MAHARASHTRA STATE POWER GENERATION CO.LTD.

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Maharashtra Power System Transformation workshop

18 February 2020

Mahagenco Power Stations

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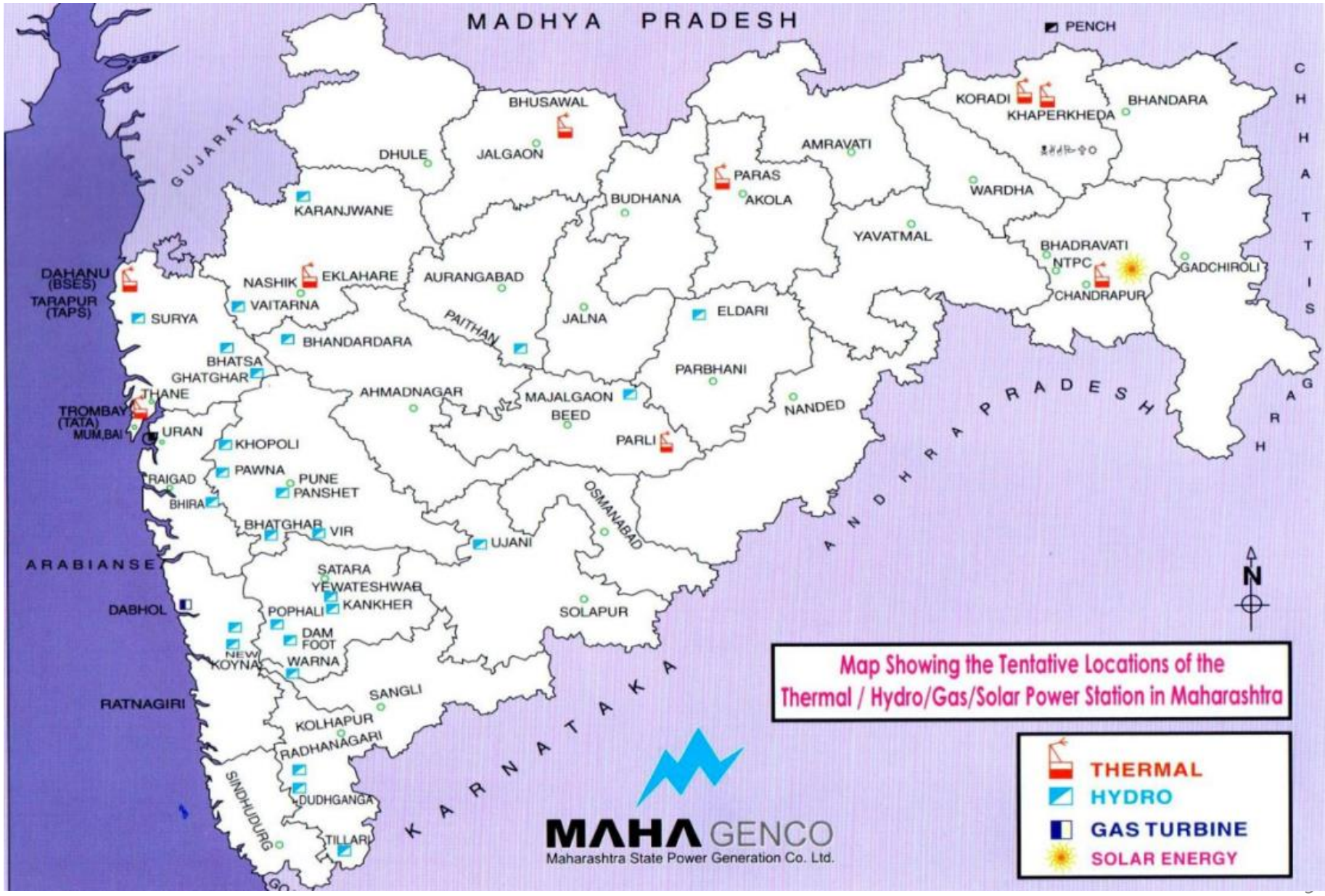

AGE PROFILE OF MSPGCL'S GENERATING UNITS

Sr No	Power Plant	Unit	Inst Cap (MW)	Comm Date/ COD	Life in Years as on
	Thermal				07.01.2020
1	Nasik	3	210	26-04-79	40
2	Nasik	4	210	10-07-80	39
3	Nasik	5	210	30-01-81	38
4	Koradi	6	210	30-03-82	37
5	Bhusawal	3	210	04-05-82	37
6	Koradi	7	210	13-01-83	36
7	Chandrapur	3	210	03-05-85	34
8	Chandrapur	4	210	08-03-86	33
9	K'kheda	1	210	26-03-89	30
10	K'kheda	2	210	08-01-90	30
11	Chandrapur	5	500	22-03-91	28
12	Chandrapur	6	500	11-03-92	27
13	Chandrapur	7	500	01-10-97	21
14	K'kheda	3	210	31-05-00	19
15	K'kheda	4	210	07-01-01	18
16	Paras	3	250	31-03-08	11
17	Parali	6	250	01-11-07	11

Sr No	Power Plant	Unit	Inst Cap (MW)	Comm Date/ COD	Life in Years as on
	Thermal				07.01.2020
18	Paras	4	250	31-08-10	9
19	Parali	7	250	31-07-10	9
20	K'kheda	5	500	16-04-12	7
21	Bhusawal	4	500	16-11-12	7
22	Bhusawal	5	500	03-01-14	6
23	Koradi	8	660	16-12-15	4
24	Chandrapur	8	500	04-06-16	3
25	Parli	8	250	19-11-16	3
26	Koradi	9	660	22-11-16	3
27	Chandrapur	9	500	24-11-16	3
28	Koradi	10	660	17-01-17	2

Age	No. of Units	MW	
Age > 25 yrs	12	3100	4020 MW
Age 16-25 yrs	3	920	
Age 5-15 yrs	7	2500	5730 MW
Age <5 years	6	3230	
Total	**28**	**9750**	

POWER GENERATION OVERVIEW

Installed Capacity - 13186 MW

21% RE

Coal (73.94%)

Chandrapur	2920 MW
Koradi	2400 MW
Khaperkheda	1340 MW
Paras	500 MW
Parli	750 MW
Bhusawal	1210 MW
Nasik	630 MW
Total	9750 MW

Gas (5.09%)

Uran (GT)	432 MW
Waste . H. Recovery	240 MW
Total	672 MW

Hydro(19.56%)

Koyana	1956MW
Small Hydro (19)	350 MW
Ghatghar (PSS)	250 MW
Ujani (PSS)	12 MW
Paithan (PSS)	12 MW
Total	2580 MW

Solar (1.39%)

Chandrapur	5 MW
Sakri, Dhule	125 MW
Shirsufal	50 MW
Raleganssiddhi	2 MW
kolambi	2 MW
Total	184 MW

Mahagenco : Existing support for Grid Stability

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Koyana Hydro Power Station

- Capacity – 1956 MW
- 18 Units of (4x70 + 4x80, 4x80, 4x250 & 2x18 MW)

Ghatghar Pumped Hydro Power Station

- Capacity – 250 MW (2 x 125 MW).

Small Pumped Hydro Power Station

- Ujani – 12 MW (1 x 12 MW)
- Paithan – 12 MW (1 x 12 MW)

Uran Gas Power Station

- Capacity – 672 MW
- GT – 4 x 105 MW and WHR – 2 X 120 MW

Mahagenco : Pilot Project for Flexibility of Coal based Thermal Units

Bhusawal Unit-5 (500 MW) & Parali Unit-8 (250 MW) are identified for Pilot Project demonstration for Flexibility of Coal based Thermal Units as per the letter received from CEA.

We are discussing with M/S. BHEL for modificaion to be done in BLR/TG system.

Flexible Operation Concerns

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Technical

- Reliability of Generating Unit
- Design & Safety Factors

Commercial

- Regulatory disallowance on account of fuel charges due to normative parameters set by the Regulator

Flexibilization: The Expectations

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EXPECTATIONS FROM THE THERMAL PLANTS

- Minimum Load : the lowest possible net load a generating unit can deliver under stable operating conditions.
- Start up Time
- Ramp Rates

Flexibilisation : Impact on existing Plants

- Lower PLF
- Increased forced outage and O&M cost
- Reduction in Efficiency - Poor heat rate and high Aux. Power
- Start-up Costs
- Loss of Useful Life of components due to fatigue and creep

Flexibilization : Regulatory Support Required

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Compensation Provision required for -

- Higher Heat Rate
- Higher Aux. Consumption.
- Higher Secondary Fuel Oil Consumption.

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Thank You