

Sustainable Renewable Footprint to Meet India's Electricity Needs @ IPS 2020

India will strike a balance between conventional and renewable modes for generating power in the country, Shri R.K. Singh, Hon'ble Minister of State with Independent Charge for Power and New & Renewable Energy, said, while inaugurating the 9th edition of Indian Power Stations (IPS 2020) Conference, organised by NTPC.

The blending [conventional and renewable] will continue at a pace which is sustainable so that the basic role of providing affordable energy to the people is not compromised, Shri R.K. Singh said.

"That balancing is happening and up till now we have added 86 GW of renewable energy," the Minister added.

India's energy needs will likely grow for the next two decades riding on rapid urbanisation and its ambitions to become a USD 5 trillion economy in the next 4-5 years.

While country's reliance on coal-based power generation is high, the Government is working towards achieving a more diversified energy basket. Renewable energy is becoming an indispensable part of this energy-mix.

NTPC has been at the forefront of India's march towards fulfilling its Sustainable Development Goals (SDG).

The Maharatna Company has taken a lead to bring together all stakeholders by providing a global platform – Indian Power Stations (IPS 2020) Conference – to bring world's best practices and business opportunities in India.

Shri R. K. Singh also released



Shri R.K. Singh, Union Minister of Power, addressing industry professionals @ IPS 2020

NTPC's Sustainability Report and Abstract Compendiums.

The theme of this edition - Optimization of Generation cost and Integration of Renewables. The conference is being organized at Pandit Deen Dayal Upadhyay Auditorium, in Raipur on 13th and 14th February.

The two-day conference is held every year from 13th February to commemorate the synchronization of NTPC's first unit of Singrauli power station on the same day in 1982. The conference has become a prestigious event attracting participants from all major stakeholders in the power sector including representations from State Electricity Boards (SEB), Public Sector Undertakings (PSUs) and the private sector.

Over 750 delegates of power sector from India, USA, Germany, Japan, Australia, S Korea, and UK

will be attending the conference.

The annual event is celebrated by providing a knowledge sharing platform to professionals to meet contemporary and potential challenges through technological interventions.

Around 16 international and 173 domestic technical papers are expected to be presented during the course of the conference. The theme of papers presented during parallel sessions of the conference revolve around prevalent issues in the power sector. The knowledge assimilated through the presentation of the papers will be put into practice in the form of implementation of recommendations from the conference.

Various other sessions including

those on power plant safety, renewable energy, reliability improvement to mitigate challenges, efficiency & energy conservation, were also organized on day-one.

Meanwhile, on the 14th February, sessions on steam generator & auxiliaries, flexibilisation, steam turbine, hydropower generation, chemistry, Ash & Environment management, fuel management will be organised.

A student session was also conducted with the theme – Academics for Power Generation – to strengthen the bond between industry and academia.

Six papers from institutions like Indian Institute of Technology (IIT) and National Institute of Technology (NIT) were presented.

Products and technologies from 42 Indian and international manufacturers were also showcased at the Techno Galaxy Exhibition 2020 held during the event.

NTPC's ASH UTILISATION INITIATIVES

- ❖ NTPC achieves overall ash utilization of 75% in 2019-20; a 20% on-year rise from FY18, FY19 levels of 53.45% and 63.5% respectively
- ❖ Constructed a building at Simhadri in Andhra Pradesh using nano concrete aggregates, artificial sand and fly ash-gypsum plaster
- ❖ Signed 24 MoUs for supply of 240 lakh m3 ash to build roads; process for supply of another 160 lakh m3 ash is underway
- ❖ NTPC has signed agreement with Railway Board for bulk transportation of fly ash through BTAP wagon rakes from Rihand & Vindhyachal under Special Freight Transport Operator (SFTO) Scheme, which is first time in India for fly ash transportation.
- ❖ Successfully transported about 1,230 tonne fly ash via Barge from Kahalgaoon to Pandu through Inland waterways on a pilot basis.
- ❖ Ash parks at Varanasi and Rewa built to ensure fly ash availability from pithead power plants to urban centers; work on ash parks at Raipur, Bhubaneswar and Pune ongoing
- ❖ Conducted a contest -- Grand challenge for Ash utilization Ideas – at the national level; Top 3 new ideas selected for implementation in coming years.

Commercial Feature

Voices



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R.K. Singh
MoS (I/C) Power
New & Renewable Energy
MoS Skill Development & Entrepreneurship

It (NTPC) has led the public sector environment in the country in terms of performance, standards, profitability and culture. NTPC is actually one of the strongest foundations and one of the principle foundations of the electricity system in our country... that is how important it is for the country. It has ensured that power is available at all parts of the country at all times and it has ensured that the price of power has not gone beyond reason... that a consumer is assured of a fair price. These are most vital and important aspects of any system, especially a system that is supposed to serve the people. You always need a stabilising force, a countervailing force. The market of course is a good regulator but by itself the market can go wrong and lead to instability. For market system, balance by presence of a strong PSU is the best solution.



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Gurdeep Singh
CMD
NTPC

NTPC is committed to generating and providing affordable and reliable power in a sustainable way. NTPC currently contributes to over 22% of the energy requirement of the country and is setting new benchmarks in terms of operational efficiency. At NTPC, we have always been in the forefront when it comes to introducing innovative and eco-friendly technologies and initiatives. We are introducing digitalization in our processes and adopting the best of the technologies with the prime aim of enhancing safety and efficiency while reducing our downtime and O&M costs. Moving ahead in our commitment to provide clean and green power, we are all geared up for installing FGDs to meet the new emission norms. We have also started our efforts towards 100% ash utilization across our plants through our new age initiatives.



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Prakash S. Mhaske
Chairperson
CEA

This is an era of disruptive technologies and market mechanism. NTPC will play a vital role in taking power sector to new heights. I sincerely hope that this two-day event will deliberate on ways of being innovative in technology and competitive in market to ensure reliable, quality and affordable power to all.



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V.K. Dewangan
Joint Secretary, Thermal
Ministry of Power

All professionals gathered here will appreciate that the Theme of this conference - Optimization of Generation cost and Integration of Renewables - is very much relevant to the current challenges of this industry in particular and for the country as a whole.

Under the guidance of our Honourable Minister, we are revisiting the provisions of existing Fuel Supply Agreements and we are working out on the model conduct for the supply of coal where the quantity as well as the quality of the coal will be ensured.



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Prakash Tiwari
Director (Operations)
NTPC

Numerous initiatives and multi-faceted approach of Ministry of Power towards the development of robust infrastructure of our sector involving various entities, domestic manufacturers and other stakeholders, leveraging their engineering capabilities and other resources like land etc will definitely help in achieving the long term energy security and climate sustainability for our country.

NTPC-India's Powerful Maharatna	
17,643 MW Capacity Under Construction	58,156 MW Total Installed Capacity
19,261 Committed Workforce	

NTPC WR-II HQ Vishwesariyya Bhawan Inaugurated at Raipur



Shri Gurdeep Singh, CMD, NTPC presenting a sapling to Shri R.K. Singh. Shri P.S. Mhaske, Chairperson, CEA and Shri V.K. Dewangan, JS (Thermal) also present on the dais.

Converting Municipal Solid Waste and Agro Residue into Energy

NTPC has successfully implemented a technology to convert Municipal Solid Waste (MSW) into high Gross

calorific value (GCV) fuel that can be co-fired in conventional boilers at its Dadri Plant in Delhi NCR. In doing so, NTPC has achieved a

rare feat of being among the global pioneers to convert waste to energy.

The new technology has been installed at NTPC Dadri is expected to address the issue of air pollution, green-house gas emissions, waste management and renewable energy generation in a cost effective and environment friendly way.

NTPC is collaborating with municipalities of East Delhi Municipal Corporation along with municipalities of Kawas, Varanasi, Indore and Mohali.

NTPC is in the process of purchasing around 20,000 tonnes of agriculture residue per day to make pellets and mix it with natural coal for co-firing.

NTPC is presently using 70 to 80 tonnes per day of crop residue-based pellets with coal in its thermal power plant at Dadri in Uttar Pradesh. The project was started in 2017 to reduce air pollution and generate renewable energy by avoiding stubble burning which was causing huge pollution in Delhi and NCR.

The company has envisaged consumption of 1 million tonnes of agro pellets in 2020 for its power plants.

Safety @ NTPC

- ❖ Regular safety observational visits at all levels to eliminate hazards at work place.
- ❖ Conducting internationally certified safety training through IOSH/NEBOSH.
- ❖ Post bid safety coordination with all bidders.
- ❖ Contract Workers Pre-Employment Medical Check-up.
- ❖ Regular Pop-up alerts regarding incidences; information of incidences through e-mail.
- ❖ Safety mascot Kawach introduced; real time data analysis.
- ❖ Ensuring road safety, work at height, mechanized material handling, confined space, electric and gas welding and cutting.



NTPC's Safety Mascot Kawach represents company's firm belief in workplace safety

NTPC Business Excellence Awards 2019-20



This year 22 generating stations were assessed on NTPC Business Excellence Model. A high-level Jury have decided the following recognitions.

S.No.	Cateogry	Winner
1.	Overall Excellence	NTPC Sipat
2.	Sustained Good Performance	NTPC Vindhyachal and NTPC Rihand
3.	Consistent Improvement	NTPC Singrauli and NTPC Simhadri

Ultra-Super Critical Khargone Plant to Reduce CO₂ Emissions by 3.3%

NTPC's Khargone Super Thermal Power Station in Madhya Pradesh will reduce carbon dioxide emissions compared to the conventional super-critical power plants. The coal-based thermal power plant is India's first ultra-super critical thermal power plant.

The 1,320 MW (2X660MW) plant operates at an efficiency of 41.5 per cent, which is 3.3 per cent higher than the

conventional super-critical plants, with steam parameters of 600 degree Celsius temperatures and 270 kg per centimetre square pressure.

The high efficiency will result in less coal consumption for generating the same amount of electricity vis-à-vis supercritical plants.

One unit of 660 MW was commissioned in August 2019, while the other is under construction.

NTPC is taking various steps to make its energy portfolio greener by adding significant capacities of Renewable Energy Sources. By 2032, the company plans to have a minimum of 32000 MW capacity through RE sources constituting nearly 25% of its overall power.

Company is pursuing capacity addition in Renewable Energy projects in two modes. In own capacity addition mode, NTPC sets up Renewable Energy projects through its own investment. In

Developer Mode, NTPC is an intermediary procurer where it procures power from the Developers and sells to Discoms with a trading margin.

NTPC has a commissioned capacity of 920 MW under own capacity addition. Further 3900 MW has been commissioned under Developer Mode.

1062 MW projects have been awarded and are under implementation. Out of this 237 MW constitutes floating solar projects located in reservoirs in NTPC's

existing stations. Ramagundam 100 MW Floating Solar is being set up under non PPA mode is the largest in the country.

Under CPSU scheme of MNRE, it is envisaged to set up solar projects using domestically manufactured cells and modules with Viability Gap Funding (VGF) support from MNRE. Under this scheme, NTPC has won 1692 MW under competitive bidding of SECI. Out of these award has been placed on EPC agency for 400 MW and balance capacities are under tendering.

Renewable Energy Initiatives