



Chhattisgarh: Industrial Jungle

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Chhattisgarh industries:A glance

- **About 200 large industrial units are present in Chhattisgarh and scores of small units**
- **Over 200 mining projects**
- **Present industries include iron and steel plants, sponge iron, cement, thermal power plants, mines, etc.**
- **700 plants to come up in the state**



The Rush

- **Seventy six projects have been cleared in the state by the Ministry of Environment and Forests (MoEF) since 2007**

Thermal power plants	14
Mining	26
Cement plants	7
Steel plants	22
Other industries	3
Miscellaneous	4
TOTAL	76



The Rush

- **138 have been granted Terms of Reference (ToR) by MoEF**

Thermal power plants	42
Biomass based thermal power plants	4
Mining	39
Steel plants	36
Cement plants	4
Sponge iron	7
Other industries	6
TOTAL	138



The Rush

- **The state government has signed 115 MoUs with proposed investment of Rs. 1,76,193 crore**
- **Each MoU is a group of projects taking the total to 543 projects**
- **Total 745 projects are planned in Chhattisgarh: which include those granted clearance, those granted ToRs and those for which MoUs have been signed**

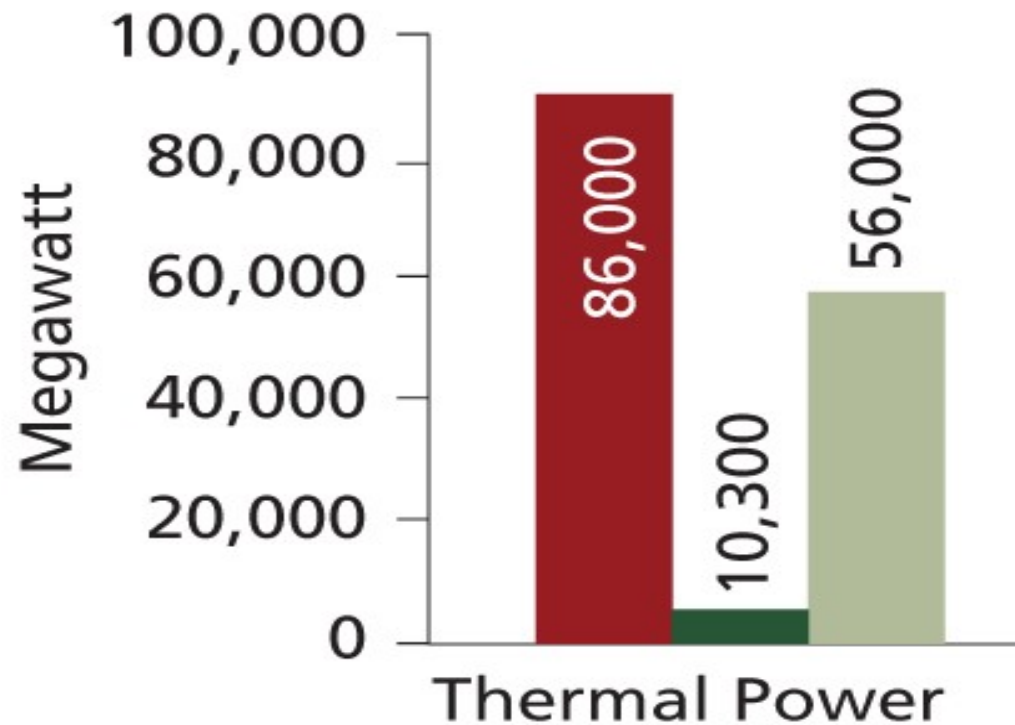


Big Numbers

- **Present coal based thermal power capacity in the state is 12 per cent of the country's current coal based power capacity**
- **Plans to add 65 per cent of India's current coal based power capacity**



Big Numbers



- India's current capacity
- Chhattisgarh's present capacity
- Chhattisgarh's proposed capacity addition

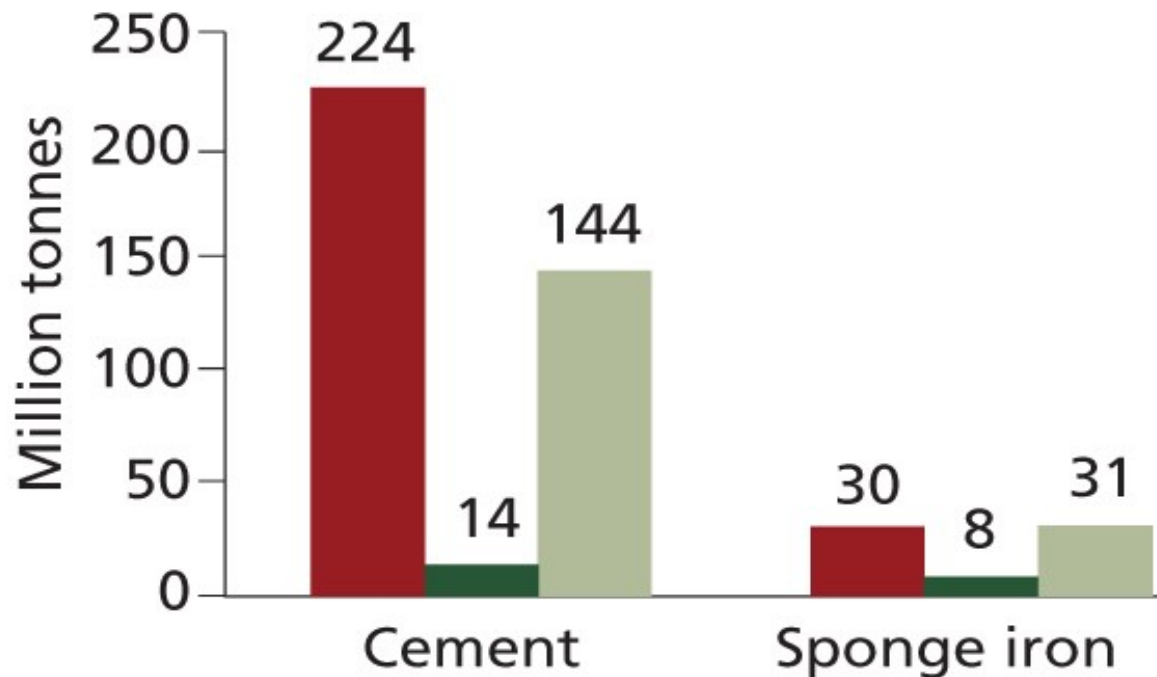


Big Numbers

- **The present sponge iron capacity in Chhattisgarh is 7 per cent of India's present capacity**
- **The state's planned sponge iron capacity will equal India's present capacity**
- **Chhattisgarh also has India's 6 per cent cement capacity at present**
- **Plans to add cement capacity equalling 51 per cent of India's present capacity**



Big Numbers



- India's current capacity
- Chhattisgarh's present capacity
- Chhattisgarh's proposed capacity addition



Resource requirement

- **Annual water requirement of all the 745 projects is estimated at 3,000 mcm**
- **Quantity sufficient to meet the domestic water requirements of 274 million people – 13 times the population of Chhattisgarh**
- **Land requirement is 1,15,000 hectare (ha)**
- **Coal requirement for the thermal power capacity addition will be 311 MTPA**



Thermal Power

- **About two-thirds of the planned coal based thermal power capacity is in just two districts – Raigarh and Janjgir-Champa**
- **Raigarh will have 37 per cent of this planned capacity and Janjgir will get 34 per cent of it**



Janjgir-Champa

- **Present coal based thermal capacity - 121 MW**
- **Planned capacity - 19,000 MW**
- **Four thermal power plants cleared and 13 are in pipeline**
- **Fourteen MoUs for 62 project signed by the state government for Janjgir-Champa worth Rs. 22,586 crore – twelve of these are thermal power plants**



Janjgir-Champa

- **Estimated land requirement for these 62 projects - 13,000 ha**
- **Water requirement estimated at 700 million cubic metre (mcm) per year. Thermal plants alone will draw 660 mcm of water**
- **Dabhra block is a special case with 9 planned thermal power plants within a radius of 10 kilometres (km)**



Raigarh

- **Raigarh has 53 large and 37 small industrial plants at present**
- **Present coal based thermal power capacity - 1,420 MW**
- **Planned power capacity - over 20,000 MW**
- **Fourteen power plants are in the cleared or pipeline stage**
- **MoUs have been signed with 28 companies for 188 projects with an investment of Rs. 61,494 crore – 30 are for thermal power plants**



Raigarh

- **Estimated land requirement for all the planned projects in the district is about 30,000 ha**
- **Water requirement is estimated at 980 mcm per year. Thermal plants alone will draw 700 mcm**



Land: acquisition and compensation

- **Land acquired through the government or through private negotiations with land owners**
- **Government process based on classifying agricultural land as single crop, double crop or barren. Compensation dependent on the category**
- **Compensation rates revised in March: Rs. 10 lakh per acre (0.4 ha) for double crop irrigated, Rs. 8 lakh an acre for single crop un-irrigated land and Rs. 6 lakh an acre for barren land.**



Land: Forests

- **About 13,000 ha of forestland has been diverted to industry in Chhattisgarh since 2000**
- **Of this, 97 per cent for mining**
- **Proposals for diversion of another 13,000 ha of forestland are pending**
- **Another 7,000 ha of forestland has ongoing mineral prospecting**



Mahanadi in peril

- **Of the 118 projects, with available data on water sourcing, 33 plan to withdraw water from the Mahanadi – 1,500 mcm per year**
- **Thermal power plants will withdraw 1,500 mcm every year from the river**
- **Water withdrawal will go up to 2,700 mcm if sourcing from Mahanadi's tributaries – Hasdeo, Lilagarh and Seonath, is added**



Mahanadi in peril

- **Total water withdrawal from Mahanadi (including existing projects): 3,700 mcm**
- **Dependable water availability in the Mahanadi over the last 10 years - an average of 1,528 mcm (measured at Kasdol)**
- **With industry set to withdraw 3,700 mcm, water budget likely to be in deficit**



Cumulative impact

- **Cumulative assessment of this industrialisation is imperative**
- **For example, Dabhra block has 9,000 MW of planned thermal power capacity**
- **A thermal power plant on an average generates about 300 kilogram (kg) of flyash and 3kg of Suspended Particulate Matter (SPM) per mega Watt hour of generation**
- **The nine power plants put together will generate about 21 million tonnes of flyash and 0.2 million tonnes of SPM**



Cumulative impact

- **As per the Comprehensive Environmental Pollution Index (CEPI), Korba is the fifth most polluted district in the country**
- **Raipur and Bhilai-Durg are also severely polluted**
- **New projects on hold for these districts**
- **Does Chhattisgarh have a method in place to assess such cumulative impact and address critical pollution levels?**