DCs under PAT cycle II. | Mr. R.K. Singh, Hon'ble Cabinet Minister of Power, New & Renewable Energy |
| 18:10 – 18:25 | Inaugural address | |
| 18:25 – 18:30 | Vote of Thanks | Dr. Ashok Kumar, DDG, BEE |
| 18:30 - 19:30 | Dinner | |

# ANNEXURE II

## BROCHURE FOR IDEEKSHA PLATFORM

# ANNEXURE III

## IDEEKSHA NEWSLETTER

# ANNEXURE IV
## ATTENDANCE SHEET

| S.No. | Name | Designation | Organisation |
|---|---|---|---|
| 1 | Mr. M. K. Agrawal | Executive Director | Grid India |
| 2 | Mr. Kashif Usman | Ch. Manager | Grid India |
| 3 | Mr. Saurabh Singh | Dy. Manager | CEAMA |
| 4 | Dr. S. K. Handoo | Advisor | My Home India |
| 5 | Mr. S. Rajasekaran | Sr. Manager Corporate Affairs | Coastal Energen Pvt. Ltd. |
| 6 | Mr. Rajkumar H. J. | Head | Tata Steel |
| 7 | Mr A. K. Panda | GM (PP) | NINL |
| 8 | Mr. Nand Kishore Jha | DM (Tech) | EESL |
| 9 | Ms. Priyanka Chandra | Advisor | GIZ |
| 10 | Mr. Piyush Sharma | Energy Advisor | GIZ |
| 11 | Mr. Ayan Ganguly | Energy Advisor | GIZ |
| 12 | Mr. M. Ravi Shankar | SVP | Aditya Birla Group |
| 13 | Mr. Chander Shekhar | DGM | Aditya Birla Group |
| 14 | Mr. K. Ramakrishan | DGM | Aditya Birla Group |
| 15 | Mr. Vijay Kr. | Manager | Aditya Birla Group |
| 16 | Mr. Deepak Kumar | CEM | UPRVUNL |
| 17 | Mr. Sanjay Singh | AGM | SCL |
| 18 | Mr. Ankur Mittal | General Manager | NCCBM |
| 19 | Mr. M. N. Girish | Director | FICCI |
| 20 | Mr. Anand Vardhan | Director | Hi-tech |
| 21 | Mr. Babu Momosin | Senior Engineer | V-Guard |
| 22 | Mr. Nitin Kumar Tiwari | COO-Metal | Vedanta Ltd. |
| 23 | Ms. Mallika | Director | NABL |
| 24 | Mr. Prince Garg | Assistant Director | NABL |
| 25 | Mr. Nand Kumar | Assistant Director | NABL |
| 26 | Mr. H. Wadhwa | Advisor | |
| 27 | Ms. Diksha Sharma | Director | Classic Instrumentation Pvt. Ltd. |
| 28 | Mr. Harshil Sharma | Lab Manager | Classic Instrumentation Pvt. Ltd. |
| 29 | Mr. Rakesh Sethi | AVP | Bajaj Electrical |
| 30 | Ms. Samriti Pandey | Manager | BILT Graphic Paper Products Ltd. |
| 31 | Mr. Rajith Shenoy | General Manager | BILT Graphic Paper Products Ltd. |
| 32 | Mr. Umang G. | DM | Shree Cement |

| S.No. | Name | Designation | Organisation |
|---|---|---|---|
| 33 | Mr. Deepak Singh | Elec. PP Head | Yash Pakka Ltd. |
| 34 | Mr. Venkateshwara Pattabhi | Senior Manager | IFFCO |
| 35 | Mr. M. A. Patil | ASG | FICCI |
| 36 | Ms. Meghaa G. | RA | AEEE |
| 37 | Ms. Priyani Dutta | SRA | AEEE |
| 38 | Mr. Parupkar Singh | Addl SE | PSPCL |
| 39 | Mr. Nabaraj Nandi | Energy Specialist | ICF |
| 40 | Mr. Binoy Vijayan | Energy Efficiency Specialist | ICF |
| 41 | Mr. Anurag Saxena | Chief of Elec | Tata Steel |
| 42 | Ms. Reena Kori | Associate Director | Idam Infra Advisory |
| 43 | Mr. Gaurang Bhatt | Sr. Vice President | Sanght Cement |
| 44 | Mr. Bishal Thapa | Sr. Director | CLASP |
| 45 | Mr. Vishal Vashishtha | AGM | NALWA |
| 46 | Mr. Anand A. Hardi | CGM | MRPL |
| 47 | Mr. Shirish Bhardwaj | RA | AEEE |
| 48 | Mr. K. Svohakar | GM | RINL |
| 49 | Ms. Kavita | | BEE |
| 50 | Mr. Bulbir S. | Advisor | |
| 51 | Mr. Harish Joshi | Manager | |
| 52 | Mr. N. D. Nayak | BDM | AKXA |
| 53 | Mr. Abdul Nishat | DGM | UPRVUNL |
| 54 | Mr. Sunil Sekhar | Manager | MSP Steel |
| 55 | Mr. Pushpendra Nayal | Addl. Director | FICCI |
| 56 | Mr. Surender Kumar Verma | Addl. Director | FICCI |
| 57 | Mr. Deepankar Gupta | Sr. Manager | IFFCO |
| 58 | Mr. A. K. Gupta | DGM | IFFCO |
| 59 | Ms. Shweta Gupta | Sr. Manager | IFFCO |
| 60 | Mr. Amit M. | DGM | GACL |
| 61 | Mr. Piyush | Sr. Manager | GACL |
| 62 | Mr. Pankaj Pujara | ED | GACL |
| 63 | Mr. Heeralal Goyal | Chief Engineer | PSPCL |
| 64 | Mr. Davender Kumar | Addl SE | PSPCL |
| 65 | Mr. R. Pugaz Henthi | DGM | GAIL |
| 66 | Ms. Sweta Rani | SM | GAIL |
| 67 | Mr. Sourav De | DM | Bajaj Energy |
| 68 | Mr. Chandrakant Chaudhary | DM | Raymond Ltd. Chhindwara |
| 69 | Mr. Rajnesh Singh | A. H. | Hindalco |
| 70 | Mr. Avinash Charan | AGM | BALCO |
| 71 | Mr. Abhishek Patel | DM | BALCO |
| 72 | Mr. Ravinder Gambhir | JVP | Havells India Ltd. |

| S.No. | Name | Designation | Organisation |
|---|---|---|---|
| 73 | Mr. Abhijnam Dasgupta | Manager | Whirlpool India |
| 74 | Mr. Pradipra | Copy Writer | Graphic Ads |
| 75 | Mr. Shailendra Parashar | AVP | HDFC Bank |
| 76 | Ms. Nidhi Verma | DVP | HDFC Bank |
| 77 | Mr. Prashant Kapoor | DGM | Shriram Rayons |
| 78 | Mr. Gopal Asati | Sr. Mgr & Energy Mgr. | Shriram Rayons |
| 79 | Mr. Dinesh | | CII |
| 80 | Mr. Mayur Popat | DGM | Grasim ABG |
| 81 | Mr. Nitin Patel | GM | GNFC |
| 82 | Mr. Harsh Vardhan | Lead IoT | Hi-tech |
| 83 | Mr. A. C. Verma | Director | Hi-tech |
| 84 | Mr. S. Nagarajun | GM | TNPL |
| 85 | Mr. G. Salvaraj | AGM | TNPL |
| 86 | Mr. Rakesh Sharma | Plant Head | Nirma Ltd. |
| 87 | Mr. Riddhash V. | Sr. Manager | Nirma Ltd. |
| 88 | Mr. Sachin Gupta | GM Elec | JK White Cement |
| 89 | Mr. A. V. V. Surrendra | Sr. Manager | BSES Rajdhani |
| 90 | Mr. Rajib K. Paul | Director | NISST |
| 91 | Mr. T. C. Gupta | Unit Head | Vardhman |
| 92 | Mr. M. P. Khate | Sr. Vice President | Vardhman |
| 93 | Mr. Rupam Sinha | Manager | MRPL |
| 94 | Ms. Saranya C. | Sr. Manager | MRPL |
| 95 | Mr. P. Chakraborty | Head | Tata Steel |
| 96 | Mr. Aliasger Zoopdiwala | GM (E&I) | UltraTech Cement |
| 97 | Mr. Chandrahas Chandrakar | Asst. Manager | DB Power Ltd. |
| 98 | Mr. Kamal Kishore | Manager | Jindal Power Ltd. |
| 99 | Mr. Jayant Chaudhari | Director | AEEE |
| 100 | Ms. Swati Chhibber | Manager | AEEE |
| 101 | Mr. Ashok Thakur | GM | RPSCL |
| 102 | Mr. Amanjeet Singh | CEO | BYPL |
| 103 | Mr. Brajesh Kumar | Head | BYPL |
| 104 | Mr. Devander Sharma | GM | BYPL |
| 105 | Mr. Nitin Kapoor | AA | BEE |
| 106 | Mr. Arpan Gupta | Dy. Manager | Century |
| 107 | Mr. Suryanarayana | GM | Century |
| 108 | Mr. Amit Semwal | TE | EESL |
| 109 | Mr. Abhinav W. | Sr. Manager | BPCL MR |
| 110 | Mr. Sanjeev Verma | GM | BPCL MR |
| 111 | Mr. Nilesh Zode | Sr. Manager | BPCL BR |
| 112 | Mr. Tajinder Singh | MGR | BPCL MR |

| S.No. | Name | Designation | Organisation |
|---|---|---|---|
| 113 | Mr. Sainath C. | GM | BPCL BR |
| 114 | Mr. Anil Kumar | AGM | Bodal Chemicals |
| 115 | Mr. M. S. Sandhu | | Bodal Chemicals |
| 116 | Mr. Brijesh | Dy. GM | NSL Textiles |
| 117 | Mr. K. K. Roy Chowdhary | Energy & Environment | |
| 118 | Mr. Pankaj Sapnte | Director | MSPGCL |
| 119 | Mr. Sharad Bhagat | Chief Engineer | MSPGCL |
| 120 | Mr. Pradyuman Poddar | VP | IFMA (Havells) |
| 121 | Mr. Gaurav Choudhary | AGM | |
| 122 | Mr. Chandra Veer Singh | AVP | Bajaj Electrical |
| 123 | Mr. Munish Bagan | | UNIDO |
| 124 | Mr. R. B. Sinha | Chief Executive | |
| 125 | Mr. C. M. Pathak | Sr. Operations Manager | |
| 126 | Ms. Sugandha | Sr. Manager | Tata Steel |
| 127 | Mr. Samrat Ray | Energy Spl. | ADB |
| 128 | Dr. Manju | Principal Director | NPTI |
| 129 | Mr. Sabyasachi Pattanaik | Director | Oracle |
| 130 | Mr. Tosias Winter | Director | IGEF |
| 131 | Mr. Anil Mehta | AGM | Panasonic |
| 132 | Dr. R. K. Singh | CGM | SIDBI |
| 133 | Mr. Pranava Piyush | AGM | SIDBI |
| 134 | Mr. Balawant Joshi | MD | Idam Infra Advisory |
| 135 | Mr. Rajoji Rao | GM | BESCOM |
| 136 | Mr. B. V. Pala | GM DSM | BESCOM |
| 137 | Ms. Shilpa Samat | Assistant Editor | Economic Times |
| 138 | Mr. H. K. Das | ED | PFC |
| 139 | Mr. Srikant | CEO | DYE |
| 140 | Mr. Neeraj Beniwal | Sr. Manager | |
| 141 | Mr. A. Balan | Member | CEA |
| 142 | Mr. Rajiv Shukla | Executive Director | Idam Infra Advisory |
| 143 | Mr. Khan Saba Nashit | Consultant | Idam Infra Advisory |
| 144 | Ms. Dhaarna Rawat | Analyst | Idam Infra Advisory |
| 145 | Mr. Harshad Juvekar | General Manager – IT | Idam Infra Advisory |
| 146 | Ms. Radhika Tomar | Head-Energy Sector Reform | British High Commission |
| 147 | Ms. Sanyukta Dasgupta | Smart Power Advisor | British High Commission |
| 148 | Mr. Ramit Malhotra | Director | KPMG India |
| 149 | Mr. Anurag Singh Sirola | Manager | KPMG India |
| 150 | Ms. Sonam Vyas | Consultant | KPMG India |
| 151 | Mr. Iain Meager | Associate Director | Carbon Trust |
| 152 | Mr. Bhushan Patil | International Funder Associate | Carbon Trust |

| S.No. | Name | Designation | Organisation |
|---|---|---|---|
| 153 | Mr. K. K. Chakarvarti | Senior Advisor | Idam Infra Advisory |
| 154 | Ms. Libby Green | Head of Climate and Energy | British High Commission |
| 155 | Dr. Sarah Connolly | Innovation Lead | Innovate UK |
| 156 | Ms. Dee Roche | Chief Marketing Officer | Alchemie Technology |
| 157 | Mr. Mark Hardiman | CEO | LAT Water |
| 158 | Mr. Niraj Singh | Sales Manager | Carbon Clean |
| 159 | Mr. Vivek Negi | Joint Director | BEE |
| 160 | Mr. Ravi Shankar Prajapati | Joint Director | BEE |
| 161 | Dr. Ashok Kumar | DDG | BEE |
| 162 | Mr. Sunil Khandare | Director | BEE |
| 163 | Ms. Amrita Nadkarni | Manager | Idam Infra Advisory |
| 164 | Mr. Jagadeesan V | Sector Expert | BEE |
| 165 | Ms. Mandeep Kaur | | BEE |

## For more information please contact

**Radhika Tomar**
Head, Energy Sector Reform
British High Commission
Radhika.Tomar@fcdo.gov.uk

**Vikas Gaba**
Partner and National Lead Power & Utilities,
KPMG in India
vikasgaba@kpmg.com