		Section A: Industry Information	
A1.	**Start Time	|___|___|hrs|___|___|mins	
A2.	**Date*(DD/MM/YYYY)*	|___|___|/|___|___|/ 20|___|___|	
A3.	**Industry ID	GJS_ ___|___|___|	
	Display Prefilled Industry Information		
	Industry Name		
	Industry Address		
	Cluster		
	Pincode	|__ __ __ __ __ __|	
	GPCB ID		
A4.	Is this information correct?	☐ Yes ☐ No → *Re-enter prefilled industry information*	

		Section B: Survey Information		
B1.	**Surveyor Names**		Surveyor Codes	___|___| ___|___|
B2.	**Supervisor name**		Supervisor Code	___|___|
B3.	**Environmental Lab**	*Name of Lab*		
		Name of Employee		
		Lab team code	___|___|	
B4.	**Energy Consultant**	*Name of Consultant*		
		Name of Employee		
		Consultant team code	___|___|	

		Name	Designation	Contact Number
B5.	**Industry respondents** *(Please enter the name and contact details of any industry employees that answered questions)*			

Section E & F: Technical Details

E1.	Total Number of Stacks in the Industry	|_____|	E2.	Number of PM consent Stacks in the Industry, *excluding* the DG set stacks.	|_____|

	Stack Module (to be filled out for each PM Consent Stack)				
E3.1	**Stack Name** *(industry given)*		E3.2	**Stack Height**	|_____| ☐Meters ☐Feet
E3.3	**Stack Diameter**	_____ ☐ Inches ☐ Millimeters ☐ Feet ☐ Meters	E3.4	**Number of sampling ports**	|_____|
E3.5	**Height of Sampling Port from the Flue Gas Duct Inlet**	|_____| ☐ Meters ☐ Feet	E3.6	**Type of Stack**	1. ☐Process 2. ☐Combustion
E3.7	**Is there a continuous emission system (CEMS) installed in the stack?**	☐ Yes ☐ No			
E3.8	**Number of parallel chains**		|_____|		

	Parallel Chain Module: Fill out for every parallel chain in the stack *(to be repeated "E3.8" number of times)*	
F1.1	**What is the emission source?**	1. ☐ Boiler 2. ☐ Thermo-Pack/Thermic Fluid Heater 3. ☐ Furnace/Kiln
F1.2	**How many components in the parallel chain?**	|_____|
F1.3	**What is the 1st component in the parallel chain?**	1. ☐ Gravity Settling Process 2. ☐ Air pre-heater 3. ☐ Water pre-heater/economizer 4. ☐ Cyclone 5. ☐ Scrubber

		6. ☐ Bag Filter
		7. ☐ ESP
		8. ☐ FD/ID Fan
F1.4	**Is this component common to the previous parallel chain?**	☐ Yes ☐ No
F1.5	**What is the 2nd component in the parallel chain?**	1. ☐ Gravity Settling Process 2. ☐ Air pre-heater 3. ☐ Water pre-heater/economizer 4. ☐ Cyclone 5. ☐ Scrubber 6. ☐ Bag Filter 7. ☐ ESP 8. ☐ FD/ID Fan
F1.6	**Is this component common to the previous parallel chain?**	☐ Yes ☐ No
F1.7	**What is the 3rd component in the parallel chain?**	1. ☐ Gravity Settling Process 2. ☐ Air pre-heater 3. ☐ Water pre-heater/economizer 4. ☐ Cyclone 5. ☐ Scrubber 6. ☐ Bag Filter 7. ☐ ESP 8. ☐ FD/ID Fan
F1.8	**Is this component common to the previous parallel chain?**	☐ Yes ☐ No
F1.9	**What is the 4th component in the parallel chain?**	1. ☐ Gravity Settling Process 2. ☐ Air pre-heater 3. ☐ Water pre-heater/economizer 4. ☐ Cyclone

		5. ☐ Scrubber
		6. ☐ Bag Filter
		7. ☐ ESP
		8. ☐ FD/ID Fan
F1.10	**Is this component common to the previous parallel chain?**	☐ Yes ☐ No

F2.	**Take a picture of your Parallel Chain sketch.**	*(Allow respondent to take a picture.)*

Section G1: Boilers

G1.1	**How many boilers do you have?** *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section G2* 2. ☐ 1 3. ☐ 2 4. ☐ |_____|
	Boiler Module: Fill out for every boiler *(to be repeated "G1.1" number of times)*	
G1.2	**Is this boiler operational at the time of the survey?**	☐ Yes → *SKIP TO G1.5* ☐ No → *SKIP QUESTIONS G1.22 AND G1.23*
G1.3	**Why is this boiler not operational?**	1. ☐ **Under Maintenance** 2. ☐ **Not in Use** 3. ☐ **Other** (*specify*) _____
G1.4	**How long has this boiler not been operational?**	|_dd_|/|_mm_|/|___yy___|

G1.5	**Manufacturer Name**		G1.5.1	**Model Name**	
G1.6	**Manufacturer Year**				
G1.7	**Registration Number**				
G1.8	**Manufacturer Contact**				

G1.9	**Type of Boiler**	1. ☐ **Fire Tube** 2. ☐ Water Tube 3. ☐ Packaged Boiler 4. ☐ Others (*specify*): _____
G1.10	**Steam Generating Capacity**	|_____| ☐kg/hr ☐TPH ☐Other
G1.11	**Which of the following types of fuel does this boiler use?**	1. ☐ Coal (Indian); Specify Grade _____ 2. ☐ Coal (Imported); Specify Country _____ 3. ☐ Coke 4. ☐ Lignite 5. ☐ Pet Coke 6. ☐ Other Solid Fuel (*specify*): _____ 7. ☐ Wood 8. ☐ Bagasse 9. ☐ Rice Husk 10. ☐ Other Biomass (*specify*): _____ 11. ☐ Mix Indian + Imported Coal 12. ☐ Mix Indian Coal + Wood

		13. ☐ Mix Lignite + Wood	
	Fuel Module: Fill out for every fuel checked in G1.11		
G1.12.1	**Amount of this fuel used per month**	|_____| **Metric Ton/month**	
G1.12.2	**Fuel Processing Method**	1. ☐ None 2. ☐ Grinding 3. ☐ Pulverization 4. ☐ Others *(specify)*: _____	
G1.12.3	**How many times per month is this fuel delivered?**	|_____| **times/month**	
G1.12.4	**Do you have a closed, covered, or dust-free system to store the fuel?**	1. ☐ Yes 2. ☐ No	
G1.12.5	**Do you have a closed, covered, or dust-free system to convey the fuel?**	1. ☐ Yes 2. ☐ No	
	End of fuel module		
G1.13	**Type of Fuel Firing**	1. ☐ Manual 2. ☐ Fluidized 3. ☐ Burner 4. ☐ Other *(specify)*: _____	
G1.14	**Type of Control**	1. ☐ Manual Control 2. ☐ Automatic Control	
		(numeric values only)	**Unit of Measurement**
G1.15	**Furnace Area**		☐ **Meters squared** ☐ **Feet squared** ☐ **Other**
G1.16	**Air Box Size**	|_____|x |_____|x|_____|	☐ **mm x mm x mm** ☐ **in x in x in** ☐ **ft x ft x ft** ☐ **Other**
G1.17	**Nos. of Nozzle**		Nos.
G1.18.1	**FD Fan**	**Capacity**		☐ **Cubic meter/min** ☐ **Cubic meter/hr** ☐ **Other**

G1.18.2	Power		☐ KW ☐ HP ☐ Other
G1.19.1	How many PA Fans are there?	☐ 0 → *Skip to G1.20* ☐ 1 ☐ 2 ☐ |_____|	
	PA Fan Module: Fill out for every PA Fan *(to be repeated "G1.19.1" number of times)*		
G1.19.2	Capacity	|_____|	☐ Cubic meter/min ☐ Cubic meter/hr ☐ Other
G1.19.3	Power	|_____|	☐ KW ☐ HP ☐ Other
	End of PA Fan module		
G1.20	Designed Steam Pressure		☐KPa ☐BAR ☐kg/cm^2 ☐ Other
G1.21	Designed steam Temperature		Degree Celsius
G1.22	Running Load	|_____|	☐ TPH ☐ Other
G1.23	Fuel Feed Rate		kg/hour
G1.24	Rated (designed) efficiency of boiler		%
G1.25	Year boiler was installed	|__|__|__|__|	Year
G1.26	Cost of Installation and Commissioning *(boiler only)*		☐ Lakh ☐ Crore ☐ Other
G1.27	Annual Operating cost of the boiler *(Include: Power, Water Consumption, Labor cost and other daily costs)* *(**Do NOT include fuel costs**)*		☐ Rupees ☐ Lakh ☐ Other

G1.28	**Annual Maintenance cost of the boiler***(Include: Equipment Repair, Cleaning***)**		☐ Rupees ☐ Lakh ☐ Other
G1.29	**Number of Days this boiler operates**	|__|__|__|	1. ☐ Days/Year 2. ☐ Days/ Month
G1.30	**Has this Boiler ever undergone major modifications?**	1. ☐Yes 2. ☐ No → ***Skip to G1.34***	
G1.31	**Which year did the latest modifications take place?**	|__|__|__|__|	
G1.32	**How much did the modifications cost?**		☐ Rupees ☐ Lakh ☐ Other

G1.33	Is the feed water treated?		1. ☐ Yes 2. ☐ No **->*Skip to G1.35***	
G1.34	**Type of Treatment**		1. ☐ Water Softening System 2. ☐ Sand Filter 3. ☐ Carbon Filter 4. ☐ Reverse Osmosis 5. ☐ Other *(specify)*: _____	
G1.35	**What Waste Heat Recovery device is installed?** *(tick all that apply)*		1. ☐ Water pre-heater **→ *Go to G1.36*** 2. ☐ Economizer **→ *Go to G1.36*** 3. ☐ Air pre-heater **→ *Skip to G1.37*** 4. ☐ None **→ *Skip to G1.38*** 5. ☐ Other *(specify)*: _____ **→*Skip to G1.38***	
G1.36.1	**Water pre-heater**	**No. of Tubes**		Nos.
G1.36.2		**Diameter of Tubes**		☐ **Millimeters** ☐ **Feet** ☐ **Inches** ☐ **Other**
G1.36.3		**Length of Tubes**		☐ **Meters** ☐ **Feet** ☐ **Other**
G1.36.4		**Heating Surface**		☐ **Meters squared** ☐ **Feet squared** ☐ **Other**
G1.36.5		**Is the WPH insulated?** *(surveyor should observe)*		1. ☐ **Yes** 2. ☐ **No**
G1.37.1	**Air pre-heater**	**No. of Tubes**		Nos.
G1.37.2		**Diameter of Tubes**		☐ **Millimeters** ☐ **Feet** ☐ **Inches** ☐ **Other**
G1.37.3		**Length of Tubes**		☐ **Meters** ☐ **Feet** ☐ **Other**
G1.37.4		**Number of Pass**	☐ **1** ☐ **2** ☐ **Other** *(specify)*: _____	
G1.37.5		**Is the APH insulated?** *(surveyor*		☐ **Yes** ☐ **No**

		should observe)		
G1.38	**Is the feed water tank insulated?**	1. ☐ Yes 2. ☐ No		
G1.39	**Is there a boiler engineer?**	3. ☐ Yes 4. ☐ No		
G1.40	**Is there a boiler master?**	1. ☐ Yes 2. ☐ No		
G1.41	**Number of Boiler Operators**	|__|__|		
G1.42	**Do you clean the Boiler?**	1. ☐ Yes 2. ☐ No **-> *End this section***		
G1.43	**Last time Boiler was cleaned?**	|__|__| / |__|__| / |__|__|__|__|		
G1.44	**Boiler Cleaning Method**	1. ☐ Washing 2. ☐ Scrubbing 3. ☐ Scrapping 4. ☐ Other *(specify)*: _____		
G1.45	**Boiler Cleaning Frequency**	1. ☐ Once in a week 2. ☐ **Once in 15 days** 3. ☐ Once in a month 4. ☐ Once in six month 5. ☐ **Once in a year** 6. ☐ **Never**		

Section G2: Thermopacks/Thermic Fluid Heaters

G2.1	**How many thermopacks do you have?** *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section G3* 2. ☐ 1 3. ☐ 2 ☐ |_____|
	Thermopack Module: Fill out for every Thermopack *(to be repeated "G2.1" number of times)*	
G2.2	**Is this thermopack operational at the time of the survey?**	☐ Yes → *SKIP to G2.5* ☐ No → *SKIP question G2.26*
G2.3	**Why is this thermopack not operational?**	1. ☐ **Under Maintenance** 2. ☐ **Not in Use** ☐ **Other (***specify***) _____**
G2.4	**How long has this thermopack not been operational?**	|_dd_|/|_mm_|/|___yy___|
G2.5	**Manufacturer Name**	G2.5.1 **Model Name**
G2.6	**Manufacturer Contact**	
G2.7	**Manufacturer Year**	
G2.8	**Type of control**	1. ☐ Manual Control 2. ☐ Automatic Control
G2.9	**Which of the following types of fuel does this boiler use?**	1. ☐ Coal (Indian); Specify Grade _____ 2. ☐ Coal (Imported); Specify Country _____ 3. ☐ Coke 4. ☐ Lignite 5. ☐ Pet Coke 6. ☐ Other Solid Fuel *(specify)*: _____ 7. ☐ Wood 8. ☐ Bagasse 9. ☐ Rice Husk 10. ☐ Other Biomass *(specify)*: _____ 11. ☐ Mix Indian + Imported Coal 12. ☐ Mix Indian Coal + Wood 13. ☐ Mix Lignite + Wood
	Fuel Module: Fill out for every fuel checked in G2.9	
G2.10.1	**Amount of this fuel used per month**	|_____| **Metric Ton/month**
G2.10.2	**Fuel Processing Method**	1. ☐ None 2. ☐ Grinding 3. ☐ Pulverization 4. ☐ Others *(specify)*: _____
	End of fuel module	

G2.11	**Type of Fuel Firing**		1. ☐ Manual 2. ☐ Automatic FBC 3. ☐ Bubbling Bed 4. ☐ Other *(specify)*: _____	
			(numeric values only)	**Unit of Measurement**
G2.12	**Thermopack Capacity**			☐mKcal/hr ☐Kcal/hr ☐ U ☐ Other
G2.13	**Heating Surface (HTA)**			☐ **Meters squared** ☐ **Feet squared** ☐ **Other**
G2.14	**Furnace Area**			☐ **Meters squared** ☐ **Feet squared** ☐ **Other**
G2.15	**Air Box Size**		|_____|x |_____|x|_____|	☐ **mm x mm x mm** ☐ **in x in x in** ☐ **ft x ft x ft** ☐ **Other**
G2.16	**Nos. of Nozzle**			Nos.
G2.17.1	**Oil Circulating Pump**	**Capacity**		☐ Cubic meter/min ☐ Cubic meter/hr ☐ **Other**
G2.17.2		**Volume**	|_____|	☐ Cubic meter ☐ Cubic feet ☐ Other
G2.17.3		**Head**		Meters
G2.17.4		**Power**		☐ KW ☐ HP ☐ Other
G2.18.1	**FD Fan**	**Capacity**		☐ Cubic meter/min ☐ Cubic meter/hr ☐ **Other**
G2.18.2		**Power**		☐ KW ☐ HP ☐ Other
G2.19.1	**How many PA Fans are there?**		☐ 0 → *Skip to G1.20* ☐ 1 ☐ 2 ☐ |_____|	

	PA Fan Module: Fill out for every PA Fan *(to be repeated "G2.19.1" number of times)*		
G2.19.2	Capacity		☐ Cubic meter/min ☐ Cubic meter/hr ☐ **Other**
G2.19.3	Power		☐ KW ☐ HP ☐ Other
	End of PA Fan module		
G2.20	Rated (designed) efficiency of Thermopack *(check with manufacturer)*	|__|__|	%
G2.21	**Year this Thermopack was installed**	|__|__|__|__|	Year (already covered)
G2.22	**Cost of Installation and Commissioning** *(thermopack only)*		☐ Rupees ☐ Lakh ☐ Other
G2.23	**Annual Operating cost of the Thermopack** *(Include: Power Consumption, Labor cost and other daily costs)(do NOT include fuel costs)*		☐ Rupees ☐ Lakh ☐ Other
G2.24	**Annual Maintenance cost of the Thermopack** *(Include: Equipment Repair, Cleaning)*		☐ Rupees ☐ Lakh ☐ Other
G2.25	**Number of days thermopack operates**	|__|__|__|	1. ☐ Days/ year 2. ☐ Days/ Month
G2.26	**Fuel feed rate**		kg/hr
G2.27	**Has this thermopack ever undergone major modifications?**	1. ☐ Yes 2. ☐ No **→ *Skip to G2.30***	
G2.28	**Which year did the latest modifications take place?**	|__|__|__|__|	Year
G2.29	**How much did the modifications cost?**		☐Rupees ☐ Lakh
G2.30	**What Waste Heat Recovery device is installed?** *(tick all that apply)*	1. ☐ Water pre-heater **→ *Show Water pre-heater section, then SKIP to G2.33*** *2.* ☐ Economizer **→ *Show Water pre-heater section, then SKIP to G2.33*** 3. ☐ Air pre-heater ***->Skip to G2.32.1*** 4. ☐ None ***->Skip to G2.33*** 5. ☐ Other *(specify)*: _____ ***->Skip to G2.33***	

G2.31.1	Water pre-heater	No. of Tubes		Nos.
G2.31.2		Diameter of Tubes		☐ Millimeters ☐ Feet ☐ Inches ☐ Other
G2.31.3		Length of Tubes		☐ Meters ☐ Feet ☐ Other
G2.31.4		Diameter and Length of Shell		☐ Ø x Length ☐ Other
G2.31.5		Heating Surface		☐ Meters squared ☐ Feet squared ☐ Other
G2.31.6		**Is the WPH insulated?** *(surveyor should observe)*		1. ☐ **Yes** 2. ☐ **No**
G2.32.1	Air pre-heater	No. of Tubes		Nos.
G2.32.2		Diameter of Tubes		☐ Millimeters ☐ Feet ☐ Inches ☐ Other
G2.32.3		Length of Tubes		☐ Meters ☐ Feet ☐ Other
G2.32.4		Number of Pass	☐ 1 ☐ 2 ☐ Other *(specify):* _____	
G2.32.5		Heating Surface		☐ **Meters squared** ☐ **Feet squared** ☐ **Other**
G2.32.6		**Is the APH insulated?** *(surveyor should observe)*		1. ☐ **Yes** 2. ☐ **No**
G2.33	**Is there an engineer for Thermopack?**		1. ☐ Yes 2. ☐ No	

G2.34	**Is the operating team of Thermopack same as Boiler?**	1. ☐ Yes →*Skip to G2.36* 2. ☐ No
G2.35	**Number of Thermopack Operators**	|__|__|
G2.36	**Do you Clean Thermopack?**	1. ☐ Yes 2. ☐ No →*End this Section*
G2.37	**When was the last time Thermopack cleaned?**	|__|__|/|__|__|/|__|__|__|__|
G2.38	**Thermopack Cleaning Method**	1. ☐ Washing 2. ☐ Scrubbing 3. ☐ Scrapping 4. ☐ Other *(specify)*: _____
G2.39	**Thermopack Cleaning Frequency**	1. ☐ Once in a week 2. ☐ Once in 15 days 3. ☐ Once in a month 4. ☐ Once in six month 5. ☐ Once in a year 6. ☐ Never

Section G3: Furnaces/ Kilns

G3.1	**How many furnaces do you have?** *(operational and non-operational)*	1. □ 0 → *Skip this section, go to Section H1* 2. □ 1 3. □ 2 □ |_____|
Furnace Module: Fill out for every furnace *(to be repeated "G3.1" number of times)*	
G3.2	**Is this furnace operational at the time of the survey?**	□ Yes → *Skip to G3.5* □ No → *Skip question G3.20*
G3.3	**Why is this furnace not operational?**	1. □ **Under Maintenance** 2. □ **Not in Use** 3. □ **Other** (*specify*) _____
G3.4	**How long has this furnace not been operational?**	|_dd_|/|__mm_|/|___yy___|
G3.5	**Manufacturer Name:**	G3.5.1 **Model Name:**
G3.6	**Manufacturer Contact**	
G3.7	**Type of Furnace/Kiln**	

		(numeric values only)	Unit of Measurement
G3.8	**Capacity of Furnace/Kiln**		Tons/melt
G3.9	**Furnace Cycle Time**		hour/melt
G3.10	**Rated efficiency of Furnace**		%
G3.11	**Year of equipment purchase**	|__|__|__|__|	
G3.12	**Cost of Installation and Commissioning**		□ Lakh □ Crore □ Other
G3.13	**Annual Operating cost of the Furnace** *(Do NOT include fuel costs)*		□Rupees □ Lakh □ Other
G3.14	**Annual Maintenance cost of the Furnace**		□Rupees □ Lakh □ Other
G3.15	**Number of days this furnace operates**		1. □ Days/ year 2. □ Days/ Month
G3.16	**Has this equipment ever undergone major modifications?**	1. □ Yes 2. □ No →*Skip to G3.19*	

G3.17	**Which year did this modifications take place?**	|__|__|__|__|	
G3.18	**How much did the modifications cost?**		☐Rupees ☐ Lakh ☐ Crore
G3.19	**Burning Losses**	|__|__|	%
G3.20	****Do you see fugitive emissions from the furnace?** *(this should be observed by the surveyor)*	1. ☐ Yes 2. ☐ No	

Section H1: Gravity Settling Chamber

H1.1	How many GSCs do you have? *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section H2* 2. ☐ 1 3. ☐ 2 4. ☐ |_____|

GSC Module: Fill out for every GSC *(to be repeated "H1.1" number of times)*

H1.2	Is this Gravity Settling Chamber operational at the time of the survey?	☐ Yes → *Skip to H1.5* ☐ No
H1.3	Why the Gravity Settling Chamber is not operational?	1. ☐ Under Maintenance 2. ☐ Not in Use 3. ☐ Others (*specify*) _____
H1.4	Since when the Gravity Settling Chamber is not operational?	|_dd_|/|__mm_|/|___yr___|

H1.5	**Manufacturer Name:**		**H1.5.1**	**Model Name**	

H1.6	**Manufacturer Contact**		
H1.7	**Rated Efficiency of the APCD**	|__|__| %	
H1.8	**Year of equipment purchase**	|__|__|__|__|	
H1.9	**Cost of Installation and Commissioning**		☐Rupees ☐ Lakh ☐ Other
H1.10	**Annual power consumption costs and labor costs of this Gravity Settling Chamber**		☐Rupees ☐ Lakh ☐ Other
H1.11	**Annual Maintenance cost of this Gravity Settling Chamber***(Include: Equipment Repair, Cleaning)*		☐ Rupees ☐ Lakh ☐ Other
H1.12	**Has this equipment ever undergone major modifications?**	1. ☐ Yes 2. ☐ No → *Skip to H1.15*	
H1.13	**Which year did the most recent modifications take place?**	|__|__|__|__|	
H1.14	**How much did the modifications cost?**		☐ Rupees ☐Lakh
H1.15	**Method of Dust Removal from Gravity Settling Chamber**	1. ☐ Manual 2. ☐ Continuous 3. ☐ Other (*specify*): _____	

H1.16	**Frequency of Dust Collection**	|__|__|	No of times/month
H1.17	**Average Quantity of Dust Collected per day**		Kg

H1.18	**The Last time Chamber was cleaned**	|__|__| / |__|__| / |__|__|__|__|	
H1.19	**Frequency of Chamber Cleaning**		No of times/year
H1.20	**Cleaning Method**	1. ☐ Washing 2. ☐ Scrubbing 3. ☐ Scrapping 4. ☐ Other *(specify)*: _____	

Section H2: Cyclone

H2.1	How many cyclones do you have? *(operational and non-operational)*	1. □ 0 → *Skip this section, go to Section H3* 2. □ 1 3. □ 2 4. □ |_____|

Cyclone Module: Fill out for every Cyclone *(to be repeated "H2.1" number of times)*

H2.2	**Is this Cyclone operational at the time of the survey?**	□ Yes → *Skip to H2.5* □ No
H2.3	Why the Cyclone is not operational?	1. □ Under Maintenance 2. □ Not in Use 3. □ Others *(specify)* _____
H2.4	Since when Cyclone is not operational?	|_dd_|/|__mm__|/|___yy___|

H2.5	**Details of Cyclones** *(Report the no. of cones and their dimensions in this question)*	Number *(in Nos.)*	Height *(in Meter)*	Diameter *(in Meter)*

H2.6	**Manufacturer Name**		H2.6.1	**Model Name**	

H2.7	**Manufacturer Contact**	
H2.8	**Rated (designed) Efficiency of the APCD**	|__|__| %
H2.9	**Year of equipment purchase**	|__|__|__|__|

H2.10	**Cost of Installation and Commissioning**		□ Rupees □ Lakh □ Other
H2.11	**Annual power consumption costs and labor costs of the Cyclone**		□ Rupees □ Lakh □ Other
H2.12	**Annual Maintenance cost of the Cyclone** *(Include: Equipment Repair, Cleaning)*		□ Rupees □ Lakh □ Other
H2.13	**Has this equipment ever undergone major modifications?**	1. □ Yes 2. □ No → *Skip to H2.16*	
H2.14	**Which year did the recent modifications take place?**	|__|__|__|__|	
H2.15	**How much did the modifications cost?**		□ Rupees □ Lakh

			□ **Other**

H2.16	**Method of Dust Removal from Cyclone**	1. □ Manual 2. □ Continuous 3. □ Other *(specify)*: _____	
H2.17	**Frequency of Dust Collection**		No of times/month
H2.18	**Average Quantity of Dust Collected per day**		kg/day
H2.19	**Cyclone bottom opening air tight/leak proof?**	1. □ Yes 2. □ No	

Section H3: Scrubber

H3.1	How many scrubbers do you have? *(operational and non-operational)*	1. □ 0 → *Skip this section, go to Section H4* 2. □ 1 3. □ 2 4. □ |_____|	

Scrubber Module: Fill out for every Scrubber *(to be repeated "H3.1" number of times)*

H3.2	**Is this Scrubber operational at the time of the survey?**	□ Yes → *Skip to H3.5* □ No	
H3.3	**Why the Scrubber is not operational?**	1. □ Under Maintenance 2. □ Not in Use 1. □ Others (*specify*) _____	
H3.4	**Since when Scrubber is not operational?**	|_dd_| / |_mm_| / |___yyyy___|	
H3.5	**Type of Design**	1. □ Ventury 2. □ Tower	
H3.6	**Water Circulation Pump capacity**		1. □ kL/hr 2. □ Cubic meter/sec **3.** □ Other
H3.7	**Flue Gas Capacity**		□ Cubic meter/min □ Cubic meter/hr □ Other
H3.8	**Flue Gas Velocity**		□ **Meter/sec** □ **Other**
H3.9	**Installation before ID Fan?**	1. □ Yes 2. □ No	
H3.11	**Manufacturer Name:**	H3.11.1 **Model Name**	
H3.12	**Manufacturer Contact**		
H3.13	**Type of Scrubber** (*tick* more than one if necessary)	1. □ Simple 2. □ Spray 3. □ Packed Bed 4. □ Impingement	5. □ Venturi 6. □ Dry 7. □ Other (*specify*): _____
H3.14	**Rated Efficiency of the Scrubber**	|__|__| %	

H3.15	**Year of purchase of this scrubber**	|__|__|__|__|	
H3.16	**Cost of Installation and Commissioning**		□ Rupees □ Lakh □ Other
H3.17	**Annual power consumption costs and labor costs of this Scrubber**		□ Rupees □ Lakh □ Other
H3.18	**Annual Maintenance Cost of this Scrubber***(Include: Equipment Repair, Repainting, Cleaning Cost)*		□ Rupees □ Lakh □ Other
H3.19	**Has this scrubber ever undergone major modifications?**	1. □ Yes 2. □ No **→ *Skip to H3.22***	
H3.20	**Which year did the most recent modifications take place?**	|__|__|__|__|	
H3.21	**How much did the modifications cost?**		□ Rupees □ Lakh □ Other
H3.22	**Is "demister" installed?**	1. □ Yes 2. □ No	
H3.23	**Cleaning Frequency (times per year)**		
H3.24	**Last cleaning date**	|__|__|/|__|__|/|__|__|__|__|	
H3.25	**Cleaning Method**	1. □ Washing 2. □ Scrubbing 3. □ Scrapping 4. □ Other *(specify)*: _____	

Section H4: Bag Filter

H4.1	**How many bag filters do you have?** *(operational and non-operational)*	1. □ 0 → *Skip this section, go to Section H5* 2. □ 1 3. □ 2 4. □ |_____|
Bag Filter Module: Fill out for every Bag Filter *(to be repeated "H4.1" number of times)*	
H4.2	**Is this Bag Filter operational at the time of the survey?**	□ Yes → *Skip to H4.5* □ No
H4.3	Why the Bag Filter is not operational?	1. □ Under Maintenance 2. □ Not in Use 3. □ Others *(specify)* _____
H4.4	Since when Bag Filter is not operational?	|_dd_|/|__mm_|/|___yr___|
H4.5	**Type of Bag filter**	1. □ Reverse air type Fabric Filter → *Skip H4.6* 2. □ Pulse Jet Bag filter → *Go to Question H4.6* 3. □ Shaker type Bag filter → *Skip H4.6, H4.8 and H4.9!* 4. □ Other *(specify)*: _____ → *Skip H4.6*
H4.6	**If this is a pulsejet filter, how many pulses per minute?**	|__|__|__|

H4.7	**Details of Bags** *(Report the no. of bags and their dimensions in this question)*	**Number** *(in Nos.)*	**Length** *(in Meter)*	**Height** *(in Meter)*	**Diameter** *(in Meter)*

H4.8	**Number of Solenoid Valves**		
H4.9	**Compressor**		□ KW □ HP □ Other
H4.10	**Flue Gas Capacity**		□ Cubic meter/min □ Cubic meter/hr □ Other
H4.11	**Flue Gas Velocity**		□ Meter/sec □ Other
H4.12	**Is there any bag torn/broken in any way?**	1. □Yes 2. □No	

H4.13	Manufacturer Name:		H4.13.1	Model Name	
H4.14	Manufacturer Contact				
H4.15	Rated Efficiency of this Bag Filter	|__|__| %			
H4.16	Year of equipment purchase	|__|__|__|__|			
H4.17	Cost of Installation and Commissioning			□ Rupees □ Lakh □ **Other**	
H4.18	Annual power consumption costs and labour costs of this bag filter			□ Rupees □ Lakh □ **Other**	
H4.19	Annual maintenance cost of this APCD *(INCLUDE compressor and bag replacement costs, equipment repair)*			□ Rupees □ Lakh □ **Other**	
H4.20	Has this equipment ever undergone major modifications?	1. □ Yes 2. □ No → ***Skip to H4.23***			
H4.21	Which year did the most recent modifications take place?	|__|__|__|__|			
H4.22	How much did the modifications cost?			□ Rupees □ Lakh □ Other	
H4.23	Total no. of Filter Bags fitted inside bag house		Nos		
H4.24	Number of replacement bags purchased last year		Nos		
H4.25	Last time Chamber was cleaned	|__|__|/|__|__|/|__|__|__|__|			
H4.26	Cleaning Frequency (times per year)				
H4.27	Cleaning Method	1. □ Bag Washing 2. □ Scrubbing 3. □ Scrapping 4. □ Other *(specify)*: _____			

Section H5: ESP

H5.1	How many ESPs do you have? *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section I* 2. ☐ 1 3. ☐ 2 4. ☐ |_____|

ESP Module: Fill out for every ESP *(to be repeated "H5.1" number of times)*

H5.2	**Is this ESP operational at the time of the survey?**	☐ Yes → *Skip to H5.5* ☐ No		
H5.3	**Why the ESP is not operational?**	1. ☐ Under Maintenance 2. ☐ Not in Use 3. ☐ Others (*specify*) _____		
H5.4	**Since when ESP is not operational?**	|_dd_|/|_mn_|/|___yr___|		
H5.5	**Type of ESP** *(Tick more than one option if necessary)*	1. ☐ Plate & Wire 2. ☐ Tabular ESP 3. ☐ Wet ESP 4. ☐ Two Stage Precipitator	5. ☐ Hot Stage Precipitator 6. ☐ Cold Stage Precipitator 7. Dry stage precipitator 8. ☐ Other (*specify*): _____	

		Number of Fields *(in Nos.)*	**Number of Electrode Plates** *(in Nos.)*	**Total Collection Area** *(in meter square)*
H5.6	**Details of ESP** *(Report the no. of fields, electrode plates and their dimensions in this question)*			
H5.7	****No. of fields in operation** *(at the time of survey)*			Nos.

H5.8	**What is the treatment time?**	1. ☐ 15 secs 2. ☐ 30 secs 3. ☐ 45 secs 4. ☐ 60 secs 5. ☐ Other: (*specify*)_____	
H5.9	**Flue Gas Capacity**		☐ Cubic meter/min ☐ Cubic meter/hr ☐ Other
H5.10	**Flue Gas Velocity**		☐ Meter/sec ☐ Other
H5.11	**Installation before ID Fan?**	1. ☐ Yes 2. ☐ No	

H5.12	**Manufacturer Name:**		**H5.12.1**	**Model Name**	

H5.13	**Manufacturer Contact**		
H5.14	**Rated Efficiency of ESP**	|__|__| %	
H5.15	**Year of equipment purchase**	|__|__|__|__|	
H5.16	**Cost of Installation and Commissioning**		☐ Rupees ☐ Lakh ☐ Other
H5.17	**Annual power consumption costs and labor costs of this ESP**		☐ Rupees ☐ Lakh ☐ Other
H5.18	**Annual Maintenance cost of this ESP** *(Include: Equipment Repair)*		☐ Rupees ☐ Lakh ☐ Other
H5.19	**Has this equipment ever undergone major modifications?**	1. ☐ Yes 2. ☐ No **→ *Skip to H5.22***	
H5.20	**Which year did the most recent modifications take place?**	|__|__|__|__|	
H5.21	**How much did the modifications cost?**		☐ Rupees ☐ Lakh ☐ **Other**
H5.22	**Method of Dust Removal from ESP**	1. ☐ Manual 2. ☐ Continuous 3. ☐ Other (Specify) _____	
H5.23	**Last time Equipment was cleaned**	|__|__|/|__|__|/|__|__|__|__|	
H5.24	**Cleaning Frequency (times per year)**	|_____| times/year	
H5.25	**Method of Cleaning**	1. ☐ Scrubbing 2. ☐ Scrapping 3. ☐ Hammering 4. ☐ Other *(specify)*: _____	

Attachment I: ID Fans

I1	**How many ID Fans do you have?** *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section J* 2. ☐ 1 3. ☐ 2 4. ☐ |_____|

<table>
<tr><td colspan="4" align="center">ID Fan Module: Fill out for every ID Fan <u><i>(to be repeated "I1" number of times)</i></u></td></tr>
<tr>
<td>I2</td>
<td>Is this ID Fan common for more than one emissions source?</td>
<td colspan="2">☐ Yes → Explain: _____
☐ No</td>
</tr>
<tr>
<td></td>
<td></td>
<td align="center"><i>(numeric values only)</i></td>
<td>Unit of Measurement</td>
</tr>
<tr>
<td>I3</td>
<td>Rated power consumption of fan</td>
<td></td>
<td>1. ☐ Kwh
2. ☐ HP
3. ☐ Other</td>
</tr>
<tr>
<td>I4</td>
<td>Pressure of the fan</td>
<td></td>
<td>mmWC

☐ Other</td>
</tr>
<tr>
<td>I5</td>
<td>Designed RPM of the fan
<i>(RPM at max power output)</i></td>
<td></td>
<td>RPM</td>
</tr>
<tr>
<td>I6</td>
<td>RPM of the fan at the time of visit</td>
<td></td>
<td>RPM</td>
</tr>
<tr>
<td>I7</td>
<td>Is there a Variable Frequency Drive (VFD) installed for this fan?</td>
<td colspan="2">1. ☐ Yes, current frequency is \|_____\|% of the designed RPM <i>(as reported in 15</i>
2. ☐ No</td>
</tr>
</table>

Section J: Continuous Emissions Monitoring System

J1	**How many CEMS devices do you have?** *(operational and non-operational)*	1. ☐ 0 → *Skip this section, go to Section L* 2. ☐ 1 3. ☐ 2 4. ☐ |_____|

CEMS Module: Fill out for every CEMS device *(to be repeated "J1" number of times)*		

J2	**What existing continuous emissions monitoring system(s) is/are in place in the stack?** *(tick all that apply)*	1. ☐ CEMS for PM -> *continue section ONLY if this is checked, else skip to Section L* 2. ☐ CEMS for NOx 3. ☐ CEMS for NO2 4. ☐ CEMS for SOx 5. ☐ CEMS for SO2 6. ☐ CEMS for CO 7. ☐ CEMS for CO2 8. ☐ CEMS for Other Gases *(specify pollutants monitored)*:_____
	J3a. Manufacturer of the PM CEMS:	**J3b. Model of the PM CEMS:**
J3	**Name of the supplier:**	1. ☐ Chemtrols 2. ☐ Forbes Marshall 3. ☐ ShreeTec 4. ☐ ICE Asia 5. ☐ Others *(specify):* _____
J4	**Measurement Principle of the PM CEMS?**	1. ☐ DC Triboelectric 2. ☐ AC Triboelectric 3. ☐ Electrodynamic 4. ☐ Single Pass Opacity 5. ☐ Double Pass Opacity 6. ☐ Dual Beam Opacity 7. ☐ Dynamic Opacity 8. ☐ Forward Light Scattering 9. ☐ Backward Light Scattering 10. ☐ Light Scattering (Extractive) for Wet Gas 11. ☐ Others *(specify):* _____
J5	**Is this CEMS device installed and calibrated?**	1. ☐ Purchased but not installed or calibrated → *SKIP J12* 2. ☐ Installed but not calibrated→ *SKIP J12* 3. ☐ Both installed and calibrated
J6	**Which date was this PM CEMS installed?**	|____|____|/|____|____|/|____|____|____|____|

J7	What was the installation cost for this PM CEMS?		☐ Rupees ☐ Lakh
J8	Annual Operating and Maintenance cost of this PM CEMS Device (Include power, internet labor and maintenance costs)		☐ Rupees ☐ Lakh
J9	Annual Maintenance Contract (AMC) Signed	1. ☐ Yes 2. ☐ No ➔ *Skip to J11*	
J10	Cost of Annual maintenance contract (AMC)		Rupees
J11	Cleaning frequency	|____|____|	☐ **times/month** ☐ **times/year**
J12	When was the instrument calibrated last?	|____|____|/|____|____|/|____|____|____|____|	

J13	Are there dedicated staffs for PM CEMS?	1. ☐ Yes 2. ☐ No ➔ *Skip to J16*
J14	Name of the concerned person	
J15	Contact Number	
J16	Has this PM CEMS undergone any major change?	1. ☐ Yes 2. ☐ No ➔ *Skip to J20*
J17	When did the modification take place?	|____|____|/|____|____|/|____|____|____|____|
J18	How much did the modification cost?	☐ Rupees ☐ Lakh
J19	What was the modification?	
J20	Did you buy a new PC for CEMS?	1. ☐ Yes **2. ☐ No**
J21	Do you regularly check the CEMS data?	1. ☐ Yes 2. ☐ No
J22	Have you made any modification in Boiler, Thermopack, and APCDs after CEMS installation?	1. ☐ Yes 2. ☐ No *-> If no, end section*
J23	Equipment Modified	1. ☐ Boiler 2. ☐ Thermopack 3. ☐ Settling Chamber 4. ☐ Cyclone 5. ☐ Scrubber 6. ☐ Bag Filter 7. ☐ ESP
J24	What was the modification?	

		Section L: Survey Notes
L1.	****End Time**	|___|___|hrs|___|___|mins
L2.	**How many people were present at the time of the interview?**	|___|___|
L3.	**Are you satisfied with the answers given by the respondent(s)?**	1. ☐ Yes 2. ☐ No
L4.	**Do you have any other comments?**	☐ Yes ☐ No
L5.	****Survey Status Code**	1. ☐ SS01 - Complete 2. ☐ SS02 – Partially Complete 3. ☐ SS03 – Respondent Unavailable 4. ☐ SS04 – Industry temporarily closed 5. ☐ SS05 – Industry permanently closed 6. ☐ SS06 – Industry not found 7. ☐ SS07 – Did not consent 8. ☐ SS08 – Refused to complete survey