

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
2/12/2017 -31/12/2017	1	$E_{L,send,y}$	Power sent from the point of origin/supply to the transmission line L in year y	78.6	MWh/y	Option C	Electrical power meter	- Type of electrical power meter: Three-phase four-wire system electrical power meter - Specification: Electrical power meter is applied for measurement of electrical power loss. Measurement items of the electrical power meter are as follows 1) electric energy 2) electric current 3) voltage 4) power factor - Measuring method: 1) An electrical power meter is connected to the secondary side of an instrument transformer. Method for connection of the electrical power meter is determined carefully. 2) The electrical power meters are connected both of power transmission end and power reception end. Recording medium is provided to record the amount of electric power. 3) Time synchronization of power transmission end and power reception end is considered to record the amount of electric power. 4) The transmitted electric power and electric power loss are analyzed. - Calibration: 1) During the installation of equipment Certified precise electric power measurement equipment is provided, and the date of the calibration of the meter is; - Product No.140311542: 13/2/2017 2) Every year after the installation Same method which applied before installation of the electrical power meter will be applied every year after the installation. The accuracy level of electric meters is 0.5 (±0.5%.accuracy).	Continuous	
2/12/2017 -31/12/2017	2	$E_{L,receive,y}$	Power received at the point of receipt of the transmission line L in year y	77.5	MWh/y	Option C	Electrical power meter	- Type of electrical power meter: Three-phase four-wire system electrical power meter - Specification: Electrical power meter is applied for measurement of electrical power loss. Measurement items of the electrical power meter are as follows 1) electric energy 2) electric current 3) voltage 4) power factor - Measuring method: 1) An electrical power meter is connected to the secondary side of an instrument transformer. Method for connection of the electrical power meter is determined carefully. 2) The electrical power meters are connected both of power transmission end and power reception end. Recording mediums are provided to record the amount of electric power. 3) Time synchronization of power transmission end and power reception end is considered to record the amount of electric power. 4) The transmitted electric power and electric power loss are analyzed. - Calibration: 1) During the installation of equipment Certified precise electric power measurement equipment is provided, and the date of the calibration of the meter is; - Product No.140311545: 13/2/2017 2) Every year after the installation Same method which applied before installation of the electrical power meter will be applied every year after the installation. The accuracy level of electric meters is 0.5 (±0.5%.accuracy).	Continuous	
2/12/2017 -31/12/2017	3	$EF_{Grid,y}$	CO ₂ emission factor of the grid in year y	0.86	tCO ₂ /MWh	Option A	Value as published by the government	Emission factor for the corresponding year is used. If such data is not available, the most recent data available at the time of submission of the monitoring report is used.	Annually	

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
Rdc _{RF,L}	Direct current resistance of transmission line L using currently used transmission conductors	0.0718	Ω/km	As per the methodology	
Rdc _{p,J,L}	Direct current resistance of transmission line L using LL-ACSR/SA conductors (@20 deg. C)	0.0640	Ω/km	Measured according to IEC 60468 (Method of measurement of resistivity of metallic materials).	

Table3: Ex-post calculation of CO₂ emission reductions

Monitoring Period	CO ₂ emission reductions	Units
2/12/2017-31/12/2017	0	tCO ₂ /y

[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 of year y	N/A	0.1	tCO ₂ /y	ER _y
2. Selected default values, etc.				
Direct current resistance of transmission line L using currently used transmission conductors (@20 deg. C)	N/A	0.0718	Ω/km	Rd _{C_{RF},L}
Direct current resistance of transmission line L using LL-ACSR/SA conductors (@20 deg. C)	N/A	0.0640	Ω/km	Rd _{C_{PJ},L}
CO ₂ emission factor of the grid in year y	N/A	0.86	tCO ₂ /MWh	EF _{Grid,y}
3. Calculations for reference emissions				
Reference emissions during the period of year y	N/A	1.1	tCO ₂ /y	RE _y
Reference transmission loss at transmission line L in year y	N/A	1.3	MWh/y	LOSS _{RF,L,y}
4. Calculations of the project emissions				
Project emissions during the period of year y	N/A	1.0	tCO ₂ /y	PE _y
Project transmission loss at transmission line L in year y	N/A	1.1	MWh/y	LOSS _{PJ,L,y}
Power sent from the point of origin/supply to the transmission line L in year y	N/A	78.6	MWh/y	E _{L,send,y}
Power received at the point of receipt of the transmission line L in year y	N/A	77.5	MWh/y	E _{L,receive,y}

[List of Default Values]

Direct current resistance of transmission line L using currently used transmission conductors (@20 deg. C)		
LL-ACSR/SA 279/20mm ²	0.1158	Ω/km
LL-ACSR/SA 337/27mm ²	0.0939	Ω/km
LL-ACSR/SA 445/36mm ²	0.0718	Ω/km

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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
1/1/2018 -31/12/2018	1	$E_{L,send,y}$	Power sent from the point of origin/supply to the transmission line L in year y	568.2	MWh/y	Option C	Electrical power meter	- Type of electrical power meter: Three-phase four-wire system electrical power meter - Specification: Electrical power meter is applied for measurement of electrical power loss. Measurement items of the electrical power meter are as follows 1) electric energy 2) electric current 3) voltage 4) power factor - Measuring method: 1) An electrical power meter is connected to the secondary side of an instrument transformer. Method for connection of the electrical power meter is determined carefully. 2) The electrical power meters are connected both of power transmission end and power reception end. Recording medium is provided to record the amount of electric power. 3) Time synchronization of power transmission end and power reception end is considered to record the amount of electric power. 4) The transmitted electric power and electric power loss are analyzed. - Calibration: Power meter calibrated and the date of the calibration is; Product No.140311542 : 13/2/2017, 3/1/2019 The accuracy level of electric meters is 0.5 ($\pm 0.5\%$ accuracy). - QA/QC QA/QC is based on the following manual; "Manual for quantification, monitoring and reporting of greenhouse gas emission reductions" (ver1.0)	Continuous	
1/1/2018 -31/12/2018	2	$E_{L,receive,y}$	Power received at the point of receipt of the transmission line L in year y	557.1	MWh/y	Option C	Electrical power meter	- Type of electrical power meter: Three-phase four-wire system electrical power meter - Specification: Electrical power meter is applied for measurement of electrical power loss. Measurement items of the electrical power meter are as follows 1) electric energy 2) electric current 3) voltage 4) power factor - Measuring method: 1) An electrical power meter is connected to the secondary side of an instrument transformer. Method for connection of the electrical power meter is determined carefully. 2) The electrical power meters are connected both of power transmission end and power reception end. Recording mediums are provided to record the amount of electric power. 3) Time synchronization of power transmission end and power reception end is considered to record the amount of electric power. 4) The transmitted electric power and electric power loss are analyzed. - Calibration: Power meter calibrated and the date of the calibration is; Product No.140311545 : 13/2/2017, 3/1/2019 The accuracy level of electric meters is 0.5 ($\pm 0.5\%$ accuracy). - QA/QC QA/QC is based on the following manual; "Manual for quantification, monitoring and reporting of greenhouse gas emission reductions" (ver1.0)	Continuous	
1/1/2018 -31/12/2018	3	$EF_{Grid,y}$	CO ₂ emission factor of the grid in year y	0.86	tCO ₂ /MWh	Option A	Value as published by the government	Emission factor for the corresponding year is used. If such data is not available, the most recent data available at the time of submission of the monitoring report is used.	Annually	

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
Rdc _{RF,L}	Direct current resistance of transmission line L using currently used transmission conductors	0.0718	Ω/km	As per the methodology	
Rdc _{PJ,L}	Direct current resistance of transmission line L using LL-ACSR/SA conductors (@20 deg. C)	0.0640	Ω/km	Measured according to IEC 60468 (Method of measurement of resistivity of metallic materials).	

Table3: Ex-post calculation of CO₂ emission reductions

Monitoring Period	CO ₂ emission reductions	Units
1/1/2018-31/12/2018	1	tCO ₂ /y

[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 of year y	N/A	1.2	tCO ₂ /y	ER _y
2. Selected default values, etc.				
Direct current resistance of transmission line L using currently used transmission conductors (@20 deg. C)	N/A	0.0718	Ω/km	Rd _{C_{RF},L}
Direct current resistance of transmission line L using LL-ACSR/SA conductors (@20 deg. C)	N/A	0.0640	Ω/km	Rd _{C_{PJ},L}
CO ₂ emission factor of the grid in year y	N/A	0.86	tCO ₂ /MWh	EF _{Grid,y}
3. Calculations for reference emissions				
Reference emissions during the period of year y	N/A	10.7	tCO ₂ /y	RE _y
Reference transmission loss at transmission line L in year y	N/A	12.4	MWh/y	LOSS _{RF,L,y}
4. Calculations of the project emissions				
Project emissions during the period of year y	N/A	9.5	tCO ₂ /y	PE _y
Project transmission loss at transmission line L in year y	N/A	11.1	MWh/y	LOSS _{PJ,L,y}
Power sent from the point of origin/supply to the transmission line L in year y	N/A	568.2	MWh/y	E _{L,send,y}
Power received at the point of receipt of the transmission line L in year y	N/A	557.1	MWh/y	E _{L,receive,y}

[List of Default Values]

Direct current resistance of transmission line L using currently used transmission conductors (@20 deg. C)		
LL-ACSR/SA 279/20mm ²	0.1158	Ω/km
LL-ACSR/SA 337/27mm ²	0.0939	Ω/km
LL-ACSR/SA 445/36mm ²	0.0718	Ω/km