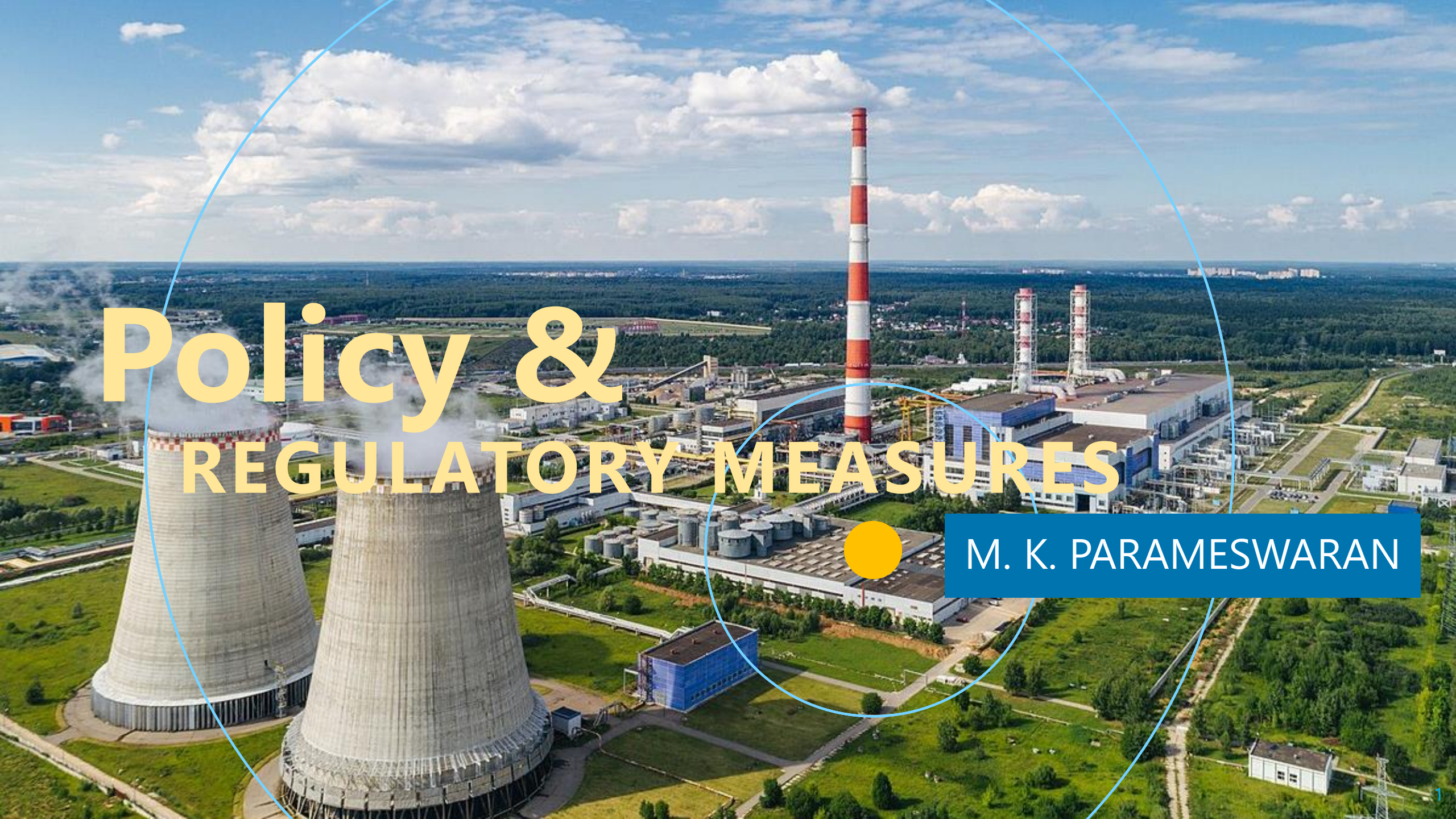

Policy & REGULATORY MEASURES

M. K. PARAMESWARAN

CONTENT

1. **Challenges Faced By “THERMAL POWER PLANT”**

    a) Financial
    b) Technical
    c) Operational

2. **Issues in FGD Installation & its Operation & Maintenance**

3. **Emission Norm compliance which need better consideration – Plant condition & stability**

Financial – Challenges in TPP

End Product (power) supplied on credit

Uncertainty in Payment

Inadequate compensation in fuel cost fluctuation

Working capital limitations

Imported coal cost increase impact

Lower PLF & cyclic load – Higher impact on Station Net Heat Rate / increased coal consumption / ncreased cost of generation

Domestic coal availability and increased landed cost

Logistics (Shipping, Port handling cost & Inland transportation)

Oil cost escalation

Financial – Challenges in TPP

Particulars	Stable Operation (Full load)	Part load and cyclic variations
Unit Capacity., MW	600	600
Off take	100%	60%
Unit Generated., MU Unit Exported., MU	14.4 13.5	8.64 7.95
GCV., ARB Kcal/ Kg	4100	4100
Sp., Coal Cons., Kg/ Kwh	0.6	0.65
APC.,%	6.25	8.00
NHR., Kcal/ Kwh	2624	2897
Landed Cost., Rs/ MT	11000	11000
Fuel Cost of Generation, Rs/Kwh	6.6	7.15
Fuel Cost of Export, Rs/ Kwh	7.04	7.77

Technical & Operational Challenges in TPP

Boiler life and availability

Turbine life and availability

Generator life and availability

Balance of plant life and availability

Part load and cyclic load (ramp up and ramp down) operations

Preservation cost

Increased wear and tear of Equipment

Increased Forced Outages

Increased spares and cost

Increased Oil Consumption

Issues in FGD Installation & It's Operations and Maintenance

1

Layout limitations - Space

Duct, Absorber, GGH, Mill, Dryer, Filter, ETP, Chimney limitations

Chemical Engg., Field

High CAPEX

2

Part & cyclic load operations/ flexibility limitations

Increased APC (1.5 –2 %)/ net increase in coal cons.,

Increased CO_2 Emissions Vs SO_X Control

3

Operating Conditions: Acidic & corrosive environment

Cl., content in coal and water

Increased sp.,Water consumption

4

Maintenance of Equipments

- OH Time
- Wear & Tear
- Spares
- Availability
-

5

Limestone Source Quantity & Quality Availability

&

Gypsum Disposal (Demand Vs Supply)

Other Issues in TPP

Realistic Scenario & its Importance in Regulations

"Chimney Emission – SPM"

Smoke visibility from Power Plant Chimneys (Ash content and design of ESP)

Bottom Ash / ash dyke

Challenges in proper ash disposal, Maintenance of HDPE layer

Heavy Metal & Radio active Isotopes

Coal & ash

FACT

Conditions of Power Plant & Stability | Regulations

Plant Loading: Part load and cyclic load operations (ramp up & ramp down) on daily basis

BTG & BOP : Life reduction and availability

Maintenance : Increased (wear & tear/ stress)

Oil Cons : Increased (at least 20 start up)

FGD : Increased Emissions Vs SOx Control (Increased APC; Less export)

Q & A

THANK YOU

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