	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_name*
	Industry Address	Industry_address
	Cluster	*cluster*
	GPCB ID	*gpcb_id*
	Industry Size	*Size*
A4.	Is this information correct?	□ Yes □ No, Re-enter prefilled industry information
A5.	Telephone number(s)	___|___|___|___|___|___|___|___|___|___|
A6.	Email Address(es)	

	Section B: Survey Information			
B1.	Surveyor Name		Surveyor Code (calc field)	___|___|
B2.	Supervisor name		Supervisor Code (calc field)	___|___|
B3.	Total number of respondents Present	[numeric field]		
B4.	Industry respondents (Please enter the name and contact details of any industry employees that answered questions)	Name	Designation	Contact Number

Section C-L: Technical Details		
	Note: This section consists of information pertaining to industry stack characteristics.	
C1.	Number of PM Consent Stacks	*Total stacks*
C1.1.	Is this information correct?	□Yes, skip C1.2. □No, Ask C1.2.
C1.2.	What is the nature of re-entered information?	□ Modification, Re-enter prefilled industry information □ Correction, Re-enter prefilled industry information
C2.	How many stacks added	[numeric field]
	Stack and CEMS Module (repeated C1+C2 times)	
	Display Prefilled Industry Information C1 no. of times	
C3.1	Is this stack new?	*1. Yes* *2. No*

	Stack ID	***Stack ID***		
	Stack Diameter	***Stack Diameter***		
	Stack Diameter units	***Stack Diameter Units***		
Note: Please check the parallel chain diagram provided alongside the survey.				
C3.2	**Is this information correct?**	**□Yes, Skip C3.1** **□No, Ask C3.1**		
C3.3	**What is the nature of re-entered information?**	**□ Modification, Re-enter prefilled industry information** **□ Correction, Re-enter prefilled industry information**		
C3.4	**Stack position**	**1. Stack never existed, skip to next section** **2. Stack removed, skip to next section** **3. No change, ask C4**		
Chain operation and maintenance information				
C4.	**No. of parallel chains**			
C4.1 to C4.4 to be repeated C4. No. of times				
C4.1	**Average daily chain operating hours during FY 2020-21**	**|_____|**		
C4.2.	**Average chain operating days per month during FY 2020-21**	**|_____|**		
C4.3	**Chain Cleaning frequency**	*1. □ Weekly* *2. □ Bi-weekly* *3. □ Monthly* *4. □ Yearly* *99. □ Don't know*		
C4.4	**Cleaning Costs**	**Cleaning days/month**	**No. of cleaning workers**	**Wages/day**
C5.	**Do you have any other comments for the stack and chain sections?**			

Boiler Module (repeated for each Boiler)		
Note: This section consists of information pertaining to Boiler operations and maintenance.		
Display prefilled industry information		
D1.	**Recorded no. of boilers**	*No. of boilers*
D2.	**How many new Boilers are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing boiler and needs to be repeated D1+D2 number of times.		
D3.	**Is this boiler new?**	□ Yes, skip to D4.1 □ No, prefill D3.1 to D3.8, ask D3.9 □ Yes, Correction, skip to D4.1
Display next section (prefilled industry information and next three questions) D1 times		
D3.1	**Stack ID**	*Boiler Stack ID*

D3.2	**Chain ID**	*Boiler Chain ID*
D3.3	**Position ID:**	*0*
D3.4	**Unique Boiler ID:**	*Unique Boiler ID*
D3.5	**Installation Year:**	*Boiler Installation Year*
D3.6	**Cost of Installation and Commissioning of the Boiler (in lakhs):**	*Boiler Installation Cost*
D3.7	**Type of Boiler:**	*Boiler Type*
D3.8	**Boiler Capacity (in TPH):**	*Steam generating Capacity (g5_steam_gen_cap_n)*
D3.9	**Is this information correct?**	□ Yes, skip D3.9.1 □ No, ask D3.9.1
D3.9.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**
D3.10	**Position change?**	1. In original position 2. In changed position, but old Boiler (allows to edit directly) – Mark change in parallel chain diagram 3. Boiler removed. -> Skip section 4. Boiler never existed. -> Skip section
D3.11	**Fuels used in the boiler in the last 12 months**	**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): _____** **20.** □**Mix Indian + Imported Coal** **21.** □ **Mix Indian Coal + Wood** **22.** □ **Mix Lignite + Wood** **23. Mix Imported coal + lignite** **99.** □ **Don't know**
D3.12	**Average daily operating hours**	|_____|
Repeat next section D2 number of times		
D4.1	**Stack ID:**	
D4.2	**Chain ID:**	
D4.3	**Position ID:**	
D4.4	**Unique Boiler ID:**	
D4.5	**Installation Year:**	
D4.6	**Cost of Installation and Commissioning of the Boiler (in lakhs):**	
D4.7	**Type of Boiler**	*1.* □ *Fire Tube* *2.* □ *Water Tube* *3.* □ *Smoke-cum-Water Tube* *4.* □ *Packaged Boiler* *5.* □ *Others, please specify*

D4.8	**Boiler Capacity (in TPH):**		
D4.9	**Which of the following fuels does the boiler use?**	*Options same as D3.10*	
D4.10	**Average daily operating hours**	|_____|	
	This section consists of information pertaining to boiler equipment, operating and maintenance costs of Boiler components. D5. To D14.2 to be repeated D1+D2 no. of times.		
D5.	**No. of ID fans**		
	To be repeated previous selection number of times		
D5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
D5.2	**Operating Hours per day**		
D6.	**No. of FD fans**		
	To be repeated previous selection number of times		
D6.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
D6.2	**Operating Hours per day**		
D7.	**No. of PA fans**		
	To be repeated previous selection number of times		
D7.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
D7.2	**Operating Hours per day**		
D8.	**No. of Feed Water Pumps**		
	To be repeated previous selection number of times		
D8.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
D8.2	**Operating Hours per day**		

Note: This section consists of information pertaining to input and maintenance costs of the Boiler.

		Water Use/day		**Water cost/(Kilolitre or litre)**		**Chemicals cost/mo**	
D9.	**Inputs Cost/Month**		***Units*** ***1. □ Litre*** ***2. □ Kilolitre***		***Units*** ***1.□ Rs/ Litre*** ***2.□Rs/ Kilolitre***		*1. □ Rupees* *2. □ Lakh*
D10.	**Annual Testing Cost**					*1. □ Rupees* *2. □ Lakh*	

	Boiler Maintenance & Modifications Costs	
D11.	**Which of these maintenance changes have been made in the boiler house equipment in the last year?**	*1. □ Nozzle cleaning/replacement/repair* *2. □ Boiler tube replacement/repair* *3. □ Valve and piping replacement/repair* *4. □ Sensor replacement* *5. □ ID Fan motor replacement/rewinding/repair* *6. □ FD Fan motor replacement/rewinding/repair* *7. □ PA Fan motor replacement/rewinding/repair* *8. □ Repair of furnace area* *9. □ Repair on fuel feeder*

		10. □ FWP repair/rewinding/replacement *11. □ Welding works* *12. □ Insulation repair/replacement* *13. □ Others, please specify* *14. □ None, skip to D12*	
Repeat next question previous selection number of times			
D11.1	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Repeat next question previous selection number of times			
D12.	**Which of these modifications have been made in the boiler house equipment in the last year?**	*1. □ Furnace area changed* *2. □ Insulation quality change* *3. □ Change in nozzles (number, size, type)* *4. □ Changed boiler tubing (number, size, pass)* *5. □ Converted Operating System from Manual to Automatic* *6. □ Change in power rating of ID/FD Fans/FWP/PA fan* *7. □ Change in fuel feeder capacity* *8. □ First time insulation* *9. □ Others, please specify* *10. □ None, skip to D13*	
Repeat next question previous selection number of times			
D12.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
APH/WPH Module			
D13.	**Which heat recovery device is present in the boiler house?**	*1. □ WPH/Economizer* *2. □ APH* *3. □ None, skip to D15*	
D13.1 to D14.2 to be repeated for each device selected in D13			
Repeat next question for each the device selected in D13			
D13.1	**Which of these maintenance changes have been made in the heat recovery device in the last year?**	*1. □ Tube replacement/repair* *2. □ Welding works* *3. □ Others, please specify* *4. □ None, skip to D14.1*	
Repeat next question previous selection number of times			
D13.2	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
D14.1	**Which of these modifications have been made in the heat recovery device in the last year?**	*1. □ Change in area of heat transfer* *2. □ First time insulation* *3. □ Change in APH/WPH tubes (size, pass, number)* *3. □ Others, please specify* *4. □ None, skip to D15*	
Repeat next question previous selection number of times			
D14.2	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Operational Status (asked only once)			

D15.	**Are all boilers operational at the time of the survey?**	□ Yes, Skip to next section □ No
D15.1	**Why are some boilers not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*
D16.	**Do you have any other comments?**	

TFH Module (repeated for each TFH)		
Note: This section consists of information pertaining to TFH operations and maintenance.		
Display prefilled industry information		
E1.	**Recorded no. of TFH**	*No. of TFH*
E2.	**How many new TFH are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing TFH and needs to be repeated E1+E2 number of times.		
E3.	**Is this TFH new?**	□ Yes, skip to E4.1 □ No, prefill E3.1 to E3.7, ask E3.8 □ Yes, Correction, skip to E4.1
Display next section (prefilled industry information and next three questions) E1 times		
E3.1	**Stack ID**	*TFH Stack ID*
E3.2	**Chain ID**	*TFH Chain ID*
E3.3	**Position ID:**	*TFH Position ID*
E3.4	**Unique TFH ID:**	*Unique TFH ID*
E3.5	**Installation Year:**	*TFH Installation Year*
E3.6	**Cost of Installation and Commissioning of the TFH (in lakhs):**	*TFH Installation Cost*
E3.7	**Thermopack Capacity (in U):**	*Steam generating Capacity (h5_thermo_cap_n)*
E3.8	**Is this information correct?**	□ Yes, skip E3.8.1 □ No, ask E3.8.1
E3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**
E3.9	**Position change?**	1. In original position 2. In changed position, but old TFH (allows to edit directly) – Mark change in parallel chain diagram 3. TFH removed. -> Skip section 4. TFH never existed. -> Skip section
E3.10	**Fuels used in the TFH in the last 12 months**	**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): _____** **20. □Mix Indian + Imported Coal** **21. □ Mix Indian Coal + Wood** **22. □ Mix Lignite + Wood** **23. Mix Imported coal + lignite** **99. □ Don't know**	
E3.11	**Average daily operating hours**	|_____|	
Repeat next section E2 number of times			
E4.1	**Stack ID:**		
E4.2	**Chain ID:**		
E4.3	**Position ID:**		
E4.4	**Unique TFH ID:**		
E4.5	**Installation Year:**		
E4.6	**Thermopack Capacity (in U):**		
E4.7	**Cost of Installation and Commissioning of the TFH (in lakhs):**		
E4.8	**Which of the following fuels does the TFH use?**	*Options same as E3.9*	
E4.9	**Average daily operating hours**	|_____|	
This section consists of information pertaining to TFH equipment, operating and maintenance costs of TFH components. E5. To E12.2 to be repeated E1+E2 no. of times.			
E5.	**No. of ID fans**		
To be repeated previous selection number of times			
E5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
E5.2	**Operating Hours per day**		
E6.	**No. of FD fans**		
To be repeated previous selection number of times			
E6.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
E6.2	**Operating Hours per day**		
E7.	**No. of PA fans**		
To be repeated previous selection number of times			
E7.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
E7.2	**Operating Hours per day**		

E8.	**No. of Oil Circulation Pumps**		
To be repeated previous selection number of times			
E8.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
E8.2	**Operating Hours per day**		
TFH Maintenance & Modifications Costs			
E9.	**Which of these maintenance changes have been made in the last year?**	*1. □ Nozzle cleaning/replacement/repair* *2. □ TFH tube replacement/repair* *3. □ Valve and piping replacement/repair* *4. □ Sensor replacement* *5. □ ID Fan motor replacement/rewinding* *6. □ FD Fan motor replacement/rewinding* *7. □ PA Fan motor replacement/rewinding* *8. □ Repair of furnace area* *9. □ Repair on fuel feeder* *10. □ Welding works* *11. □ Insulation repair/replacement* *12. □ OCP replacement/rewinding/repair* *13. □ Oil Dopping* *14. □ Others, please specify* *15. None, skip to E10*	
Repeat next question previous selection number of times			
E9.1	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Repeat next question previous selection number of times			
E10.	**Which of these modifications have been made in the last year?**	*1. □ Furnace area changed* *2. □ Insulation quality change* *3. □ Change in furnace nozzles (number, size, type)* *4. □ Changed TFH tubing (number, size, pass)* *5. □ Converted Operating System from Manual to Automatic* *6. □ Change in power rating of ID/FD/OCP/PA Fans* *7. □ Change in fuel feeder capacity* *8. □ First time insulation* *9. □ Others, please specify* *10. None, skip to E11*	
	Modifications Module (repeat next two questions previous selection number of times)		
E10.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
APH/WPH Module (to be repeated E1+E2 no. of times)			
E11.	**Which heat recovery device is present in the TFH?**	*1. □ WPH/Economizer* *2. □ APH* *3. □ None, skip to E13*	
Repeat next question for each the device selected in E11			
E11.1	**Which of these maintenance changes have been made in the heat**	*1. □ Tube replacement/repair* *2. □ Welding works* *3. □ Others, please specify* *4. □ None, skip to E12.1*	

	recovery device in the last year?		
Repeat next question previous selection number of times			
E11.2	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
E12.1	**Which of these modifications have been made in the heat recovery device in the last year?**	*1. □ Change in area of heat transfer* *2. □ First time insulation* *3. □ Change in APH/WPH tubes (size, pass, number)* *3. □ Others, please specify* *4. □ None, skip to E13*	
Repeat next question previous selection number of times			
E12.2	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Operational Status (repeated only once)			
E13.	**Are all TFH operational at the time of the survey?**	□ Yes, Skip to next section □ No	
E13.1	**Why are some TFH not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
E14.	**Do you have any other comments?**		

HAG Module (repeated for each HAG)		
Note: This section consists of information pertaining to HAG operations and maintenance.		
Display prefilled industry information		
F1.	**Recorded no. of HAG**	*No. of HAG*
F2.	**How many new HAGs are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing HAG and needs to be repeated F1+F2 number of times.		
F3.	**Is this HAG new?**	□ Yes, skip to F4.1 □ No, prefill F3.1 to F3.7, ask F3.8 □ Yes, Correction, skip to F4.1
Display next section (prefilled industry information and next three questions) F1 times		
F3.1	**Stack ID**	*HAG Stack ID*
F3.2	**Chain ID**	*HAG Chain ID*
F3.3	**Position ID:**	*HAG Position ID*
F3.4	**Unique HAG ID:**	*Unique HAG ID*
F3.5	**Installation Year:**	*HAG Installation Year*
F3.6	**Cost of Installation and Commissioning of the HAG (in lakhs):**	*HAG Installation Cost*

F3.7	**HAG Capacity (in U):**	*Steam Generating Capacity (h5_thermo_cap_n)*
F3.8	**Is this information correct?**	□ Yes, skip F3.8.1 □ No, ask F3.8.1
F3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**
F3.9	**Position change?**	1. In original position 2. In changed position, but old HAG (allows to edit directly) – Mark change in parallel chain diagram 3. HAG removed. -> Skip section 4. HAG never existed. -> Skip section
F3.10	**Fuels used in the HAG in the last 12 months**	**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): _____** **20. □Mix Indian + Imported Coal** **21. □ Mix Indian Coal + Wood** **22. □ Mix Lignite + Wood** **23. Mix Imported coal + lignite** **99. □ Don't know**
F3.11	**Average daily operating hours**	|_____|
Repeat next section F2 number of times		
F4.1	**Stack ID:**	
F4.2	**Chain ID:**	
F4.3	**Position ID:**	
F4.4	**Unique HAG ID:**	
F4.5	**Installation Year:**	
F4.6	**Cost of Installation and Commissioning of the HAG (in lakhs):**	
F4.7	**HAG Capacity (in U):**	
F4.8	**Which of the following fuels does the HAG use?**	*Options same as F3.9*
F4.9	**Average daily operating hours**	|_____|
This section consists of information pertaining to HAG equipment, operating and maintenance costs of HAG components. F5. To F12.2 to be repeated F1+F2 no. of times.		
F5.	**No. of ID fans**	
To be repeated previous selection number of times		
F5.1	**Power Rating of the equipment**	*1. □ HP* *2. □ KW*
F5.2	**Operating Hours per day**	

F6.	**No. of FD fans**		
To be repeated previous selection number of times			
F6.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
F6.2	**Operating Hours per day**		
F7.	**No. of PA fans**		
To be repeated previous selection number of times			
F7.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
F7.2	**Operating Hours per day**		
F8.	**No. of CA fan**		
To be repeated previous selection number of times			
F8.1	**Power Rating of the Equipment**		*1. □ HP* *2. □ KW*
F8.2	**Operating Hours per day**		
Note: This section consists of information pertaining to input and maintenance costs of the HAG.			
HAG Maintenance & Modifications Costs			
F9.	**Which of these maintenance changes have been made in the last year?**	*1. □ Nozzle cleaning/replacement/repair* *2. □ HAG tube replacement/repair* *3. □ Valve and piping replacement/repair* *4. □ Sensor replacement* *5. □ ID Fan motor replacement/rewinding/repair* *6. □ FD Fan motor replacement/rewinding/repair* *7. □ Repair of furnace area* *8. □ Repair on fuel feeder* *9. □ CA Fan repair/rewinding/replacement* *10. □ PA Fan replacement/rewinding/repair* *11. □ Welding works* *12. □ Insulation repair/replacement* *13. □ PA Fan replacement/rewinding/repair* *14. □ Air filter replacement* *15. □ Others, please specify* *16. None, skip to F10*	
Repeat next question previous selection number of times			
F9.1	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Repeat next question previous selection number of times			
F10.	**Which of these modifications have been made in the last year?**	*1. □ Furnace area changed* *2. □ Insulation quality change* *3. □ Change in furnace nozzles (number, size, type)* *4. □ Changed HAG tubing (number, size, pass)* *5. □ Converted Operating System from Manual to Automatic* *6. □ Change in power rating of ID/FD/CA/PA Fans* *7. □ Change in fuel feeder capacity* *8. □ First time insulation* *9. □ Air filter quality change* *10. □ Others, please specify* *11. None, Skip to F11*	

	Modifications Module (repeat next two questions previous selection number of times)		
F10.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
	APH/WPH Module		
F11.	**Which heat recovery device is present in the HAG?**	*1. □ WPH/Economizer* *2. □ APH* *3. □ None, skip to F13*	
	Repeat next question for each the device selected in F11		
F11.1	**Which of these maintenance changes have been made in the heat recovery device in the last year?**	*1. □ Tube replacement/repair* *2. □ Welding works* *3. □ Others, please specify* *4. □ None, skip to F12.1*	
	Repeat next question previous selection number of times		
F11.2	**How much did the maintenance cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
F12.1	**Which of these modifications have been made in the heat recovery device in the last year?**	*1. □ Change in area of heat transfer* *2. □ First time insulation* *3. □ Change in APH/WPH tubes (size, pass, number)* *3. □ Others, please specify* *4. □ None, skip to F13*	
	Repeat next question previous selection number of times		
F12.2	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
	Operational Status (repeated only once)		
F13.	**Are all HAG operational at the time of the survey?**	□ Yes, Skip to next section □ No	
F13.1	**Why are some HAG not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
F14.	**Do you have any other comments?**		
	Cyclone Module (repeated for each Cyclone)		
	Note: This section consists of information pertaining to Cyclone operations and maintenance.		
	Display prefilled industry information		
G1.	**Recorded no. of cyclones**	*No. of Cyclones*	
G2.	**How many new cyclones are added?**	*(number)*	
	Note: This section consists of information pertaining to each new and existing cyclone and needs to be repeated G1+G2 number of times.		
G3.	**Is this cyclone new?**	□ Yes, skip to G4.1 □ No, prefill G3.1 to G3.7, ask G3.8 □ Yes, Correction, skip to G4.1	
	Display prefilled industry information previous number of times		

G3.1	**Stack ID**	*Cyclone Stack ID*	
G3.2	**Chain ID:**	*Cyclone Chain ID*	
G3.3	**Position ID:**	*Cyclone Position ID*	
G3.4	**Unique Cyclone ID:**	*Unique Cyclone ID*	
G3.5	**Type of Cyclone Design**	*Cyclone Type*	
G3.6	**Installation Year:**	*Cyclone Installation Year*	
G3.7	**Cost of Installation and Commissioning of the Cyclone (in lakhs):**	*Cyclone Installation Cost*	*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
G3.8	**Is this information correct?**	□ Yes, skip G3.8.1 □ No, ask G3.8.1	
G3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**	
G3.9	**Position change?**	1. In original position 2. In changed position, but old cyclone (allows to edit directly) – Mark change in parallel chain diagram 3. Cyclone removed. -> Skip section 4. Cyclone never existed. -> Skip section	
G3.10	**What is the brand/manufacturer of the Cyclone?**		
G3.11	**Average daily operating hours**	|_____|	
		Repeat the entire module G2 times.	
G4.1	**Stack ID**		
G4.2	**Chain ID:**		
G4.3	**Position ID:**		
G4.4	**Unique Cyclone ID:**		
G4.5	**Type of Cyclone Design**	□ Trema □ MDC	
G4.6	**Installation Year:**	|_____|	
G4.7	**Cost of Installation and Commissioning of the Cyclone (in lakhs):**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
G4.8	**What is the brand/manufacturer of the Cyclone?**		
G4.9	**Average daily operating hours**	|_____|	
This section consists of information pertaining to cyclone equipment, operating and maintenance costs of cyclone components. G5. To G7.2 to be repeated G1+G2 no. of times.			
G5.	**No. of Rotary Motors**		
Next two questions to be repeated previous selection number of times			
G5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*

G5.2	**Operating Hours per day**		
Maintenance & Modification Module			
G6.	**Which of these maintenance changes have been made in the cyclone in the last year?**	*1. □ Welding works* *2. □ Rotary motor replacement/repair* *3. □ Rotary Valve replacement/repair* *4. □ Others, please specify* **5. None, skip to G7**	
Repeat next question previous selection number of times			
G6.1	**How much did the maintenance change cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
G7	**Which of these modifications have been made in the cyclone in the last year?**	*1. □ Change in power rating* *2. □ Cyclone design change* *3. □ Others, please specify* *4. None, Skip to G8*	
	Repeat next question previous selection number of times		
G7.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Cyclone Operational Status (to be asked only once)			
G8.	**Are all cyclones operational at the time of Survey?**	☐ Yes, Skip to next section □ No	
G8.1	**Why are some cyclones not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
G9.	**Do you have any other comments?**		

Bag Filter Module (repeated for each Bag Filter)		
Note: This section consists of information pertaining to Bag Filter operations and maintenance.		
Display prefilled industry information		
H1.	**Recorded no. of Bag Filter**	*No. of Bag Filters*
H2.	**How many new bag filters are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing bag filter and needs to be repeated H1+H2 number of times.		
H3.	**Is this bag filter new?**	□ Yes, skip to H4.1 □ No, prefill H3.1 to E3.7, ask H3.8 □ Yes, Correction, skip to H4.1
Display prefilled industry information previous number of times		
H3.1	**Stack ID**	*Bag Filter Stack ID*
H3.2	**Chain ID**	*Bag Filter Chain ID*
H3.3	**Position ID:**	*Bag Filter Position ID*
H3.4	**Unique Bag Filter ID:**	*Unique Bag Filter ID*

H3.5	**Type of Bag Filter Design**	*Bag Filter Type*	
H3.6	**Installation Year:**	*Bag Filter Installation Year*	
H3.7	**Cost of Installation and Commissioning of the Bag Filter (in lakhs):**	*Bag Filter Installation Cost*	
H3.8	**Is this information correct?**	□ Yes, skip H3.8.1 □ No, ask H3.8.1	
H3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**	
H3.9	**Position change?**	1. In original position 2. In changed position, but old Bag filter (allows to edit directly) – Mark change in parallel chain diagram 3. Bag Filter removed. -> Skip section 4. Bag filter never existed. -> Skip section	
H3.10	**What is the brand/manufacturer of the Bag Filter?**		
H3.11	**Average daily operating hours**	|_____|	
Repeat the entire module H2 times.			
H4.1	**Stack ID**		
H4.2	**Chain ID**		
H4.3	**Position ID**		
H4.4	**Unique Bag Filter ID:**		
H4.5	**Type of Bag Filter Design**	□ Pulse Jet □ Shaker □ Reverse Air □ Other, specify _____	
H4.6	**Installation Year:**	|_____|	
H4.7	**Cost of Installation and Commissioning of the Bag Filter (in lakhs):**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
H4.8	**What is the brand/manufacturer of the Bag Filter?**		
H4.9	**Average daily operating hours**	|_____|	
This section consists of information pertaining to bag filter equipment, operating and maintenance costs of bag filter components. H5. To H8.1 to be repeated H1+H2 no. of times.			
Rotary Module			
H5.	**No. of Rotary Motors**		
Next two questions to be repeated previous selection number of times			
H5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
H5.2	**Operating Hours per day**		
	Compressor Module		

H6.	**No. of Compressors**		
Next two questions to be repeated previous selection number of times			
H6.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
H6.2	**Operating Hours per day**		
Maintenance & Modification Module			
H7.	**Which of these maintenance changes have been made in the Bag Filter in the last year?**	*1. □ Bag replacement* *2. □ Compressor motor replacement* *3. □ Shaker motor repair/replacement/rewinding* *4. □ Solenoid valve repair/replacement/cleaning* *5. □ Rotary motor replacement/repair/rewinding* *6. □ Rotary Valve replacement/repair* *7. □ Welding works* *8. □ Others, please specify* 9. None, skip to H8	
Repeat next question previous selection number of times			
H7.1	**How much did the maintenance change cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
H8.	**Which of these modifications have been made in the bag filter in the last year?**	*1. □ Change in power rating of motors/compressor* *2. □ Change in bags (size, number, quality)* *3. □ Change in solenoid valve (capacity, number)* *2. □ Change in bag rim/ring size* *4. □ Others, please specify* *5. None, skip to H9*	
	Modifications Module (repeat next two questions previous selection number of times)		
H8.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Bag Filter Operational Status (to be asked only once)			
H9.	**Are all bag filters operational at the time of Survey?**	☐ Yes, Skip to next section □ No	
H9.1	**Why are some bag filters not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
H10.	**Do you have any comments?**		

Scrubber Module (repeated for each Scrubber)		
Note: This section consists of information pertaining to Scrubber operations and maintenance.		
Display prefilled industry information		
J1.	**Recorded no. of Scrubber**	*No.of Scrubbers*
J2.	**How many new scrubbers are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing scrubber and needs to be repeated J1+J2 number of times.		

J3.	**Is this scrubber new?**	□ Yes, skip to J4.1 □ No, prefill J3.1 to J3.7, ask J3.8 □ Yes, Correction, skip to J4.1
J3.1	**Stack ID**	*Scrubber Stack ID*
J3.2	**Chain ID:**	*Scrubber Chain ID*
J3.3	**Position ID:**	*Scrubber Position ID*
J3.4	**Unique Scrubber ID:**	*Unique Scrubber ID*
J3.5	**Type of Scrubber Design:**	*Scrubber Design*
J3.6	**Installation Year:**	*Scrubber Installation Year*
J3.7	**Cost of Installation and Commissioning of the Scrubber (in lakhs):**	*Scrubber Installation Cost*
J3.8	**Is this information correct?**	□ Yes, skip J3.8.1 □ No, ask J3.8.1
J3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**
J3.9	**Position change?**	1. In original position 2. In changed position, but old scrubber (allows to edit directly) – Mark change in parallel chain diagram 3. Scrubber removed. -> Skip section 4. Scrubber never existed. -> Skip section
J3.10	**What is the brand/manufacturer of the Scrubber?**	
J3.11	**Average daily operating hours**	|_____|
Repeat the entire module J2 times.		
J4.1	**Stack ID:**	
J4.2	**Chain ID:**	
J4.3	**Position ID:**	
J4.4	**Unique Scrubber ID:**	
J4.5	**Type of Scrubber Design**	□ Tower □ Ventury
J4.6	**Installation Year:**	|_____|
J4.7	**Cost of Installation and Commissioning of the Scrubber (in lakhs):**	
J4.8	**What is the brand/manufacturer of the Scrubber?**	
J4.9	**Average daily operating hours**	|_____|
	This section consists of information pertaining to scrubber equipment, operating and maintenance costs of scrubber components. J5. To J7.1 to be repeated J1+J2 no. of times.	
	Circulation Pump Module	

J5.	**No. of Water Circulation Pumps**		
Next two questions to be repeated previous selection number of times			
J5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
J5.2	**Operating Hours per day**		
Maintenance & Modification Module			
J6.	**Which of these maintenance changes have been made in the scrubber in the last year?**	*1. □ WCP replacement/rewinding* *2. □ Color and Coating* *3. □ Valve and piping repair/replacement/cleaning* *5. □ Nozzle replacement/repair* *7. □ Welding works* *8. □ Others, please specify* *9. None, Skip to J7*	
Repeat next question previous selection number of times			
J6.1	**How much did the maintenance change cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
J7.	**Which of these modifications have been made in the scrubber in the last year?**	*1. □ Change in power rating of WCP* *2. □ Change in nozzle numbers* *3. □ Add new stage* *4. □ Others, please specify* *5. None, skip to J8*	
	Modifications Module (repeat next two questions previous selection number of times)		
J7.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
Scrubber Operational Status (to be asked only once)			
J8.	**Are all scrubbers operational at the time of Survey?**	☐ Yes, Skip to next section □ No	
J8.1	**Why are some scrubbers not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
J9.	**Do you have any comments?**		

ESP Module (repeated for each ESP)		
Note: This section consists of information pertaining to ESP operations and maintenance.		
Display prefilled industry information		
K1.	**Recorded no. of *ESP***	*No. of ESP*
K2.	**How many new ESP are added?**	*(number)*
Note: This section consists of information pertaining to each new and existing ESP and needs to be repeated K1+K2 number of times.		
K3.	**Is this ESP new?**	□ Yes, skip to K4.1 □ No, prefill K3.1 to K3.7, ask K3.8 □ Yes, Correction, skip to K4.1

K3.1	**Stack ID:**	*ESP Stack ID*
K3.2	**Chain ID:**	*ESP Chain ID*
K3.3	**Position ID:**	*ESP Position ID*
K3.4	**Unique ESP ID:**	*Unique ESP ID*
K3.5	**Type of ESP Design**	*ESP Type*
K3.6	**Installation Year:**	*ESP Installation Year*
K3.7	**Cost of Installation and Commissioning of the ESP (in lakhs):**	*ESP Installation Cost*
K3.8	**Is this information correct?**	□ Yes, skip K3.8.1 □ No, ask K3.8.1
K3.8.1	**What is the nature of re-entered information?**	□ **Modification, Re-enter prefilled industry information** □ **Correction, Re-enter prefilled industry information**
K3.9	**Position change?**	1. In original position 2. In changed position, but old ESP (allows to edit directly) – Mark change in parallel chain diagram 3. ESP removed. -> Skip section 4. ESP never existed. -> Skip section
K3.10	**What is the brand/manufacturer of the ESP?**	
K3.11	**Average daily operating hours**	|_____|
	Repeat the entire module K2 times.	
K4.1	**Stack ID:**	
K4.2	**Chain ID:**	
K4.3	**Position ID:**	
K4.4	**Unique ESP ID:**	
K4.5	**Type of ESP Design**	□ Plate & Wire □ Dry Stage Precipitator □ Hot Stage Precipitator □ Twin Stage Precipitator □ Other, specify _____
K4.6	**Installation Year:**	|_____|
K4.7	**Cost of Installation and Commissioning of the ESP (in lakhs):**	
K4.8	**What is the brand/manufacturer of the ESP?**	
K4.9	**Average daily operating hours**	|_____|
	This section consists of information pertaining to ESP equipment, operating and maintenance costs of ESP components. K5. To K8.1 to be repeated K1+K2 no. of times.	
	Rotary Module	
K5.	**No. of Rotary Motors**	

Next two questions to be repeated previous selection number of times			
K5.1	**Power Rating of the equipment**		*1. □ HP* *2. □ KW*
K5.2	**Operating Hours per day**		
	Transformer Module		
K6.	**No. of Transformers**		
Next two questions to be repeated previous selection number of times			
K6.1	**Power Rating of the equipment**		*1. □ KvA*
K6.2	**Operating Hours per day**		
Maintenance & Modification Module			
K7.	**Which of these maintenance changes have been made in the ESP in the last year?**	*1. □ Insulation replacement* *2. □ Transformer Maintenance* *3. □ Electroplate Replacement* *4. □ Sensor replacement* *5. □ Hammering motor replacement/repair* *6. □ Rotary valve repair/replacement/cleaning* *7. □ Rotary motor replacement/rewinding* *8. □ Welding works* *9. □ Others, please specify* *10. None, skip to K8*	
Repeat next question previous selection number of times			
K7.1	**How much did the maintenance change cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
K8.	**Which of these modifications have been made in the ESP in the last year?**	*1. □ Change in power rating of Rotary module/transformer* *2. □ Insulation change* *3. □ Others, please specify* *4. None, skip to K9*	
	Modifications Module (repeat next two questions previous selection number of times)		
K8.1	**How much did the modification cost?**		*1. □ Rupees* *2. □ Lakh* *3. □ Crore*
ESP Operational Status (to be asked only once)			
K9.	**Are all ESP operational at the time of Survey?**	☐ Yes, Skip to next section □ No	
K9.1	**Why are some ESP not operational?**	*1. □ Under maintenance* *2. □ Not in use* *3. □ Industry closed due to the Covid-19 pandemic* *4. □ Others, please specify*	
K10.	**Do you have any comments?**		

Section L - Modification module		
L1.	**Have you made any other modifications to in the Boiler House since July 2021?**	□ Yes □ No, skip to next section

Modifications Module (repeat next question previous selection number of times)		
L1.1	**How much did the modification cost? Please specify.**	_____

	Section P: Survey Notes	
P1.	****End Time**	|___|___|hrs|___|___|mins
P2.	**How many people were present at the time of the interview?**	|___|___|
P3.	**Are you satisfied with the answers given by the respondent(s)?**	□ Yes □ No
P4.	**Do you have any other comments?**	
P5.	****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- Did Not Consent* *7. □ SS07- Refused to Complete Survey*