Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

Reference Number: PW002

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
2017/08/01-2017/12/31	(1)	$\Sigma EG_{i,p}$	The total quantity of the electricity generated in the project during the period *p*	80.38	MWh/p	Option C	Measured data	The AC output of the inverters is measured to determine the amount of net electricity generation by the solar PV system. The reading is taken from an electricity meter manually. The reading is checked to eliminate discrepancy. The accuracy level of the electricity meter is certified by factory test to ANSI C12.20 accuracy standards (0.2 class (0.2% accuracy)). The electricity meter will maintain the specified accuracy without recalibration for ten years after factory calibration. The electricity meter is replaced within ten years of factory calibration. Both meters, one at Site A and another at Site B were tested on 14 October 2015.	Monthly recording	n/a

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_{RE}	The reference CO_2 emission factor of grid and captive electricity	0.533	tCO_2/MWh	The default emission factor is derived from the result of the survey on the new high-efficient engines using diesel fuel as a power source. The default value should be revised if necessary from the survey result which is conducted by the JC or project participants every three years.	n/a

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

Monitoring Period	CO_2 emission reductions	Units
2017/08/01-2017/12/31	42	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)

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i	$EG_{i,p}$
solar PV system number	The quantity of the electricity generated by the project solar PV system *i* during the period *p*
	MWh/p
1	28.56
2	51.82
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Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

Reference Number: PW002

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	42.8	tCO_2/p	ER_p
2. Selected default values, etc.				
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
3. Calculations for reference emissions				
Reference emissions during the period *p*	n/a	42.8	tCO_2/p	RE_p
The total quantity of the electricity generated in the project during the period *p*	Electricity	80.38	MWh/p	$\Sigma EG_{i,p}$
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
4. Calculations of the project emissions				
Project emissions during the period p	n/a	0.0	tCO_2/p	PE_p

[List of Default Values]

The reference CO_2 emission factor of the grid and captive electricity	0.533	tCO_2/MWh

Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

Reference Number: PW002

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
2018/01/01-2018/12/31	(1)	$\Sigma EG_{i,p}$	The total quantity of the electricity generated in the project during the period *p*	203.86	MWh/p	Option C	Measured data	The AC output of the inverters is measured to determine the amount of net electricity generation by the solar PV system. The reading is taken from an electricity meter manually. The reading is checked to eliminate discrepancy. The accuracy level of the electricity meter is certified by factory test to ANSI C12.20 accuracy standards (0.2 class (0.2% accuracy)). The electricity meter will maintain the specified accuracy without recalibration for ten years after factory calibration. The electricity meter is replaced within ten years of factory calibration. Both meters, one at Site A and another at Site B were tested on 14 October 2015.	Monthly recording	n/a

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_{RE}	The reference CO_2 emission factor of grid and captive electricity	0.533	tCO_2/MWh	The default emission factor is derived from the result of the survey on the new high-efficient engines using diesel fuel as a power source. The default value should be revised if necessary from the survey result which is conducted by the JC or project participants every three years.	n/a

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

Monitoring Period	CO_2 emission reductions	Units
2018/01/01-2018/12/31	108	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)

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i	$EG_{i,p}$
solar PV system number	The quantity of the electricity generated by the project solar PV system *i* during the period *p*
	MWh/p
1	72.69
2	131.17
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Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

Reference Number: PW002

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	108.7	tCO_2/p	ER_p
2. Selected default values, etc.				
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
3. Calculations for reference emissions				
Reference emissions during the period *p*	n/a	108.7	tCO_2/p	RE_p
The total quantity of the electricity generated in the project during the period *p*	Electricity	203.86	MWh/p	$\Sigma EG_{i,p}$
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
4. Calculations of the project emissions				
Project emissions during the period p	n/a	0.0	tCO_2/p	PE_p

[List of Default Values]

The reference CO_2 emission factor of the grid and captive electricity	0.533	tCO_2/MWh

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
2019/01/01-2019/12/31	(1)	$\Sigma EG_{i,p}$	The total quantity of the electricity generated in the project during the period *p*	185.67	MWh/p	Option C	Measured data	The AC output of the inverters is measured to determine the amount of net electricity generation by the solar PV system. The reading is taken from an electricity meter manually. The reading is checked to eliminate discrepancy. The accuracy level of the electricity meter is certified by factory test to ANSI C12.20 accuracy standards (0.2 class (0.2% accuracy)). The electricity meter will maintain the specified accuracy without recalibration for ten years after factory calibration. The electricity meter is replaced within ten years of factory calibration. Both meters, one at Site A and another at Site B were tested on 14 October 2015.	Monthly recording	n/a

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_{RE}	The reference CO_2 emission factor of grid and captive electricity	0.533	tCO_2/MWh	The default emission factor is derived from the result of the survey on the new high-efficient engines using diesel fuel as a power source. The default value should be revised if necessary from the survey result which is conducted by the JC or project participants every three years.	n/a

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

Monitoring Period	CO_2 emission reductions	Units
2019/01/01-2019/12/31	98	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)

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Reference Number: PW002

i	$EG_{i,p}$
solar PV system number	The quantity of the electricity generated by the project solar PV system *i* during the period *p*
	MWh/p
1	70.48
2	115.19
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Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

Reference Number: PW002

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	99.0	tCO_2/p	ER_p
2. Selected default values, etc.				
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
3. Calculations for reference emissions				
Reference emissions during the period *p*	n/a	99.0	tCO_2/p	RE_p
The total quantity of the electricity generated in the project during the period *p*	Electricity	185.67	MWh/p	$\Sigma EG_{i,p}$
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
4. Calculations of the project emissions				
Project emissions during the period p	n/a	0.0	tCO_2/p	PE_p

[List of Default Values]

The reference CO_2 emission factor of the grid and captive electricity	0.533	tCO_2/MWh

Monitoring Spreadsheet: JCM_PW_AM001_ver01.0
Reference Number: PW002

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
2020/01/01-2020/12/31	(1)	$\Sigma EG_{i,p}$	The total quantity of the electricity generated in the project during the period *p*	175.48	MWh/p	Option C	Measured data	The AC output of the inverters is measured to determine the amount of net electricity generation by the solar PV system. The reading is taken from an electricity meter manually. The reading is checked to eliminate discrepancy. The accuracy level of the electricity meter is certified by factory test to ANSI C12.20 accuracy standards (0.2 class (0.2% accuracy)). The electricity meter will maintain the specified accuracy without recalibration for ten years after factory calibration. The electricity meter is replaced within ten years of factory calibration. The meter at Site A was tested on 14 October 2015. The meter at Site B was replaced on 11 February 2020 due to failure. The meter before replacement was tested on 14 October 2015. The meter after replacement was tested on 8 July 2019.	Monthly recording	n/a

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_{RE}	The reference CO_2 emission factor of grid and captive electricity	0.533	tCO_2/MWh	The default emission factor is derived from the result of the survey on the new high-efficient engines using diesel fuel as a power source. The default value should be revised if necessary from the survey result which is conducted by the JC or project participants every three years.	n/a

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

Monitoring Period	CO_2 emission reductions	Units
2020/01/01-2020/12/31	93	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)

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i	$EG_{i,p}$
solar PV system number	The quantity of the electricity generated by the project solar PV system *i* during the period *p*
	MWh/p
1	64.14
2	111.34
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Monitoring Spreadsheet: JCM_PW_AM001_ver01.0

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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	93.5	tCO_2/p	ER_p
2. Selected default values, etc.				
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
3. Calculations for reference emissions				
Reference emissions during the period *p*	n/a	93.5	tCO_2/p	RE_p
The total quantity of the electricity generated in the project during the period *p*	Electricity	175.48	MWh/p	$\Sigma EG_{i,p}$
The reference CO_2 emission factor of the grid and captive electricity	Electricity	0.533	tCO_2/MWh	EF_{RE}
4. Calculations of the project emissions				
Project emissions during the period p	n/a	0.0	tCO_2/p	PE_p

[List of Default Values]

The reference CO_2 emission factor of the grid and captive electricity	0.533	tCO_2/MWh