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# A Focus on India Flexible Operations in Thermal Power Plants

*Enhancing Reliability, Efficiency and Environmental Sustainability*

1st October 2024

One Day Event

Hyatt Centric Janakpuri  
New Delhi

## About The Conference

**Flexible Operations in Thermal Power Plants** strives to lay impetus on the need to adopt flexible operating methods in the Indian thermal power industry to enhance reliability, efficiency, and environmental sustainability. Coming at this crucial hour, where increased energy demands and various climate concerns behest immediate attention, this conference aims to enlighten and propose certain measures that the industry can adopt to ensure more sustainable operations. The conference will accommodate sessions that broach subjects like how smart grid technologies tend to enhance flexibility, integration of renewable energy sources in thermal power plants, operational strategies to improve reliability, strategies to optimise plant efficiency, economic benefits of flexible operations, compliance with environmental regulations and standards; among others. The conference will also host industry experts in value-packed interactive sessions as they shed light on overcoming challenges and achieving operational excellence.



## Market Scenario

In the last three years, India has registered a massive addition to its conventional power capacity. As of March 2024, the total installed thermal capacity is about 242.99 GW out of which 210.97GW is attributed to be generated from coal while the rest is generated from diesel, gas and lignite. Out of the total thermal energy production, about 52.3 per cent is generated by the private sector with the rest being produced by the Centre and the state. Owing to the growing environmental concerns and the need to switch to more reliable sustainable methods of energy production, the thermal power plant sector needs to veer towards more flexible operations.

In order to switch to flexible power plant operations, there are three dimensions that call for attention.

- Low, minimum load operation
- Short, efficient start-ups
- Shut-down and high amp rates



## Flexibility Measures that can be adopted at Plant level

In India, most thermal power plants are coal fired units. In order to switch them to a flexible mode of functioning, there needs to be a different set of measures that are employed at the operation, maintenance and administration levels respectively.

### Raising Awareness

Amplifying the need for flexible operations requires educating the staff working on-site and off-site in addition to explaining the benefits of flexible operation on the O&M of the plant. Organizing the required training sessions for different sections of staff involved and explaining to them the commercial impacts of the switch are both equally important.

### Checking the status of the plant

Identifying the bottlenecks and limitations of the plant by consulting with OEMs and assessing the influence that low load operation, pressure and temperature have. At the base load, the smooth operation of all control loops also needs to be ensured.

### Planning and executing test runs

This is an important step to evaluate the potential of plant flexibility. Evaluating the plant's current setup and its performance in terms of normal load, start-up and cycling and identifying its limitations and potential for improvement.

### Optimizing the I&C system

In order to make the whole switch even more cost-efficient, automation of the process is of utmost importance. Implementing smooth control systems and optimizing control loops are a basic requisite.

### Optimizing Combustion

In order to ensure minimum load operation, it is important to ensure the following:  
-Optimizing air flow management  
-Adapting the boiler protection system at low load operation  
-Flame detection for every individual burner  
-Operating with a reduced number of mills  
-Being transparent about the quality of coal and its composition

### Implementing mitigation measures

This involves a reassessment of all O&M procedures along with the quality of water and steam and maintenance strategies.

### Improving Plant Efficiency

Tapping into the potential of water-steam cycle like frequency support by condensate stop and optimising the HP heater. Formulating measures to enhance the performance of different equipment and components like feed water pumps, FD, ID and PA fans.

### Automating the Control Procedures

Manual operation is always at a disadvantage in comparison to automated operation. Some options that can be automated are:  
- Mill operation  
- Flue gas temperature control  
- Steam temperature control  
- Starting of pumps and fans

As every unit has a unique plant layout and equipment design, only a test run can give an appropriate estimate about the interventions required in a plant so as to make the switch to flexible operations.

## Tackling the Challenges Involved

While there may be certain inhibitions concerning this switch, this transformation to flexible operations from base-load is an inclusive process that requires a combination of determined leadership with foresight, strong management, the requisite technology and skilled employees. The primary focus to enhance flexibility lies in operating at minimum load. This plays a crucial role in the provision of residual load and is also more economical than shutting down the plant entirely. While there is no denying that there cannot be a single form of implementation plan for all plants, there are certain common steps that pave the way towards tapping the flexibility potential of each plant. More advanced measures however, would involve the consideration of each plant's specifications, its site conditions and technological requirements.

It is also imperative to keep in mind that this process of change involves adopting a holistic approach. The Instrumentation and Control (I&C) system is pivotal in ensuring flexible operation. Factors such as plant status transparency, comprehensive data assessment, ready access to operating data and advanced control systems are important prerequisites for flexible operations in thermal power plants. Apart from ensuring reliable, efficient and environmentally sustainable operations, flexible operations are highly cost-effective riddled with numerous other benefits.

**The Flexible Operations in Thermal Power Plants: A Focus on India** conference aims at discussing strategies and sharing valuable insights to bring about synchronicity among all sources of power generation in order to devise a way for flexibility in thermal power generation.

## Who Should Attend



- Central & State Power Generation Cos (Coal, Lignite & CCGT)
- Private Power Generation Cos (Coal, Lignite & CCGT)
- Captive Power Producers (Coal, Lignite & CCGT)
- Government Officials (Policy Makers and Regulatory Authorities)
- Plant O&M providers
- Energy Efficiency Auditors & Consultants
- Certification and Inspection Companies
- Government Training Institutions
- Power Plant Automation Solution Companies
- EPC Companies

## WINNERS OF 2023

- Aditya Aluminium, Hindalco Industries Ltd
- Angul Energy Limited
- Bajaj Energy Limited
- Bharat Aluminium Company Ltd
- Dhariwal Infrastructure Limited
- GSECL – Sikka Thermal Power Station
- Jhajjar Power Limited
- Jindal Stainless Limited
- Jindal Power Limited, Tamnar
- JSW Energy (Barmer) Limited
- JSW Energy Limited Vijayanagar
- JSW BPSL, SAMBALPUR WORKS
- JSW Ispat Special Products Ltd – Raigarh
- Lalitpur Power Generation Company Limited
- Maithon Power Limited
- MAHAGENCO – Chandrapur TPS
- MAHAGENCO – Khaperkheda TPS
- MAHAGENCO – Paras TPS
- MAHAGENCO – Parli TPS

- National Aluminium Company Limited
- NABHA Power Limited
- NLC India Limited- Thermal Power Station-II
- NLC India Limited – Neyveli New TPS
- NTPC Ltd – Bongaigaon Thermal Power Project
- NTPC Ltd – Korba Super Thermal Power Project
- NTPC Ltd – Mouda Super Thermal Power Station
- NTPC Ltd – Singrauli Super Thermal Power Station
- NTPC Ltd – Solapur Super Thermal Power Station
- Simhapuri Energy Limited – Jindal Power Ltd
- Talwandi Sabo Power Limited
- Tata Steel Limited – West Bokaro Powerhouse
- Tata steel Ltd Mermandali
- The Tata Power Co Ltd, Jojobera Power Plant
- WBPDCCL – Bakreswar Thermal Power Station
- WBPDCCL – Bandel Thermal Power Station
- WBPDCCL – Kolaghat Thermal Power Station
- WBPDCCL Sagardighi Thermal Power Project
- WBPDCCL – Santaldih Thermal Power Station

## LEADERSHIP AWARD WINNERS 2023

Power Plant Leader of the Year award was honored in recognition of outstanding achievements and exceptional performances.

**Mr Chhavi Nath Singh**

Jindal Power Limited – Tamnar

The Exemplary Leader of the Year

**Mr Vijayant Ranjan**

Maithon Power Limited

The Veteran Leader of the Year

**Mr Suresh Kumar Narang**

NABHA Power Limited

The Visionary Leader of the Year

**Mr Pankaj Sharma**

Bharat Aluminium Company Ltd

The Sustainable Excellence  
Leader of the Year

**Mr Bhaskar Ganguly**

Dhariwal Infrastructure Limited

The Stellar Leader of the Year

**Mr Kartikeya Misra**

JSW Energy Limited

VIJAYANAGAR

The Emerging Leader of the Year

# The CEE 2nd National Power- Gen Leadership Awards 2024

The CEE 2<sup>nd</sup> National Power-Gen Leadership Awards 2024 recognize excellence in power plant life management and performance improvement. The award establishes specific benchmarks for plants and their professionals to measure the performance in several key areas include environmental sustainability, efficient fly ash utilization, optimized water consumption, peaking plant load factor, reduced secondary oil consumption, minimized auxiliary power consumption, and improved unit net heat rate, among others.



## CATEGORIES

### 🏆 Power-Gen Excellence Unit – IPP COAL

*Best National Power-Gen  
Excellence Unit  
IPP COAL Below 250 MW*

*Best National Power-Gen  
Excellence Unit  
IPP COAL 250 - 500 MW*

*Best National Power-Gen  
Excellence Unit  
IPP COAL Above 500 MW*

### 🏆 Power-Gen Excellence Unit – IPP Lignite

*Best National Power-Gen  
Excellence Unit  
IPP LIGNITE Below 125 MW*

*Best National Power-Gen  
Excellence Unit  
IPP LIGNITE 125 - 250 MW*

*Best National Power-Gen  
Excellence Unit  
IPP LIGNITE Above 250 MW*

### 🏆 Power-Gen Excellence Unit – IPP CCGT

*Best National Power-Gen  
Excellence Unit  
IPP CCGT Below 125 MW*

*Best National Power-Gen  
Excellence Unit  
IPP CCGT Above 125 MW*

### 🏆 Power-Gen Excellence Unit – CPP COAL

*Best National Power-Gen  
Excellence Unit  
CPP COAL Below 50 MW*

*Best National Power-Gen  
Excellence Unit  
CPP COAL 50 - 135 MW*

*Best National Power-Gen  
Excellence Unit  
CPP COAL Above 135MW*

### 🏆 Power-Gen Excellence Unit – CPP

*Best National Power-Gen  
Excellence Unit  
CPP LIGNITE*


*Best National Power-Gen  
Excellence Unit  
CPP CCGT*





## SPECIALISED AWARD CATEGORIES

 <b>PUBLIC SECTOR</b> 	 <b>PRIVATE SECTOR</b> 
<b>Best National Power-Gen Plant of the Year– Coal</b>	<b>Best National Power-Gen Plant of the Year– Coal</b>
<b>Best National Power-Gen Plant of the Year– Lignite/CCGT</b>	<b>Best National Power-Gen Plant of the Year– Lignite/CCGT</b>
<b>Best National Power-Gen Leader of the Year</b>	<b>Best National Power–Gen Leader of the Year</b>
<b>Best National Power–Gen Team of the Year</b>	<b>Best National Power–Gen Team of the Year</b>
<b>Best National Power–Gen Woman Icon of the Year</b>	<b>Best National Power-Gen Woman Icon of the Year</b>
<b>Best National Power-Gen Biomass Utilization Initiative Plant of the Year</b>	<b>Best National Power-Gen Biomass Utilization Initiative Plant of the Year</b>
<b>Best National Power-Gen Digital Initiative Plant of the Year</b>	<b>Best National Power-Gen Digital Initiative Plant of the Year</b>
<b>Best National ESG Initiative of the Year</b>	<b>Best National ESG Initiative of the Year</b>
<b>Best National Corporate Social Responsibility (CSR) Initiative of the Year</b>	<b>Best National Corporate Social Responsibility (CSR) Initiative of the Year</b>
<b>Best National Safety Initiative of the Year</b>	<b>Best National Safety Initiative of the Year</b>
<b>Best National Power- Gen CPP of the Year</b>	
<b>Best National Power- Gen WHR Plant of the Year</b>	

# The CEE 2nd National Power- Gen Leadership Awards 2024

  
**15th, July 2024**  
Start of the Process

  
**10th, September 2024**  
Nomination Closes

  
**1st, October 2024**  
Announcement of Winners

Nomination Process

Honorable Jury

## ***SPONSORSHIP***

A sure fire way for your firm to emerge as a thriving leader in this proliferation industry would be to sponsor The CEE's 2nd National Power-Gen Awards 2024 conference. This will successfully leave a powerful and lasting brand impression in the minds of pivotal decision-makers.

### **Promotion**

Our promotional and marketing campaigns will help you garner publicity.

### **Outline Yourself as a Leader**

Event marketing collateral will promote your corporate brand, logo, and profile. This will help you establish yourself as an industry leader.

### **Potential Clientele**

Gain access to our classified delegate list that is so painstakingly and diligently created.

### **Networking**

Virtual meet and greets and socializing with government officials, industry leaders, specialists and senior level delegates.

### **Key Speakers**

Receive the honor of addressing an audience filled with industry decision-makers and leading executives as the primary speaker

### **Window of Opportunity**

This offers a chance for your administrators to discover your role better and uncover new business opportunities in the sector.

### **Permanent Reminders**

Documentation at the conference will generate lasting mementos of your product or services.

### **Visibility**

Our partners will provide brand building possibilities, higher exposure and so much more.

## TYPES OF SPONSORS

Sponsorship Opportunities	Generator (Principal Sponsor) INR 800,000 / USD 11,000	Terawatt (Powering Sponsor) INR 650,000 / USD 8700	Gigawatt (Knowledge Sponsor) INR 550,000 / USD 7500	Megawatt (Supporting Sponsor) INR 450,000 / USD 6500	Kilowatt (Associate Sponsor) INR 350,000 / USD 5000	Lunch Sponsor INR 250,000 / USD 3500	Welcome Kit Sponsor INR 200,000 / USD 3000
Maximum Sponsors Permitted	1	2	3	3	3	2	4
Auditorium Stage Branding	✓	✓	✓	✓	✓	✓	✓
Branding on Conference Website	✓	✓	✓	✓	✓	✓	✓
Screening of Corporate film during various session breaks (Duration – minutes)	Upto 5 minutes	Upto 3 minutes	Upto 2 minutes	—	—	—	—
Branding on LinkedIn	✓	✓	✓	✓	✓	✓	✓
Special Announcements of Thanking Sponsors	✓	✓	✓	✓	✓	✓	✓
Sharing of Conference Delegates list (List will be shared after the event)	✓	✓	--	--	--	--	--
Delegate Passes	8 Delegate Passes	6 Delegate Passes	4 Delegate Passes	4 Delegate Passes	3 Delegate Passes	3 Delegate Passes	2 Delegate Passes
Sponsor presentation opportunity	1 Slot 30 Minutes	1 Slot 30 Minutes	—	—	—	—	—
Panel Discussion Panellist	✓	—	✓	✓	--	--	--
1 Award Nomination	1 Award Nomination	—	—	—	—	—	—
Branding space in lobby	✓	✓	--	--	--	--	--
Lobby Sponsor TV AV (with Audio & Visual)	✓	--	--	--	--	--	--
Promotional Corporate Standee at the pre-function area	✓	✓	✓	✓	✓	✓	✓
Distribute Brochure in Delegate Welcome Kit	✓	✓	✓	✓	✓	✓	✓
Standee acknowledging lunch sponsorship at the lunch venue	--	--	--	--	--	✓	--
Logo on the Bags, Badges/ Lanyard of the participants	--	--	--	--	--	--	✓

SPONSOR NOW

Mr. Sachin Chavan  
Head Corporate Alliance & Partnerships  
Call: +91 9821209403 || Email: sachin@ceexcellence.org

## REGISTRATION PROCESS



### Online Registration

To participate as Delegates / nominate for Awards / be a Speaker fill and submit online form from the links below.



### Receive Invoice

We will email you an invoice along with necessary required documents for processing the payment. The original invoice shall be sent to your postal address.



### Make Payment

We will email you an invoice along with necessary required documents for processing the payment. The original invoice shall be sent to your postal address.

### DELEGATE REGISTRATION

[Register Now](#)

**Indian Delegate** INR 20000 + 18% GST

**Overseas Delegate** USD 300 Per Delegate

**Group Discount** 5% For 3+ Participants 10% For 5+ Participants

### AWARD NOMINATION

[Nominate Now](#)

**Award** INR 30000 + 18% GST

**Discount** 5% For 2 Categories 10% For 5+ Categories

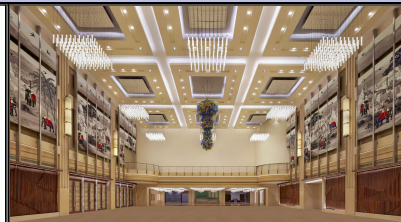
### SPEAKER REGISTRATION

[Register Now](#)

**Indian Speaker** INR 50,000 + 18% GST

**Overseas Speaker** USD 800

Venue : Hyatt Centric Janakpuri- New Delhi



Discover the perfect venue for your next business meeting, social gathering, at a leading luxury hotel conveniently located in the heart of Janakpuri, West Delhi. Connect, synergise, and let your creative juices flow or host your dream wedding in an inspiring setting at Hyatt Centric Janakpuri New Delhi, which offers over 52,000 square feet of customisable event space for every occasion



**Council of Enviro Excellence**

#### About Us

Council of Enviro Excellence [CEE] is an autonomous, national level, non-government, not for profit initiatives organization, focusing on public interest, research and advocacy on the issues to energy sector.

CEE provides a platform for power producers & technology providers in the sector to showcase various case studies, best practices, innovations, etc.

This is done by executing National and International conferences, workshops, and bespoke events based on research and guided by content.

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