

Thermal Power Plants in India – UPSC

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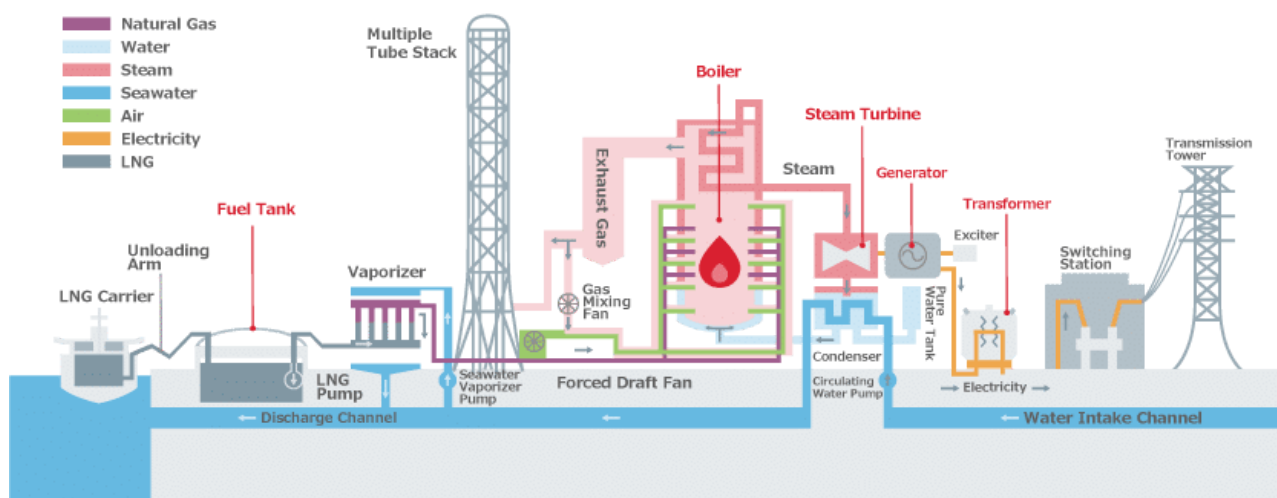
By LotusArise

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In this article, You will read the List of important **Thermal Power Plants in India** – for UPSC IAS.

Thermal Power Plants in India

- Thermal power plants contribute the largest proportion of electricity into the national power grid of India.
- As the name suggests, **thermal power plants generate electricity by using heat from a fuel source**. The heat usually generates steam in a boiler which is then used to run a steam turbine connected to a generator. They are classified according to the heat source as follows:
 - Coal-Fired
 - Gas
 - Diesel or Liquid fuel
 - Geothermal
 - Biomass
 - Waste Material
- The **total capacity of thermal power plants** as on January 31, 2021, all across India is **231870.72 MW**.
- The **electricity generated by these plants adds up to 71% of the total power generation** in the country.



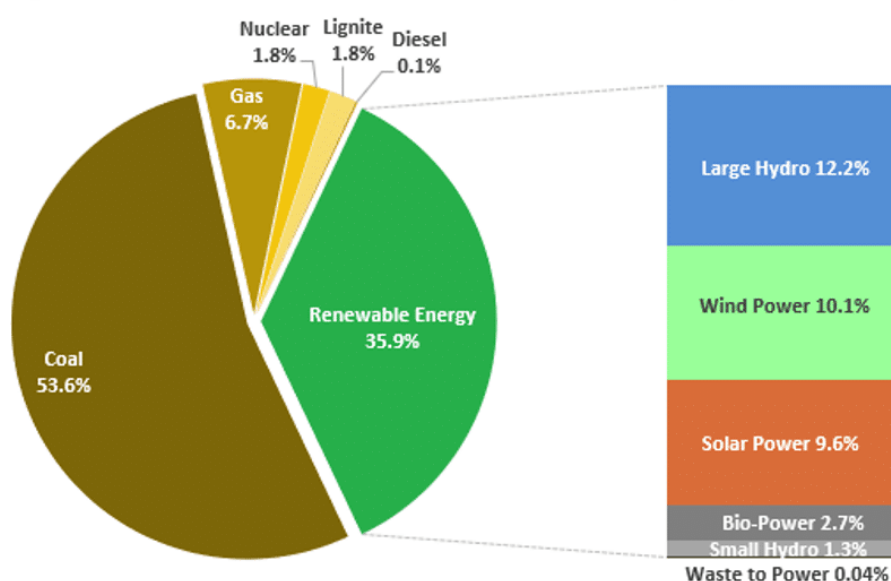
Installed GENERATION CAPACITY(FUELWISE) As on 31.08.2021

CATAGORY	INSTALLED GENERATION CAPACITY(MW)	% of SHARE IN Total
Fossil Fuel	2,34,858	60.9%
Coal	2,02,805	52.6%
Lignite	6,620	1.7%
Gas	24,924	6.5%
Diesel	510	0.1%
Total Fossil Fuel	2,34,258	60.4%
Non-Fossil Fuel		
RES (Incl. Hydro)	1,47,096	37.9%
Hydro	46,412	12.0 %
Wind, Solar & Other RE	1,00,683	25.9 %
Nuclear	6,780	1.7%
Total Non-Fossil Fuel	1,53,876	39.6%
Total Installed Capacity(Fossil Fuel & Non-Fossil Fuel)	3,88,134	100%

India - Cumulative Installed Power Capacity Mix (%)

MERCOM
India research

Renewables (including Large Hydro) comprise ~35.9% of India's total installed capacity, with solar accounting for ~9.6%. Among renewables, solar accounts for ~26.7% of the installed capacity



Data from CEA, MNRE, Mercom India Solar Project Tracker (Installed Capacity as on 31 Dec 2019)

Source: Mercom India Research

List of Thermal Power Plants in India

Thermal Power Plant	Location	State
Amarkantak TPS	Chachai	Madhya Pradesh
Anpara TPS	Anpara	Uttar Pradesh
Anta Thermal Power Station	Anta	Rajasthan
Arasmeta CPP (private)	Janjgir	Chattisgarh
Auraiya Thermal Power Station	Dibiyapur	Uttar Pradesh
Badarpur TPP	Badarpur	NCT Delhi
Bakreswar TPS	Suri	West Bengal
Barauni TPP	Barauni	Bihar
Barsingsar LignitePower Plant e	Barsingsar	Rajasthan
Bellary TPP	Kudatini	Karnataka
Bhusawal TPS	Deepnagar	Maharastra
Bokarao Thermal Power Station 'B'	Bokaro	Jharkhand
Chandrapur STPS	Chandrapur	Maharastra
Chandrapura Thermal Power Station	Chandrapura	Jharkhand
Chhabra STPP	Mothipura	Rajasthan
Deenbandhu Chhotu Ram TPP	Yamunanagar	Haryana
Dr Narla Tatarao TPS	Ibrahimpatnam	Telangana
Dr Shyama Prakash Mukharjee TPP	—	Chattisgarh
Durgapur Thermal Power Station	Durgapur	West Bengal
Durgapur TPP	Durgapur	West Bengal
Ennore TPS	Ennore	Tamilnadu
Farakka STPS	Nagarun	West Bengal
Faridabad Thermal Power Plant	Mujedi	Haryana
Feroz Gandhi Unchahar TPP	Unchahar	Uttar Pradesh
Gandhinagar TPS	Gandhinagar	Gujarat
Giral Lignite TPS	Thumbli	Rajasthan
Guru Gobind SSTP	Ghanauli	Punjab

Thermal Power Plant	Location	State
Guru Hargobind TP	Lehra Mohabbat	Punjab
Guru Nanak dev TP	Bathinda	Punjab
Harduaganj TPS	Harduaganj	Uttar Pradesh
IB Thermal PP	Banharpali	Orissa
Indraprashta PS	Delhi	NCT Delhi
Jhanor-Gandhar TPS	Urjanagar	Gujarat
Jindal Megha PP (private)	Tamnar	Chattisgarh
JSW Vijanagar PP-II (private)	Vijaynagar	Karnataka
Kahalgaon STPS	Kahalgaon	Bihar
Kakatiya TPS	Chelpur	Telangana
Kaparkheda TPS	Kaparkheda	Maharashtra
Kawas TPS	Adityanagar	Gujarat
Kolaghat TPS	Mecheda	West Bengal
Koradi TPS	Koradi	Maharashtra
Korba STPP	Jamani Palli	Chattisgarh
STPS	Kota	Rajasthan
Kothagudem TPS	Paloncha	Telangana
Kothagudem V stage TPS	Paloncha	Telangana
Kutch Lignite TPS	Panandhro	Gujarat
Lanco Amarkantak TPP (private)	Pathadi	Chattisgarh
Lanco Udupi TPP (private)	Nandikoor	Karnataka
Mejia Thermal Power Station	Durlavpur	West Bengal
Mettur TPS	Metturdam	Tamilnadu
Muzaffarpur TPP	Kanti	Bihar
Nashik TPS	Nashik	Maharashtra
National Capital TPP	Vidyutnagar	Uttar Pradesh
Neyveli TPS 1	Neyveli	Tamilnadu

Thermal Power Plant	Location	State
Neyveli TPS 2	Neyveli	Tamilnadu
North Chennai TPS	Athipattu	Tamilnadu
Obra TPS	Obra	Uttar Pradesh
Panipat TPP 1	Assan	Haryana
Panipat TPP 2	Assan	Haryana
Panki TPS	Panki	Uttar Pradesh
Paras TPS	Vidyutnagar	Maharastra
Pariccha TPS	Pariccha	Uttar Pradesh
Parli TPS	Parli-Vaijnath	Maharastra
Raichur Super TPS	Raichur	Karnataka
Rajghat PS	Delhi	NCT Delhi
Rajiv Gandhi CCPP	Kayamkulam	Kerala
Rajwest Lignite Power Plant (private)	—	Rajasthan
Ramagundam B TPS	Ramagundam	Telangana
Ramagundam STPS	Jyothi Nagar	Telangana
Rayalaseema TPS	Cuddapah	Telangana
Rihand TPP	Rihand Nagar	Uttar Pradesh
Rosa TPP (private)	Rosa	Uttar Pradesh
Sabarmati TPS (Private)	Ahamadabad	Gujarat
Sagardighi TPS	Manigram	West Bengal
Sanjay Gandhi TPS	Birsinghpur	Madhya Pradesh
Santaldih TPS	—	West Bengal
Satpura TPS	Sarni	Madhya Pradesh
Sikka TPS	Jamnagar	Gujarat
Simhadri STPS	Simhadri	Andhra Pradesh
Singrauli Super Thermal Power Station	Shaktinagar	Uttar Pradesh
Sipat TPP	Sipat	Chattisgarh

Thermal Power Plant	Location	State
Surat Lignite TPS	Nani Naroli	Gujarat
Suratgarh STPS	Suratgarh	Rajasthan
Talcher STPS	Kaniha	Orissa
Talcher TPP	Talcher	Orissa
Tanda TPP	Vidyutnagar	Uttar Pradesh
Tuticorin TPS	Tuticorin	Tamilnadu
Ukai TPS	Ukai dam	Gujarat
Vindhyachal STPS	Vidhya Nagar	Madhya Pradesh
VS Lignite Power Plant (private)	Gurha	Rajasthan
Wanakbori TPS	Wanakbori	Gujarat

* TPS – Thermal Power Station

* STPS – Super Thermal Power Station

* TPP – Thermal Power Plant

**URAN:**

- Uran is part of the Navi Mumbai, lying in the Raigarh district near Panvel
- Uran Electric Project is Asia's first power plant that runs on gas
- A SEZ has been developed here

DABHOL:

- Located at Anjanwel, Ratnagiri district of Maharashtra
- The plant was built by the Dabhol Power Company
- Due to political controversy its operation has been interrupted on several occasions.

TROMBAY:

- Located on the Trombay Island, to the southeast of the Salsette Island
- **BARC is located here.**

KAWAS:

- **Gas-based 645 MW power plant**, located in the **Surat district of Gujarat**
- Started power generation in 1992
- Uses gas from South Bassein Gas Field and water from Hazira Branch Canal
- Beneficiaries –Madhya Pradesh, Gujarat, Maharashtra, Goa.

SIKKA:

- 2 units of 120 MW each
- Located near Jamnagar
- Coal-based power station

UTRAN:

- Gas-based power station located **on the bank of Tapi River near Surat**
- India's first 370 MW gas-based combined cycle power station

DHUVARAN:

- 534 MW (Oil and Gas)
- The first power plant of Gujarat Electricity Board (GEB)
- Located near Khambhat in the Anand district
- All the units are built by the General Electric of the USA.

RAMAGUNDAM:

- NTPC power plant -2600 MW
- An industrial town in the Karimnagar district of Telangana in the northern part of the state between the Godavari and the Maher rivers
- Known as 'the City of Energy'
- Currently the largest power station of S. India
- First ISO 14004 certified super thermal power plants in India.

KOTHAGUNDAM:

- Located to the east of Singareni in the Khammam district of Telangana
- Thermal power plant – 1680 MW
- Producer of low quality coal used for the thermal power generation
- Known as the Coal Town of S. India.

BHADRACHALAM:

- Located on the bank of the Godavari in the Khammam district of AP

- Bhadrachalam Temple devoted to the Lord Rama is a famous Hindu pilgrimage site.

KOLAGHAT:

- 1260 MW installed capacity
- Located on the bank of the Rupnarayan River in Midnapore East district of West Bengal
- Has the largest state sector power plant of West Bengal.

BAKRESHWAR:

- Thermal power plant located in the Birbhum district of WB, on the bank of the Bakreshwar River
- Installed Capacity – 1050 MW

GAURIPUR:

- 413 MW
- Located on the bank of the Brahmaputra River in the Dhubri district, in western Assam.

NEYVELI:

- 2300 MW
- Located in the Cuddalore district of Tamilnadu, west of Puducherry
- Uses the locally mined lignite coals for power generation
- Managed by the Neyveli Lignite Corporation

OBRA:

- Located in the Sonbhadra district in the southern UP, on the bank of the Son River
- The coal-powered thermal power station has 13 units with the total capacity of 1550 MW

HARDUAGANJ:

- Located in the Aligarh district in western Uttar Pradesh
- Coal based power plant has 7 units and the total capacity of 665 MW
- The place is also known as Kasimpur Power House

UNCHAHAR:

- Owned and operated by NTPC, is located in the Rae Bareilly district of Uttar Pradesh
- Coal is supplied from the Jharia and North Karanpura coal fields
- Produces about 1050 MW of power from its 4 units of 210 MW each.

TUNDLA:

- Located in southwestern Uttar Pradesh in the Firozabad district, 24km away from Agra
- Important town of the British period
- Bollywood actor Raj Babbar belongs to this place.

SINGRAULI:

- Largest coalfield of Madhya Pradesh in the eastern part of the state
- Thermal power plant of NTPC – 2000 MW
- The power plant is located in the Singrauli district of UP.

SATPURA:

- 1142 MW
- Located at Sarni in the Betul district of Madhya Pradesh
- One of the largest power plants of MP
- Satpura Dam is built specifically for the power plant

AMARKANTAK:

- Located near the border of Madhya Pradesh and Chhattisgarh
- Source of the Narmada, Son, and tributary of Mahanadi
- Forms radial drainage pattern
- Famous tourist and pilgrimage center
- Has a thermal power plant (450 MW) nearby it

KORBA:

- Located on the bank of the Hasdo River in Chhattisgarh
- Coal producing region
- Aluminium plant (BALCO)
- Thermal power generation
- NTPC Plant – 2600 MW

FARIDABAD:

- A million plus city of Haryana, a suburb of Delhi to its southeast
- An industrial city and container depot
- Thermal power plant – 60 MW
- Gas based thermal power plant – 430 MW

PANIPAT:

- Located between Karnal (N) and Sonapat on the NH-1(old numbering)
- Site of the historical battles (3 famous wars)
- Thermal power plant – 440 MW + 920 MW

BADARPUR:

- Located in the southern part of Delhi near the city of Faridabad (Haryana)
- Thermal power plant – 705 MW

KOTA:

- Located in the valley of the Chambal
- Named after Koteah Clan of the Bhils
- Kota Barrage and Rawatbhata are very close to it
- Located on the NH-12
- Famous for Kota stones (marbles)
- Thermal power plant – 1241 MW

PALANA:

- Located in Rajasthan
- Palana is known for lignite mines near Bikaner, which will be used in the plant
- The installed capacity – 120 MW (2X60 MW)

ANTA:

- Located to the north of Kota
- Important solar energy producing centre
- Thermal power plant -413 MW
- It is a gas based power plant.

SAWAI MADHOPUR:

- Located in the eastern part of Rajasthan, close to the confluence of the Banas and the Chambal
- Ranthambore National Park in the vicinity
- Thermal power plant is also located

NAMRUP:

- Located in the the Dibrugarh district , in the extreme northeastern part of Assam
- First place in India where a heavy natural gas based fertilizer factory was established
- Thermal power plant – 111.5 MW
- Has substantial coal mining activities
- Petro-chemical industry
- Surrounded by large tea – gardens

BONGAIGAON:

- Located in the western part of Assam.
- Has a petroleum refinery receiving oil from Digboi
- A thermal power plant -120 MW

BARAUNI:

- Located along the left bank of the Ganga in the Begusarai district of Bihar
- Important industrial town – Oil refinery, fertilizers, thermal power
- Thermal power capacity – 255 MW
- Linked by a pipeline to the oilfields of Assam.

KAHALGAON:

- NTPC thermal power plant – 1840 MW
- Located in the Bhagalpur district, on the banks of the Ganga
- The final capacity will be 2340 MW.

CHHABRA:

- It is located in the Baran district of Rajasthan.
- It is a coal-fired power plant.
- The planned capacity of the power plant will be 2650 MW at the end of the 12th Five Year Plan.

SURATGARH:

- It is located in the Ganganagar district of Rajasthan.
- It is the first super thermal power station of the state.
- It has 6 units of 250 MW each.

GIRAL:

- It is located in the Barmer district of Rajasthan.
- It is a lignite-based power plant and it has 2 lignite-fired turbines.
- Its total installed capacity is 250 MW.

PARICHHA:

- It is located in the Jhansi district of Uttar Pradesh.
- It gets coal from Jharkhand.
- It has five units and its total installed capacity is 890 MW.
- The sixth unit is in progress.

ROSA:

- It is located in the Shahjahanpur district of Uttar Pradesh.
- It is a private power plant, owned by a subsidiary company of Reliance Power.
- It is a coal-based power plant and its total installed capacity is 1200MW.