| | | |
|---|---|---|
| | **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<br>☐ No ***→ Re-enter prefilled industry information*** |

| | | | | |
|---|---|---|---|---|
| | **Section B: Survey Information** | | | |
| B1. | **Surveyor Names** | | **Surveyor Codes** | ___\|___\|<br>___\|___\| |
| 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** | ___\|___\| | |
| B5. | **Industry respondents** *(Please enter the name and contact details of any industry employees that answered questions)* | **Name** | **Designation** | **Contact Number** |
| | | | | |
| | | | | |
| | | | | |

# 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<br>**2.** ☐ Thermo-Pack/Thermic Fluid Heater<br>**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<br>**2.** ☐ Air pre-heater<br>**3.** ☐ Water pre-heater/economizer<br>**4.** ☐ Cyclone<br>**5.** ☐ Scrubber |

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

| | | |
|---|---|---|
| | | **5.** ☐ Scrubber<br>**6.** ☐ Bag Filter<br>**7.** ☐ ESP<br>**8.** ☐ FD/ID Fan |
| F1.10 | **Is this component common to the previous parallel chain?** | □ Yes<br>☐ 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***<br>2. ☐ 1<br>3. ☐ 2<br>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***<br>□ No → ***SKIP QUESTIONS G1.22 AND G1.23*** | | | |
| G1.3 | **Why is this boiler not operational?** | **1. ☐ Under Maintenance**<br>**2. ☐ Not in Use**<br>**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**<br>2. ☐ Water Tube<br>3. ☐ Packaged Boiler<br>4. ☐ Others *(specify)*: _____ | | | |
| G1.10 | **Steam Generating Capacity** | \|_____\| | ☐**kg/hr**<br>☐**TPH**<br>☐**Other** | | |
| G1.11 | **Which of the following types of fuel does this boiler use?** | **1.** ☐ Coal (Indian); Specify Grade _____<br>**2.** ☐ Coal (Imported); Specify Country _____<br>**3.** ☐ Coke<br>**4.** ☐ Lignite<br>**5.** ☐ Pet Coke<br>**6.** ☐ Other Solid Fuel *(specify)*: _____<br>**7.** ☐ Wood<br>**8.** ☐ Bagasse<br>**9.** ☐ Rice Husk<br>**10.** ☐ Other Biomass *(specify)*: _____<br>**11.** ☐ Mix Indian + Imported Coal<br>**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<br>2. ☐ Grinding<br>3. ☐ Pulverization<br>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<br>2. ☐ No | |
| G1.12.5 | **Do you have a closed, covered, or dust-free system to convey the fuel?** | 1. ☐ Yes<br>2. ☐ No | |
| | ***End of fuel module*** | | |
| G1.13 | **Type of Fuel Firing** | 1. ☐ Manual<br>2. ☐ Fluidized<br>3. ☐ Burner<br>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**<br>☐ **Feet squared**<br>☐ **Other** |
| G1.16 | **Air Box Size** | \|_____\|x \|_____\|x\|_____\| | ☐ **mm x mm x mm**<br>☐ **in x in x in**<br>☐ **ft x ft x ft**<br>☐ **Other** |
| G1.17 | **Nos. of Nozzle** | | Nos. |
| G1.18.1 | **FD Fan** **Capacity** | | ☐ **Cubic meter/min**<br>☐ **Cubic meter/hr**<br>☐ **Other** |

| | | | | |
|---|---|---|---|---|
| G1.18.2 | | **Power** | | ☐ **KW**<br>☐ **HP**<br>☐ **Other** |
| G1.19.1 | **How many PA Fans are there?** | | ☐ **0** ***→ Skip to G1.20***<br>☐ **1**<br>☐ **2**<br>☐ **\|_____\|** | |
| | **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**<br>☐ **Cubic meter/hr**<br>☐ **Other** |
| **G1.19.3** | **Power** | | \|_____\| | ☐ **KW**<br>☐ **HP**<br>☐ **Other** |
| | ***End of PA Fan module*** | | | |
| **G1.20** | **Designed Steam Pressure** | | | ☐KPa<br>☐BAR<br>☐kg/cm$^2$<br>☐ **Other** |
| **G1.21** | **Designed steam Temperature** | | | Degree Celsius |
| **G1.22** | **Running Load** | | \|_____\| | ☐ **TPH**<br>☐ **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<br>☐ Crore<br>☐ 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<br>☐ Lakh<br>☐ Other |

| | | | |
|---|---|---|---|
| **G1.28** | **Annual Maintenance cost of the boiler***(Include: Equipment Repair, Cleaning*) | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| G1.29 | **Number of Days this boiler operates** | \|__\|__\|__\| | 1. ☐ Days/Year<br>2. ☐ Days/ Month |
| G1.30 | **Has this Boiler ever undergone major modifications?** | 1. ☐Yes<br>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<br>☐ Lakh<br>☐ Other |

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

| | | | | |
|---|---|---|---|---|
| | | *should observe)* | | |
| G1.38 | **Is the feed water tank insulated?** | | 1. ☐ Yes<br>2. ☐ No | |
| G1.39 | **Is there a boiler engineer?** | | 3. ☐ Yes<br>4. ☐ No | |
| G1.40 | **Is there a boiler master?** | | 1. ☐ Yes<br>2. ☐ No | |
| G1.41 | **Number of Boiler Operators** | | \|__\|__\| | |
| G1.42 | **Do you clean the Boiler?** | | 1. ☐ Yes<br>2. ☐ No ***-> End this section*** | |
| G1.43 | **Last time Boiler was cleaned?** | | \|__\|__\| / \|__\|__\| / \|__\|__\|__\|__\| | |
| G1.44 | **Boiler Cleaning Method** | | 1. ☐ Washing<br>2. ☐ Scrubbing<br>3. ☐ Scrapping<br>4. ☐ Other *(specify)*: _____ | |
| G1.45 | **Boiler Cleaning Frequency** | | 1. ☐ Once in a week<br>2. ☐ **Once in 15 days**<br>3. ☐ Once in a month<br>4. ☐ Once in six month<br>5. ☐ **Once in a year**<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>☐ \|_____\| | | | |
| **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***<br>□ No ***→ SKIP question G2.26*** | | | |
| G2.3 | **Why is this thermopack not operational?** | **1. ☐ Under Maintenance**<br>**2. ☐ Not in Use**<br>**☐ 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 _____<br>**2.** ☐ Coal (Imported); Specify Country _____<br>**3.** ☐ Coke<br>**4.** ☐ Lignite<br>**5.** ☐ Pet Coke<br>**6.** ☐ Other Solid Fuel *(specify)*: _____<br>**7.** ☐ Wood<br>**8.** ☐ Bagasse<br>**9.** ☐ Rice Husk<br>**10.** ☐ Other Biomass *(specify)*: _____<br>**11.** ☐ Mix Indian + Imported Coal<br>**12.** ☐ Mix Indian Coal + Wood<br>**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<br>2. ☐ Grinding<br>3. ☐ Pulverization<br>4. ☐ Others *(specify)*: _____ | | | |
| | ***End of fuel module*** | | | | |

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

| | | | |
|---|---|---|---|
| | **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<br>☐ Cubic meter/hr<br>☐ **Other** |
| **G2.19.3** | **Power** | | ☐ KW<br>☐ HP<br>☐ 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<br>☐ Lakh<br>☐ Other |
| **G2.23** | **Annual Operating cost of the Thermopack** *(Include: Power Consumption, Labor cost and other daily costs)(do NOT include fuel costs)* | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| **G2.24** | **Annual Maintenance cost of the Thermopack** *(Include: Equipment Repair, Cleaning)* | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| G2.25 | **Number of days thermopack operates** | \|__\|__\|__\| | 1. ☐ Days/ year<br>2. ☐ Days/ Month |
| G2.26 | **Fuel feed rate** | | kg/hr |
| G2.27 | **Has this thermopack ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐ Lakh |
| **G2.30** | **What Waste Heat Recovery device is installed?**<br>*(tick all that apply)* | 1. ☐ Water pre-heater ***→ Show Water pre-heater section, then SKIP to G2.33***<br>2. ☐ Economizer ***→ Show Water pre-heater section, then SKIP to G2.33***<br>3. ☐ Air pre-heater ***->Skip to G2.32.1***<br>4. ☐ None ***->Skip to G2.33***<br>5. ☐ Other *(specify)*: _____ ***->Skip to G2.33*** | |

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

| | | |
|---|---|---|
| G2.34 | **Is the operating team of Thermopack same as Boiler?** | 1. ☐ Yes →***Skip to G2.36***<br>2. ☐ No |
| G2.35 | **Number of Thermopack Operators** | \|__\|__\| |
| G2.36 | **Do you Clean Thermopack?** | 1. ☐ Yes<br>2. ☐ No →***End this Section*** |
| G2.37 | **When was the last time Thermopack cleaned?** | \|__\|__\|/\|__\|__\|/\|__\|__\|__\|__\| |
| G2.38 | **Thermopack Cleaning Method** | 1. ☐ Washing<br>2. ☐ Scrubbing<br>3. ☐ Scrapping<br>4. ☐ Other *(specify)*: _____ |
| G2.39 | **Thermopack Cleaning Frequency** | 1. ☐ Once in a week<br>2. ☐ Once in 15 days<br>3. ☐ Once in a month<br>4. ☐ Once in six month<br>5. ☐ Once in a year<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>☐ \|_____\| | | | |
| **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***<br>☐ No ***→ Skip question G3.20*** | | | |
| G3.3 | **Why is this furnace not operational?** | **1. ☐ Under Maintenance**<br>**2. ☐ Not in Use**<br>**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<br>☐ Crore<br>☐ Other |
| **G3.13** | **Annual Operating cost of the Furnace** *(Do NOT include fuel costs)* | | | | ☐Rupees<br>☐ Lakh<br>☐ Other |
| **G3.14** | **Annual Maintenance cost of the Furnace** | | | | ☐Rupees<br>☐ Lakh<br>☐ 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<br>2. ☐ No →***Skip to G3.19*** | | | |

| | | | |
|---|---|---|---|
| G3.17 | **Which year did this modifications take place?** | \|__\|__\|__\|__\| | |
| G3.18 | **How much did the modifications cost?** | | ☐Rupees<br>☐ Lakh<br>☐ Crore |
| G3.19 | **Burning Losses** | \|__\|__\| | % |
| G3.20 | ****Do you see fugitive emissions from the furnace?** *(this should be observed by the surveyor)* | 1. ☐ Yes<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>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***<br>□ No | | | |
| H1.3 | **Why the Gravity Settling Chamber is not operational?** | 1. ☐ Under Maintenance<br>2. ☐ Not in Use<br>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<br>☐ Lakh<br>☐ Other |
| **H1.10** | **Annual power consumption costs and labor costs of this Gravity Settling Chamber** | | | | ☐Rupees<br>☐ Lakh<br>☐ Other |
| **H1.11** | **Annual Maintenance cost of this Gravity Settling Chamber***(Include: Equipment Repair, Cleaning)* | | | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| H1.12 | **Has this equipment ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐Lakh |
| H1.15 | **Method of Dust Removal from Gravity Settling Chamber** | 1. ☐ Manual<br>2. ☐ Continuous<br>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<br>2. ☐ Scrubbing<br>3. ☐ Scrapping<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>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***<br>□ No |
| **H2.3** | Why the Cyclone is not operational? | 1. ☐ Under Maintenance<br>2. ☐ Not in Use<br>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<br>☐ Lakh<br>☐ Other |
| **H2.11** | **Annual power consumption costs and labor costs of the Cyclone** | | | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| **H2.12** | **Annual Maintenance cost of the Cyclone** *(Include: Equipment Repair, Cleaning)* | | | | ☐Rupees<br>☐ Lakh<br>☐ Other |
| H2.13 | **Has this equipment ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐ Lakh |

| | | | |
|---|---|---|---|
| | | | ☐ **Other** |

| | | | |
|---|---|---|---|
| H2.16 | **Method of Dust Removal from Cyclone** | 1. ☐ Manual<br>2. ☐ Continuous<br>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<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>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***<br>□ No | | | |
| H3.3 | **Why the Scrubber is not operational?** | 1. ☐ Under Maintenance<br>2. ☐ Not in Use<br>1. ☐ Others (*specify*) _____ | | | |
| H3.4 | **Since when Scrubber is not operational?** | \|_dd_\|/\|_mm_\|/\|___yyyy___\| | | | |
| H3.5 | **Type of Design** | 1. ☐ Ventury<br>2. ☐ Tower | | | |
| H3.6 | **Water Circulation Pump capacity** | | | 1. ☐ kL/hr<br>2. ☐ Cubic meter/sec<br>**3.** ☐ Other | |
| H3.7 | **Flue Gas Capacity** | | | ☐ Cubic meter/min<br>☐ Cubic meter/hr<br>☐ Other | |
| H3.8 | **Flue Gas Velocity** | | | ☐ **Meter/sec**<br>☐ **Other** | |
| H3.9 | **Installation before ID Fan?** | 1. ☐ Yes<br>2. ☐ No | | | |
| H3.11 | **Manufacturer Name:** | | H3.11.1 | **Model Name** | |
| H3.12 | **Manufacturer Contact** | | | | |
| H3.13 | **Type of Scrubber**<br><br>*(tick* more than one if necessary) | 1. ☐ Simple<br>2. ☐ Spray<br>3. ☐ Packed Bed<br>4. □ Impingement | | 5. ☐Venturi<br>6. ☐ Dry<br>7. ☐ Other *(specify)*:<br>_____ | |
| H3.14 | **Rated Efficiency of the Scrubber** | \|__\|__\| % | | | |

| | | | |
|---|---|---|---|
| H3.15 | **Year of purchase of this scrubber** | \|__\|__\|__\|__\| | |
| H3.16 | **Cost of Installation and Commissioning** | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| **H3.17** | **Annual power consumption costs and labor costs of this Scrubber** | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| **H3.18** | **Annual Maintenance Cost of this Scrubber***(Include: Equipment Repair, Repainting, Cleaning Cost)* | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| H3.19 | **Has this scrubber ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐ Lakh<br>☐ Other |
| H3.22 | **Is "demister" installed?** | 1. ☐ Yes<br>2. ☐ No | |
| H3.23 | **Cleaning Frequency (times per year)** | | |
| H3.24 | **Last cleaning date** | \|__\|__\| / \|__\|__\| / \|__\|__\|__\|__\| | |
| H3.25 | **Cleaning Method** | 1. ☐ Washing<br>2. ☐ Scrubbing<br>3. ☐ Scrapping<br>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*** <br> 2. ☐ 1 <br> 3. ☐ 2 <br> 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*** <br> □ No | | | |
| **H4.3** | Why the Bag Filter is not operational? | 1. ☐ Under Maintenance <br> 2. ☐ Not in Use <br> 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*** <br> 2. ☐ Pulse Jet Bag filter ***→ Go to Question H4.6*** <br> 3. ☐ Shaker type Bag filter ***→ Skip H4.6, H4.8 and H4.9!*** <br> 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 <br> ☐ HP <br> ☐ Other |
| H4.10 | **Flue Gas Capacity** | | | | ☐ Cubic meter/min <br> ☐ Cubic meter/hr <br> ☐ Other |
| H4.11 | **Flue Gas Velocity** | | | | ☐ Meter/sec <br> ☐ Other |
| H4.12 | **Is there any bag torn/broken in any way?** | 1. ☐Yes <br> 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<br>☐ Lakh<br>☐ **Other** |
| **H4.18** | **Annual power consumption costs and labour costs of this bag filter** | | | | ☐ Rupees<br>☐ Lakh<br>☐ **Other** |
| **H4.19** | **Annual maintenance cost of this APCD** *(INCLUDE compressor and bag replacement costs, equipment repair)* | | | | ☐ Rupees<br>☐ Lakh<br>☐ **Other** |
| H4.20 | **Has this equipment ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐ Lakh<br>☐ 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<br>2. ☐ Scrubbing<br>3. ☐ Scrapping<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>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***<br>□ No | | | |
| **H5.3** | **Why the ESP is not operational?** | 1. ☐ Under Maintenance<br>2. ☐ Not in Use<br>3. ☐ Others (*specify*) _____ | | | |
| **H5.4** | **Since when ESP is not operational?** | \|_dd_\|/\|_mn_\|/\|___yr___\| | | | |
| H5.5 | **Type of ESP**<br><br>*(Tick more than one option if necessary)* | 1. ☐ Plate & Wire<br>2. ☐ Tabular ESP<br>3. ☐ Wet ESP<br>4. ☐ Two Stage Precipitator | 5. ☐ Hot Stage Precipitator<br>6. ☐ Cold Stage Precipitator<br>7. ☐ Dry stage precipitator<br>8. ☐ Other *(specify)*: _____ | | |
| H5.6 | **Details of ESP** *(Report the no. of fields, electrode plates and their dimensions in this question)* | **Number of Fields** *(in Nos.)* | **Number of Electrode Plates** *(in Nos.)* | **Total Collection Area** *(in meter square)* | |
| | | | | | |
| H5.7 | ****No. of fields in operation *(at the time of survey)*** | | | Nos. | |
| **H5.8** | **What is the treatment time?** | 1. ☐ 15 secs<br>2. ☐ 30 secs<br>3. ☐ 45 secs<br>4. ☐ 60 secs<br>5. ☐ Other: *(specify)*_____ | | | |
| H5.9 | **Flue Gas Capacity** | | | ☐ Cubic meter/min<br>☐ Cubic meter/hr<br>☐ Other | |
| H5.10 | **Flue Gas Velocity** | | | ☐ Meter/sec<br>☐ Other | |
| H5.11 | **Installation before ID Fan?** | 1. ☐ Yes<br>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<br>☐ Lakh<br>☐ Other |
| **H5.17** | **Annual power consumption costs and labor costs of this ESP** | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| **H5.18** | **Annual Maintenance cost of this ESP** *(Include: Equipment Repair)* | | ☐ Rupees<br>☐ Lakh<br>☐ Other |
| H5.19 | **Has this equipment ever undergone major modifications?** | 1. ☐ Yes<br>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<br>☐ Lakh<br>☐ **Other** |
| H5.22 | **Method of Dust Removal from ESP** | 1. ☐ Manual<br>2. ☐ Continuous<br>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<br>2. ☐ Scrapping<br>3. ☐ Hammering<br>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***<br>2. ☐ 1<br>3. ☐ 2<br>4. ☐ \|_____\| | |
| **ID Fan Module: Fill out for every ID Fan *(to be repeated "I1" number of times)*** | | | |
| I2 | **Is this ID Fan common for more than one emissions source?** | ☐ Yes → **Explain: _____**<br>☐ No | |
| | | *(numeric values only)* | **Unit of Measurement** |
| I3 | **Rated power consumption of fan** | | 1. ☐ Kwh<br>2. ☐ HP<br>3. ☐ Other |
| I4 | **Pressure of the fan** | | mmWC<br>☐ **Other** |
| I5 | **Designed RPM of the fan** *(RPM at max power output)* | | RPM |
| I6 | **RPM of the fan at the time of visit** | | RPM |
| I7 | **Is there a Variable Frequency Drive (VFD) installed for this fan?** | 1. ☐ Yes, current frequency is \|_____\|% of the designed RPM *(as reported in 15*<br>2. ☐ No | |

| 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***<br>2. ☐ 1<br>3. ☐ 2<br>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?**<br><br>*(tick all that apply)* | *1.* ☐ CEMS for PM ***-> continue section ONLY if this is checked, else skip to Section L***<br>2. ☐ CEMS for NOx<br>3. ☐ CEMS for NO2<br>4. ☐ CEMS for SOx<br>5. ☐ CEMS for SO2<br>6. ☐ CEMS for CO<br>*7.* ☐ CEMS for CO2<br>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<br>2. ☐ Forbes Marshall<br>3. ☐ ShreeTec<br>4. ☐ ICE Asia<br>5. ☐ Others *(specify):* _____ |
| J4 | **Measurement Principle of the PM CEMS?** | 1. ☐ DC Triboelectric<br>2. ☐ AC Triboelectric<br>3. ☐ Electrodynamic<br>4. ☐ Single Pass Opacity<br>5. ☐ Double Pass Opacity<br>6. ☐ Dual Beam Opacity<br>7. ☐ Dynamic Opacity<br>8. ☐ Forward Light Scattering<br>9. ☐ Backward Light Scattering<br>10. ☐ Light Scattering (Extractive) for Wet Gas<br>11. ☐ Others *(specify):* _____ |
| J5 | **Is this CEMS device installed and calibrated?** | 1. ☐ Purchased but not installed or calibrated → ***SKIP J12***<br>2. ☐ Installed but not calibrated→ ***SKIP J12***<br>3. ☐ Both installed and calibrated |
| J6 | **Which date was this PM CEMS installed?** | \|____\|____\|/\|____\|____\|/\|____\|____\|____\|____\| |

| | | | |
|---|---|---|---|
| J7 | **What was the installation cost for this PM CEMS?** | | ☐ Rupees<br>☐ Lakh |
| J8 | **Annual Operating and Maintenance cost of this PM CEMS Device (Include power, internet labor and maintenance costs)** | | ☐ Rupees<br>☐ 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**<br>☐ **times/year** |
| J12 | **When was the instrument calibrated last?** | \|____\|____\|/\|____\|____\|/\|____\|____\|____\|____\| | |

| | | | |
|---|---|---|---|
| J13 | **Are there dedicated staffs for PM CEMS?** | 1. ☐ Yes<br>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<br>2. ☐ No ***→ Skip to J20*** | |
| J17 | **When did the modification take place?** | \|____\|____\|/\|____\|____\|/\|____\|____\|____\|____\| | |
| J18 | **How much did the modification cost?** | | ☐ Rupees<br>☐ Lakh |
| J19 | **What was the modification?** | | |
| J20 | **Did you buy a new PC for CEMS?** | 1. ☐ Yes<br>**2. ☐ No** | |
| J21 | **Do you regularly check the CEMS data?** | 1. ☐ Yes<br>2. ☐ No | |
| J22 | **Have you made any modification in Boiler, Thermopack, and APCDs after CEMS installation?** | 1. ☐ Yes<br>2. ☐ No ***-> If no, end section*** | |
| J23 | **Equipment Modified** | 1. ☐ Boiler<br>2. ☐ Thermopack<br>3. ☐ Settling Chamber<br>4. ☐ Cyclone<br>5. ☐ Scrubber<br>6. ☐ Bag Filter<br>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<br>2. ☐ No |
| L4. | **Do you have any other comments?** | ☐ Yes<br>☐ No |
| L5. | ****Survey Status Code** | 1. ☐ SS01 - Complete<br>2. ☐ SS02 – Partially Complete<br>3. ☐ SS03 – Respondent Unavailable<br>4. ☐ SS04 – Industry temporarily closed<br>5. ☐ SS05 – Industry permanently closed<br>6. ☐ SS06 – Industry not found<br>7. ☐ SS07 – Did not consent<br>8. ☐ SS08 – Refused to complete survey |