Indian Market Report on FGD Technology

Prepared by Krishnan & Associates, Inc. Snapshot Summary

2020

Confidential



Impact of SO₂ Emission Regulations

- MoEF & CC* issues notification in 2015 with new SO₂ emission standards impacting virtually all existing coal fired capacity in India
- Implementation deadline initially set for 2017 extended to 2022 after industry pushback
- New emission standards has made installation of FGD essential in all thermal power plants
- Implementation dates set for plants based on unit size, location, impact on grid and fleet size
- Each plant has been given a target date based on their compliance plan

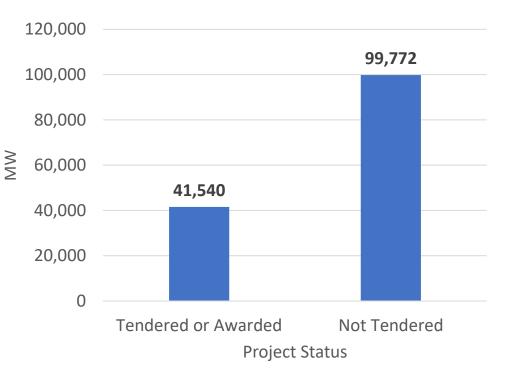
Indian SO ₂ Emission Standards				
Parameter (mg/ Nm ³)	Unit size (MW)	Installed before 2004	Installed between 2004 &2016	Installed after 2017
	< 500	600	600	100
SO ₂	>= 500	200	200	100

*Ministry of Environment, Forest and Climate Change (MOEF &CC)

141 GW of Units Require FGD as per New SO₂ Standards

- ~141 GW or 73% of India's coal fleet have to install FGD technology by 2022*
 - 41.5 GW tendered or awarded so far
 - ~100 GW not awarded or tendered
- 90%-95% SO₂ reduction from baseline emissions of 1200 mg/Nm³ to 1400 mg/Nm³ to be achieved
- 80% of the plants burn high ash Indian fuels
- Impacted plants have ESPs (few baghouse)
- Average FGD construction period varies from 20-24 months

Indian FGD Market -Awarded/Tendered Vs. Open Opportunities



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