Monitoring Report Sheet (Input Sheet) [For Verification]

Table 1: Parameters monitored *ex post*

(a) Monitoring period	(b) Monitoring point No.	(c) Parameters	(d) Description of data	(e) Monitored Values	(f) Units	(g) Monitoring option	(h) Source of data	(i) Measurement methods and procedures	(j) Monitoring frequency	(k) Other comments
1/7/2018-31/12/2018	(1)	$EG_{SUP,p}$	The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	32,684	MWh/p	Option C	monitored data	Collecting electricity generation data with validated/calibrated electricity monitoring devices and inputting to a spreadsheet electronically. Calibration of the electricity meters is not required for this monitoring period, in accordance with the manufacturer's specification	Continuously monitored and monthly aggregated	
1/7/2018-31/12/2018	N.A.	D_p	The number of days during a given time period *p*	184	day/p	Option C	monitored data	- Counting the number of days of this monitoring period	once at the end of this monitoring period	

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

(a) Parameters	(b) Description of data	(c) Estimated Values	(d) Units	(e) Source of data	(f) Other comments
EF_{grid}	CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	0.903	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 “Emission Factors of Electricity Interconnection Systems”, National Committee on Clean Development Mechanism Indonesian DNA for CDM unless otherwise instructed by the Joint Committee.	
EC_{CAP}	The total maximum rated capacity of equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	3.69	MW	Rated capacity of all installed equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	

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

Monitoring Period	CO_2 emission reductions	Units
1/7/2018-31/12/2018	14,799	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 Report Sheet (Calculation Process Sheet) [For Verification]

	Fuel type	Value	Units	Parameter
1. Calculations for emission reductions				
Emission reductions during a given time period	N/A	14,799.5	tCO_2/p	ER_p
2. Selected default values, etc.				
CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	Electricity	0.903	tCO_2/MWh	EF_{grid}
3. Calculations for reference emissions				
Reference emissions during a given time period	N/A	14,799.5	tCO_2/p	RE_p
The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	Electricity	32,684	MWh/p	$EG_{SUP,p}$
The quantity of electricity consumption by the WHR system except for the direct captive use of the electricity generated by itself during a given time period *p*	Electricity	16,295	MWh/p	$EC_{AUX,p}$
The quantity of net electricity generation by the WHR system which replaces grid electricity import during a given time period *p*	Electricity	16,389	MWh/p	EG_p
4. Calculations of the project emissions				
Project emissions during a given time period	N/A	0.0	tCO_2/p	PE_p

Monitoring Report Sheet (Input Sheet) [For Verification]

Table 1: Parameters monitored *ex post*

(a) Monitoring period	(b) Monitoring point No.	(c) Parameters	(d) Description of data	(e) Monitored Values	(f) Units	(g) Monitoring option	(h) Source of data	(i) Measurement methods and procedures	(j) Monitoring frequency	(k) Other comments
01/01/2019 - 31/12/2019	(1)	$EG_{SUP,p}$	The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	41,209	MWh/p	Option C	monitored data	- Collecting electricity generation data with validated/calibrated electricity monitoring devices and inputting to a spreadsheet electronically. - Monitoring devices are calibrated in line with international standards or manufacturers' specification.	continuous	
01/01/2019 - 31/12/2019	N.A.	D_p	The number of days during a given time period *p*	365	day/p	Option C	monitored data	- Counting the number of days of this monitoring period	once at the end of this monitoring period	

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

(a) Parameters	(b) Description of data	(c) Estimated Values	(d) Units	(e) Source of data	(f) Other comments
EF_{grid}	CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	0.903	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 “Emission Factors of Electricity Interconnection Systems”, National Committee on Clean Development Mechanism Indonesian DNA for CDM unless otherwise instructed by the Joint Committee.	
EC_{CAP}	The total maximum rated capacity of equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	3.69	MW	Rated capacity of all installed equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	

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

Monitoring Period	CO_2 emission reductions	Units
01/01/2019 - 31/12/2019	8,023	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 Report Sheet (Calculation Process Sheet) [For Verification]

	Fuel type	Value	Units	Parameter
1. Calculations for emission reductions				
Emission reductions during a given time period	N/A	8,023.2	tCO_2/p	ER_p
2. Selected default values, etc.				
CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	Electricity	0.903	tCO_2/MWh	EF_{grid}
3. Calculations for reference emissions				
Reference emissions during a given time period	N/A	8,023.2	tCO_2/p	RE_p
The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	Electricity	41,209	MWh/p	$EG_{SUP,p}$
The quantity of electricity consumption by the WHR system except for the direct captive use of the electricity generated by itself during a given time period *p*	Electricity	32,324	MWh/p	$EC_{AUX,p}$
The quantity of net electricity generation by the WHR system which replaces grid electricity import during a given time period *p*	Electricity	8,885	MWh/p	EG_p
4. Calculations of the project emissions				
Project emissions during a given time period	N/A	0.0	tCO_2/p	PE_p

Monitoring Report Sheet (Input Sheet) [For Verification]

Table 1: Parameters monitored *ex post*

(a) Monitoring period	(b) Monitoring point No.	(c) Parameters	(d) Description of data	(e) Monitored Values	(f) Units	(g) Monitoring option	(h) Source of data	(i) Measurement methods and procedures	(j) Monitoring frequency	(k) Other comments
01/01/2020 - 31/12/2020	(1)	$EG_{SUP,p}$	The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	59,120.0	MWh/p	Option C	monitored data	- Collecting electricity generation data with validated/calibrated electricity monitoring devices and inputting to a spreadsheet electronically. - Monitoring devices are calibrated in line with international standards or manufacturers' specification.	continuous	
01/01/2020 - 31/12/2020	N.A.	D_p	The number of days during a given time period *p*	366	day/p	Option C	monitored data	- Counting the number of days of this monitoring period	once at the end of this monitoring period	

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

(a) Parameters	(b) Description of data	(c) Estimated Values	(d) Units	(e) Source of data	(f) Other comments
EF_{grid}	CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	0.903	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 “Emission Factors of Electricity Interconnection Systems”, National Committee on Clean Development Mechanism Indonesian DNA for CDM unless otherwise instructed by the Joint Committee.	
EC_{CAP}	The total maximum rated capacity of equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	3.69	MW	Rated capacity of all installed equipments of the WHR system which consumes electricity except for the capacity of equipments which use the electricity generated by itself directly	

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

Monitoring Period	CO_2 emission reductions	Units
01/01/2020 - 31/12/2020	24,116	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 Report Sheet (Calculation Process Sheet) [For Verification]

	Fuel type	Value	Units	Parameter
1. Calculations for emission reductions				
Emission reductions during a given time period	N/A	24,116.5	tCO_2/p	ER_p
2. Selected default values, etc.				
CO_2 emission factor for an Indonesian regional grid system, from which electricity is displaced due to the project during a given time period *p*	Electricity	0.903	tCO_2/MWh	EF_{grid}
3. Calculations for reference emissions				
Reference emissions during a given time period	N/A	24,116.5	tCO_2/p	RE_p
The quantity of the electricity supplied from the WHR system to the cement production facility during a given time period *p*	Electricity	59,120	MWh/p	$EG_{SUP,p}$
The quantity of electricity consumption by the WHR system except for the direct captive use of the electricity generated by itself during a given time period *p*	Electricity	32,413	MWh/p	$EC_{AUX,p}$
The quantity of net electricity generation by the WHR system which replaces grid electricity import during a given time period *p*	Electricity	26,707	MWh/p	EG_p
4. Calculations of the project emissions				
Project emissions during a given time period	N/A	0.0	tCO_2/p	PE_p