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
2014/03/01 - 2015/07/31	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	1,992.62	MWh/p	Option C	Monitored data	Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of electrical power consumption of project chiller. 2) [Before Replacement of Meter] Meter is certified with the standards of manufacturer whose accuracy on power consumption is as good as international standards. [After Replacement of Meter] Meter is certified with International Standard (IEC) on electrical power meter. - Measuring and recording: 1) Measured data is recorded and stored in the measuring equipments. 2) Recorded data is checked its integrity once a month by responsible staff. - Accuracy level: [Before Replacement of Meter] ±0.48% [After Replacement of Meter] ±0.32% - Calibration: Calibration was not conducted since both meters have not been used for more than one year. - QA/QC: Continuous automatic measurement and daily manual recording at every 7 o'clock in the morning.	Continuously	Electrical power meter was replaced on 16 Dec 2014 to new meter.
2014/03/01 - 2015/07/31	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	101,714.72	MWh/p	Option B	Invoice from the power company	Data is collected and recorded from invoices from the power company.	Every month	
2014/03/01 - 2015/07/31	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	0	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	In the project, there is no generator for captive electricity. Thus, this parameter is not applicable for this project.

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**
EF_{elec}	[For grid electricity] CO_2 emission factor for consumed electricity	0.814	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.	
EF_{elec}	[For captive electricity] CO_2 emission factor for consumed electricity	0.8	tCO_2/MWh	CDM approved small scale methodology: AMS-I.A	In the project, there is no generator for captive electricity.
$T_{cooling-out,i}$	Output cooling water temperature of project chiller i set under the project specific condition	36.9	degree Celsius	Specifications of project chiller i prepared for the quotation or factory acceptance test data by manufacturer	
$T_{chilled-out,i}$	Output chilled water temperature of project chiller i set under the project specific condition	14	degree Celsius	Specifications of project chiller i prepared for the quotation or factory acceptance test data by manufacturer	
$COP_{RE,i}$	COP of reference chiller i under the standardizing temperature conditions	5.59	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller i under the project specific conditions	7.66	-	Specifications of project chiller i prepared for the quotation or factory acceptance test data by manufacturer	
$COP_{PJ,tc,i}$	COP of project chiller i calculated under the standardizing temperature conditions	6.01	-	Calculated with the following equation; $COP_{PJ,tc,i} = COP_{PJ,i} \times [(T_{cooling-out,i} - T_{chilled-out,i} + TD_{chilled} + TD_{cooling}) \div (37 - 7 + TD_{chilled} + TD_{cooling})]$	
RC_{gen}	Rated capacity of generator	0.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
2014/03/01-2015/07/31	122	tCO_2/p

[Monitoring option]

Option A	Based on public data which is measured by entities other than the project participants (Data used:
Option B	Based on the amount of transaction which is measured directly using measuring equipments (Data
Option C	Based on the actual measurement using measuring equipments (Data used: measured values)

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	122.43	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.59	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period p	N/A	1744.42	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.81	tCO_2/MWh	EF_{elec}
CO_2 emission factor for consumed electricity [captive]	Electricity	0.8	tCO_2/MWh	EF_{elec}
Proportion of grid electricity over total electricity consumed at the project site	N/A	1.00	-	-
Proportion of captive electricity over total electricity consumed at the project site	N/A	0.00	-	-
Power consumption of project chiller i	Electricity	1992.62	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller i under the standardizing temperature conditions	N/A	5.59	-	$COP_{RE,i}$
COP of project chiller i calculated under the standardizing temperature conditions	N/A	6.01	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period p	N/A	1621.99	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.81	tCO_2/MWh	EF_{elec}
CO_2 emission factor for consumed electricity [captive]	Electricity	0.8	tCO_2/MWh	EF_{elec}
Proportion of grid electricity over total electricity consumed at the project site	N/A	1.00	-	-
Proportion of captive electricity over total electricity consumed at the project site	N/A	0.00	-	-
Power consumption of project chiller i	Electricity	1,992.62	MWh/p	$EC_{PJ,i,p}$

[List of Default Values]

$COP_{RE,i}$ (x<300USRt)	4.92	-
$COP_{RE,i}$ (300≦x<450USRt)	5.33	-
$COP_{RE,i}$ (450≦x<500USRt)	5.59	-
$COP_{RE,i}$ (500≦x<700USRt)	5.85	-
$COP_{RE,i}$ (700≦x<1250USRt)	5.94	-

$TD_{cooling}$	1.50	degree Celsius
$TD_{chilled}$	1.50	degree Celsius