

# Cumulative Study, Data Compilation and Analysis of Power Plants in Maharashtra

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**Abstract**— Currently in Maharashtra we have a lot of different power plants like hydro, nuclear and thermal. These power plants are located at different locations. For these power plants we are preparing a map through our project. In this map we are showing location of all power plants. We are going to create QR code for these power plants. This code contains all the information related to components and specifications related. So, by using this map user can get all the information related to power plant by just scanning the code. The aim of our project is to provide detailed information about different type of power plants located in Maharashtra. User will just need to scan a QR code which contain all the information of plants like where it is located in Maharashtra.

## INTRODUCTION

In Maharashtra, we have a lot of power plants that are generating electrical energy for our daily life applications. But we all don't have any knowledge that where these power plants are located, which kind of power plants these are, how the energy generated and how the transmission/ distribution takes place towards the consumer. The energy we are using at our end is generated at that power plants. Hence, we have decided to analyze, study, collect that information and made it available to users for different kind of applications.

This all the information is stored in just one QR code for easy applications. In this project, we are creating a map of Maharashtra with the names and locations of all the power plants. This is helpful for user to know names and locations of all the power plants in one go. The availability of QR code is helpful in such a way that by just scanning it user will get all this information. It reduced human efforts and complication for searching and visiting different kind of. This contains all the information in such a manner that the users requirements getting fulfilled at the one spot. Due to this the time loss going to reduce which is one of its benefits.

## METHODOLOGY

As most of the power plants come under MAHAGENCO. The MAHAGENCO [Maharashtra State Power Generation Company Limited (MSPGCL)] formerly known as MSEB (Maharashtra State Electricity Board) India and a wholly owned subsidiary of Maharashtra State Electricity Board. It is second largest power producing company in India. MAHAGENCO having generation capacity of electrical power in India is 13602 MW comprising 10170 MW thermal power plant, 2580 MW hydro accordingly.

## SEQUENCE AND NUMBER OF POWER PLANTS

- 1- Hydro Power Plants  
(27 Numbers)
- 2- Thermal Power Plants  
(20 Numbers)
- 3- Nuclear Power Plants  
(02 Numbers)



Fig. Map Model of the Project

## NEED OF THE PROJECT

- 1- To reduce human efforts for searching various

sources

- 2- To reduce time loss for searching.
- 3- To get all the information at one point.

### DETAILS OF POWER PLANTS IN MAHARASHTRA

In the detailed information we have explained the working principle of power plants with their components. In that we have explained construction with the layout and diagrams. The primary fuel used for generation in thermal power plants is coal, in hydro power plants is water and in nuclear power plants is Uranium. In this power plants the kinetic energy generated from the flow of steam/ water is converted into mechanical energy by using turbines.

### STEPS TO BE FOLLOWED FOR SCANNING AND DETAILS

- 1-Open QR code scanner in your device.
- 2-Scan QR code on banner and open URL.
- 3-Click on type of power plants required.
- 4-Select power plant to view.
- 5-Get information of power plant with working principle.

That mechanical energy is converted into electrical energy with the help of generators. The generation voltage is 11 kV which further stepped up for transmission purpose. Disposal system is different for power plants which depends upon the fuel used. And the future planning, developments and other details mentioned as per the availability. All the information is in the editable format to update.

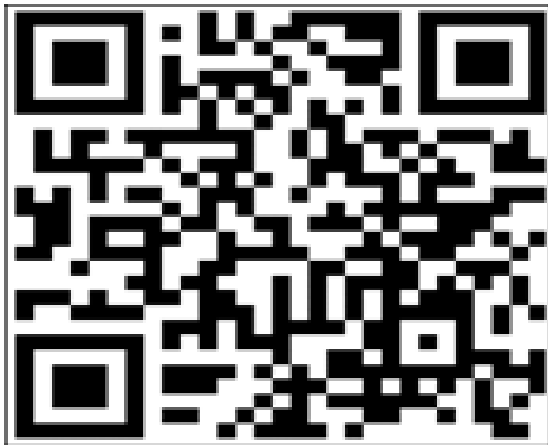
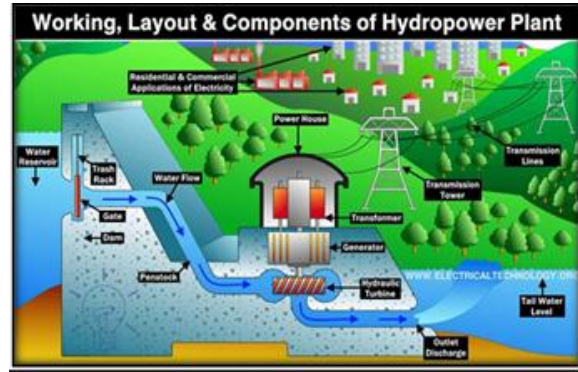


Fig. QR Code for Scanning

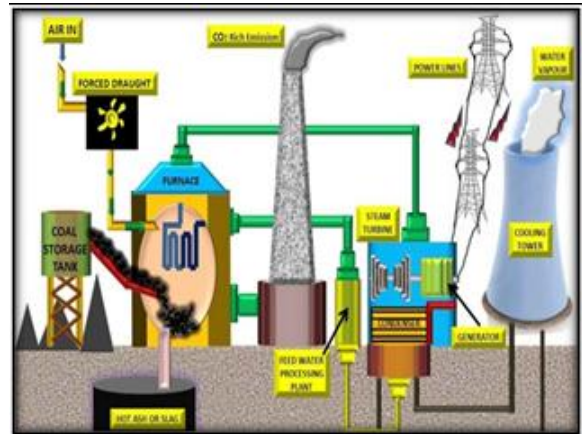
### HYDRO POWER STATIONS



Points Covered in Details:

- |                      |                        |
|----------------------|------------------------|
| 01- Power Plant Name | 02- Location           |
| 03- Co-ordinates     | 04- Installed Capacity |
| 05-Commisioned Date  | 06- Status             |
| 07-Owner             | 08- Beneficiary States |
| 09- Type of Dam      | 10- Impounds           |
| 11- Height/ Length   | 12- Dam Volume         |
| 13- Total Capacity   | 14- Surface Area       |
| 15- Purpose          | 16- Information.       |
| 17- No. of Units     | 18- Future Planning    |

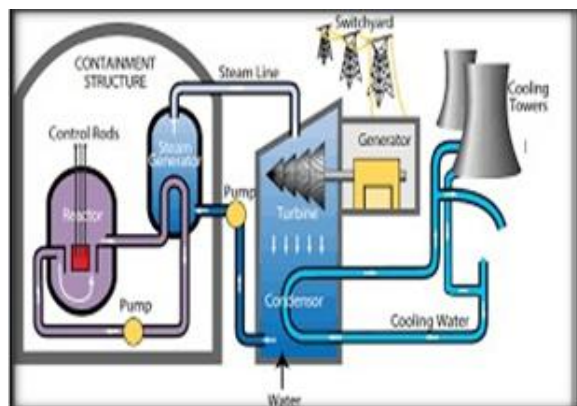
### THERMAL POWER STATIONS



Points Covered in Details:

- |                       |                        |
|-----------------------|------------------------|
| 01- Power Plant Name  | 02- Location           |
| 03- Co-ordinates      | 04- Installed Capacity |
| 05-Commisioned Date   | 06- Status             |
| 07-Owner              | 08- Beneficiary States |
| 09- Approved Capacity | 10- Primary Fuel       |
| 11- Coal Type         | 12- Coal Sources       |
| 13- No. of Turbines   | 14- No. of Generators  |
| 15- Type of waste     | 16- Disposal System    |
| 17- Exhaust System    | 18- Future Planning.   |

## NUCLEAR POWER STATIONS



Points to be covered in Details:

- |                        |                        |
|------------------------|------------------------|
| 01- Power Plant Name   | 02- Location           |
| 03- Co-ordinates       | 04- Installed Capacity |
| 05- Commissioned Date  | 06- Status             |
| 07- Owner              | 08- Beneficiary States |
| 09- No. of Reactors    | 10- Type of Reactors   |
| 11- Reactor Supplier   | 12- Cooling Source     |
| 13- Cooling System     | 14- No. of Boilers     |
| 15- No. of Turbines    | 16- No. of Generators  |
| 17- Type of Generators | 18- Fuel Used          |
| 19- Annual Net Output  | 20- Future Planning    |

## FUTURE DEVELOPMENTS

- 1- In the project, we locate power plants by using different symbols so in that for the development we can use LED light to highlight the locations.
- 2- In the map model, we used only English language to display information of power plants. So, further we can update it with additional languages like Hindi, Marathi for easy understanding of users.
- 3- In future we can use digital display system along with QR to explain working of the project. This system is useful for users in front of model and for the users gone through the online video demonstration.

## CONCLUSION

This project is beneficial for the users in the way such that the information related to all the power generating stations in Maharashtra. This project is useful for user to reduce time consumption by availability of all the described data at one point. This reduces efforts of searching and collecting from different kind of sources. From this model user will

get the location of power plants from map and district wise distribution. In this user will get all the data by just scanning the code and will get the data in one go which gives simplicity to the collection.

## REFERENCE

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