Monitoring Report Sheet (Input Sheet) [For Verification]

Table 1: Parameters monitored *ex post*

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Monitoring period	Monitoring point No.	Parameters	Description of data	Monitored Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
20/9/2015 - 31/12/2015	1	PH_p	Net heat quantity supplied by the project HOB during the period *p* .	1,183	GJ/p	Option C	Logged data of net heat quantity supplied by the project HOB	Measurement methods which are using a heatmeter meet the industrial standards (host country or international standard). Monitoring data is the amount of heat supplied from the project HOB. This monitoring data is recorded in the data logger that is built into the heat meter. Electric data recorded on the data logger is input to the spreadsheet properly. In these monitoring activities, QA/QC be implemented. - In the case that heatmeter with verification is used, the verification validity for the heatmeter does not expire till the last date of the monitoring period. - If the heatmeter with the verification is not required in the industrial standard, uncertainty of the calibration data of the monitoring equipment meet the following conditions; - It is within accepted level of the verification. - It is within the accuracy level of industry standard requires. Required calibration frequency is the frequency which can be confirmed to be within the accuracy level of the requirement of industrial standard.	Measuring frequency: Continuously Recording frequency: Hourly	Trouble shooting procedure of missing data; Completed by the hourly minimum value (excluding abnormal value) of available recorded data during the monitoring period.
20/9/2015 - 31/12/2015	2	HMP_p	Total hours of the project HOB operation during the period *p*	4,944	hours/p	Option C	Identified by monitoring period	Total time from the start time of monitoring to the end time of monitoring	---	---

Table 2: Project-specific parameters fixed *ex ante*

(a)	(b)	(c)	(d)	(e)	(f)
Parameters	Description of data	Estimated Values	Units	Source of data	Other comments
$RPC_{PJ,HOB}$	Rated power consumption of the project HOB	1	kW	Catalog value provided by the manufacturer of the project HOB	
$EF_{CO2,grid}$	CO_2 emission factor of the grid electricity consumed by the project HOB	1.1030	tCO_2/MWh	The most recent value available at the time of validation is applied and fixed for the monitoring period thereafter. The data is sourced from CDM Mongolia unless otherwise instructed by the Joint Committee.	

Table3: *Ex-post* calculation of CO_2 emission reductions

Monitoring Period	CO_2 emission reductions	Units
20/9/2015 - 31/12/2015	18	tCO_2/p

[Monitoring option]

Option A	Based on public data which is measured by entities other than the project participants (Data used: publicly recognized data such as statistical data and specifications)
Option B	Based on the amount of transaction which is measured directly using measuring equipments (Data used: commercial evidence such as invoices)
Option C	Based on the actual measurement using measuring equipments (Data used: measured values)

Monitoring Spreadsheet: JCM_MN_AM002_ver01.0

Sectoral scope: 01

Monitoring Report Sheet (Calculation Process Sheet) [For Verification]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	19	tCO_2/p	ER_p
2. Selected default values, etc.				
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,\ coal}$
Boiler efficiency of the reference HOB	N/A	0.533	-	$\eta_{RE,HOB}$
Boiler efficiency of the project HOB	N/A	0.610	-	$\eta_{PJ,HOB}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	202	tCO_2/p	RE_p
Reference Emissions	N/A	202	tCO_2/p	
Net heat quantity supplied by the project HOB	N/A	1,183	GJ/p	PH_p
Boiler efficiency of the reference HOB	N/A	0.533	-	$\eta_{RE,HOB}$
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,coal}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	183	tCO_2/p	PE_p
Project emissions (Fossil fuel consumption)	N/A	176	tCO_2/p	
Net heat quantity supplied by the project HOB	N/A	1,183	GJ/p	PH_p
Boiler efficiency of the project HOB	N/A	0.610	-	$\eta_{PJ,HOB}$
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,coal}$
Project emissions (Electricity consumption)	N/A	7	tCO_2/p	
Electricity consumption of the project HOB	Electricity	6	MWh/p	EC_p
Total hours of the project HOB operation	N/A	4,944	h/p	HMP_p
Rated power consumption of the project HOB	N/A	1	kW	$RPC_{PJ,HOB}$
CO_2 emission factor of the grid	Electricity	1.1030	tCO_2/MWh	$EF_{CO2,grid}$

[List of Default Values]

CO_2 Emission Factor of Coal used in HOBs	$EF_{CO2,\ coal}$	unit
Default emission factor applied to Lignite in fuel according to “2006 IPCC Guidelines for National Greenhouse Gas Inventory”	0.0909	tCO_2/GJ

Boiler Efficiency of coal-fired HOB in Mongolia	η	unit
Boiler Efficiency of Reference the HOB	0.533	-
Boiler Efficiency of the Project HOB	0.610	-

Monitoring Report Sheet (Input Sheet) [For Verification]

Table 1: Parameters monitored *ex post*

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Monitoring period	Monitoring point No.	Parameters	Description of data	Monitored Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
1/1/2016 - 15/5/2016	1	PH_p	Net heat quantity supplied by the project HOB during the period *p* .	1,929	GJ/p	Option C	Logged data of net heat quantity supplied by the project HOB	Measurement methods which are using a heatmeter meet the industrial standards (host country or international standard). Monitoring data is the amount of heat supplied from the project HOB. This monitoring data is recorded in the data logger that is built into the heat meter. Electric data recorded on the data logger is input to the spreadsheet properly. In these monitoring activities, QA/QC be implemented. - In the case that heatmeter with verification is used, the verification validity for the heatmeter does not expire till the last date of the monitoring period. - If the heatmeter with the verification is not required in the industrial standard, uncertainty of the calibration data of the monitoring equipment meet the following conditions; - It is within accepted level of the verification. - It is within the accuracy level of industry standard requires. Required calibration frequency is the frequency which can be confirmed to be within the accuracy level of the requirement of industrial standard.	Measuring frequency: Continuously Recording frequency: Hourly	Trouble shooting procedure of missing data; Completed by the hourly minimum value (excluding abnormal value) of available recorded data during the monitoring period.
1/1/2016 - 15/5/2016	2	HMP_p	Total hours of the project HOB operation during the period *p*	6,528	hours/p	Option C	Identified by monitoring period	Total time from the start time of monitoring to the end time of monitoring	---	---

Table 2: Project-specific parameters fixed *ex ante*

(a)	(b)	(c)	(d)	(e)	(f)
Parameters	Description of data	Estimated Values	Units	Source of data	Other comments
$RPC_{PJ,HOB}$	Rated power consumption of the project HOB	1	kW	Catalog value provided by the manufacturer of the project HOB	
$EF_{CO2,grid}$	CO_2 emission factor of the grid electricity consumed by the project HOB	1.1030	tCO_2/MWh	The most recent value available at the time of validation is applied and fixed for the monitoring period thereafter. The data is sourced from CDM Mongolia unless otherwise instructed by the Joint Committee.	

Table3: *Ex-post* calculation of CO_2 emission reductions

Monitoring Period	CO_2 emission reductions	Units
1/1/2016 - 15/5/2016	32	tCO_2/p

[Monitoring option]

Option A	Based on public data which is measured by entities other than the project participants (Data used: publicly recognized data such as statistical data and specifications)
Option B	Based on the amount of transaction which is measured directly using measuring equipments (Data used: commercial evidence such as invoices)
Option C	Based on the actual measurement using measuring equipments (Data used: measured values)

Monitoring Spreadsheet: JCM_MN_AM002_ver01.0

Sectoral scope: 01

Monitoring Report Sheet (Calculation Process Sheet) [For Verification]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	33	tCO_2/p	ER_p
2. Selected default values, etc.				
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,\ coal}$
Boiler efficiency of the reference HOB	N/A	0.533	-	$\eta_{RE,HOB}$
Boiler efficiency of the project HOB	N/A	0.610	-	$\eta_{PJ,HOB}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	329	tCO_2/p	RE_p
Reference Emissions	N/A	329	tCO_2/p	
Net heat quantity supplied by the project HOB	N/A	1,929	GJ/p	PH_p
Boiler efficiency of the reference HOB	N/A	0.533	-	$\eta_{RE,HOB}$
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,coal}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	296	tCO_2/p	PE_p
Project emissions (Fossil fuel consumption)	N/A	287	tCO_2/p	
Net heat quantity supplied by the project HOB	N/A	1,929	GJ/p	PH_p
Boiler efficiency of the project HOB	N/A	0.610	-	$\eta_{PJ,HOB}$
CO_2 emission factor of coal	Coal	0.0909	tCO_2/GJ	$EF_{CO2,coal}$
Project emissions (Electricity consumption)	N/A	9	tCO_2/p	
Electricity consumption of the project HOB	Electricity	8	MWh/p	EC_p
Total hours of the project HOB operation	N/A	6,528	h/p	HMP_p
Rated power consumption of the project HOB	N/A	1	kW	$RPC_{PJ,HOB}$
CO_2 emission factor of the grid	Electricity	1.1030	tCO_2/MWh	$EF_{CO2,grid}$

[List of Default Values]

CO_2 Emission Factor of Coal used in HOBs	$EF_{CO2,\ coal}$	unit
Default emission factor applied to Lignite in fuel according to “2006 IPCC Guidelines for National Greenhouse Gas Inventory”	0.0909	tCO_2/GJ

Boiler Efficiency of coal-fired HOB in Mongolia	η	unit
Boiler Efficiency of Reference the HOB	0.533	-
Boiler Efficiency of the Project HOB	0.610	-