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/Jan/2017-31/Dec/2017	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	347.2	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2017-31/Dec/2017	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	42,826,880	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2017-31/Dec/2017	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	9.4	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.85	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.98	-	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	6.11	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2017-31/Dec/2017	13	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	13.07	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.85	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	304.68	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	347.15	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.85	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.11	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	291.61	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	347.15	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

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/Jan/2017-31/Dec/2017	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	1,811.4	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2017-31/Dec/2017	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	42,826,880	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2017-31/Dec/2017	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	9.4	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2017-31/Dec/2017	50	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	50.93	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	1572.51	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1811.40	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	1521.57	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1,811.40	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

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/Jan/2017-31/Dec/2017	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	1,460.0	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2017-31/Dec/2017	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	42,826,880	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2017-31/Dec/2017	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	9	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2017-31/Dec/2017	41	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	41.05	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	1267.45	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1459.99	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	1226.39	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1,459.99	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

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/Jan/2017-31/Dec/2017	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	1,548.2	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2017-31/Dec/2017	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	42,826,880	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2017-31/Dec/2017	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	9.4	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2017-31/Dec/2017	43	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	43.53	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	1343.99	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1548.16	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	1300.46	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1,548.16	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

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/Jan/2017-31/Dec/2017	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	1,793.5	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2017-31/Dec/2017	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	42,826,880	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2017-31/Dec/2017	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	9.4	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2017-31/Dec/2017	50	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	50.43	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	1556.97	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1793.49	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	1506.53	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	1,793.49	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

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/Jan/2018-30/Apr/2018	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	127.8	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2018-30/Apr/2018	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	55,943,680	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2018-30/Apr/2018	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	0.0	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.85	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.98	-	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	6.11	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2018-30/Apr/2018	4	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	4.81	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.85	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	112.20	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	127.84	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.85	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.11	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	107.38	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	127.84	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

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/Jan/2018-30/Apr/2018	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	504.0	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2018-30/Apr/2018	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	13,116,800	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2018-30/Apr/2018	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	0.0	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2018-30/Apr/2018	14	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	14.17	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	437.54	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	504.01	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	423.37	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	504.01	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

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/Jan/2018-30/Apr/2018	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	412.8	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2018-30/Apr/2018	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	13,116,800	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2018-30/Apr/2018	(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	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2018-30/Apr/2018	11	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	11.61	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	358.36	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	412.80	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	346.76	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	412.80	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

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/Jan/2018-30/Apr/2018	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	437.4	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2018-30/Apr/2018	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	13,116,800	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2018-30/Apr/2018	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	0.0	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2018-30/Apr/2018	12	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	12.30	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	379.71	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	437.39	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	367.41	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	437.39	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

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/Jan/2018-30/Apr/2018	(1)	$EC_{PJ,i,p}$	Power consumption of project chiller *i* during the period *p*	529.4	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) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Continuously	
1/Jan/2018-30/Apr/2018	(2)	$EI_{grid,p}$	Electricity imported from the grid to the project site during the period *p*	13,116,800	MWh/p	Option C	Invoice from the power company for Option B or monitored data for Option C	[for Option B] Data is collected and recorded from invoices from the power company. [for Option C] Data is measured by measuring equipments in the factory. - Specification of measuring equipments: 1) Electrical power meter is applied for measurement of power imported from the grid to the project site. 2) Meter is certified in compliance with national/international standards on electrical power meter. - Measuring and recording: 1) Measured data is automatically sent to a server where data is recorded and stored. 2) Recorded data is checked its integrity once a month by responsible staff. - Calibration: In case a calibration certificate issued by an entity accredited under national/international standards is not provided, such measuring equipment is required to be calibrated.	Every month	
1/Jan/2018-30/Apr/2018	(3)	$h_{gen,p}$	Operating time of captive electricity generator during the period *p*	0.0	hours/p	Option C	Monitored data	Data is measured by meter equipped to a generator.	Continuously	

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	0.840	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	
$T_{cooling-out,i}$	Output cooling water temperature of project chiller *i* set under the project specific condition	37	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	6	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	5.94	-	Selected from the default values set in the methodology	
$COP_{PJ,i}$	COP of project chiller *i* under the project specific conditions	5.99	-	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	6.14	-	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	13920.0	kW	Specification of generator for captive electricity	

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

Monitoring Period	CO_2 emission reductions	Units
1/Jan/2018-30/Apr/2018	14	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]

1. Calculations for emission reductions	Fuel type	Value	Units	Parameter
Emission reductions during the period *p*	N/A	14.89	tCO_2/p	ER_p
2. Selected default values, etc.				
COP of reference chiller i under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
3. Calculations for reference emissions				
Reference emissions during the period *p*	N/A	459.54	tCO_2/p	RE_p
Reference emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	529.36	MWh/p	$EC_{PJ,i,p}$
COP of reference chiller *i* under the standardizing temperature conditions	N/A	5.94	-	$COP_{RE,i}$
COP of project chiller *i* calculated under the standardizing temperature conditions	N/A	6.14	-	$COP_{PJ,tc,i}$
4. Calculations of the project emissions				
Project emissions during the period *p*	N/A	444.66	tCO_2/p	PE_p
Project emissions	N/A			
CO_2 emission factor for consumed electricity [grid]	Electricity	0.84	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	529.36	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