Climate project methodology № 0008

Renewable electricity generation for captive use and mini-grid

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Version 1.0

05 May 2023

Contents

1. Terms and Definitions

For the purpose of this methodology, the following definitions apply[1]:

Geothermal power plant - a power plant designed to convert the Earth's internal thermal energy into electrical energy [2].

Reservoir - an artificial reservoir formed by a water-retaining structure, filling a cavity or a collapsed area with water for the purpose of storing water and/or regulating runoff with special structures, creating a backup[3].

[1] When using the regulations and sets of rules referenced in this methodology, it is recommended to check the validity of reference documents in the public information system - on the official website of the federal executive body in the field of standardization on the Internet or according to the annual information index «National Standards»
[2] GOST R 55005-2012 Renewable energy. Geothermal power plants. Structures. Security requirements. The main provisions.
[3] GOST R 70214-2022. Hydraulic engineering. Basic concepts. Terms and definitions.

Hydroelectric power plant - a power plant that converts mechanical energy of water into electrical energy[4].

Tidal power station - a hydroelectric power station using the energy of sea tides[3].

A reservoir system - is a group of reservoirs located on one or more watercourses and functionally interconnected with each other[3].

Integrated hydro power project - integration of multiple hydropower plants/units with single or multiple reservoirs designed to function together.

Existing reservoir - a reservoir is to be considered as an “existing reservoir” if it has been in operation for at least three years before the implementation of the project activity.

Power plant - is a power plant designed for the production of electrical energy, containing a construction part, energy conversion equipment and necessary auxiliary equipment according to GOST 19431-84[5].

Greenfield power plant - a new renewable energy power plant that is constructed and operated at a site where no renewable energy power plant was operated prior to the implementation of the project activity.

Installed power, rated power - the power with which the electrical installation, equipment can operate for a long time under nominal parameters and/or normal conditions[6]. Expressed in watts or one of its multiples, for which the power unit has been designed to operate at nominal conditions. The structure of the installed capacity of power plants is a shared distribution of the total installed capacity of power plants by their types or by types of units[4].

Capacity addition - a capacity addition is an investment to increase the installed power generation capacity of existing power plants through: 1. the installation of a new power plants/units besides the existing power plants/units; or 2. the installation of new power plants/units, additional to the existing power plants/units; or 3. construction of a new reservoir along with addition of new power plants/units in case of integrated hydro power projects. The existing power plants/units in the case of capacity addition continue to operate after the implementation of the project activity.

Technical re-equipment[7] - is a set of measures to improve the technical and economic indicators of fixed assets or their individual parts based on the introduction of advanced equipment and technology, mechanization and automation of production, modernization and replacement of obsolete and physically worn-out equipment with new, more efficient equipment[8].

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[4] GOST 19431-84. Energy and electrification. Terms and definitions.
[5] GOST 24291-90 Interstate standard. The electrical part of the power plant and the electrical network. Terms and definitions.
[6] GOST R 57114-2016. Unified energy system and isolated power systems. Electric power systems. Operational dispatch management in the electric power industry and operational and technological management. Terms and definitions.
[7] For the terms «Technical re-equipment», «Modernization», «Reconstruction» and «Overhaul», the definition of a single terminology in the regulatory documents of the Russian Federation is not established and there may be discrepancies depending on the objects subject to these types of work. Terminology in reference methodologies also does not coincide in full (indicated for each specific term). The term «Technical re-equipment» in the sense of use in the methodology is close to the term «Modernization». However, the Russian legal field divides these concepts. This methodology took into account the recommendations of RD 153-34.3-20.409-99 Guidelines on the definition of concepts and attribution of types of work and activities in the electrical networks of the Electric power industry to new construction, expansion, reconstruction and technical re-equipment.
[8] The Tax Code of the Russian Federation (Part Two) of 05.08.2000 No. 117-FZ (ed. of 18.03.2023) (with amendments and additions, intro. effective from 01.04.2023)

Modernization (fixed asset completion, equipping, replacement[9]) - works caused by a change in the technological or service purpose of equipment, buildings, structures or other object of depreciable fixed assets, increased loads and (or) other new qualities7, i.e. it is the replacement of outdated equipment with new due to functional wear. Modernization of the electric power industry includes not only decommissioning of old, physically and morally obsolete equipment, reconstruction of low-efficiency equipment and replacement of technologies with modern ones, but also the creation of fundamentally new equipment and energy technologies.

Reconstruction - is the reconstruction of existing fixed assets connected to the improvement of production and its technical and economic indicators and carried out under the project of reconstruction of fixed assets in order to increase production capacity, improve quality and change the nomenclature of production[8]. The reconstruction of existing energy enterprises includes the reconstruction of existing workshops and facilities for the main, auxiliary and maintenance purposes of power plants, thermal and electrical networks associated with the improvement of production, increasing the technical and economic level, changing the main technical and economic indicators. The objects of electrical networks are subject to reconstruction, as a rule, having an unsatisfactory condition of building structures and structures due to the development of a standard service life, due to various natural disasters[10] that do not meet the requirements of sanitary standards and ecology.

Overhaul[11] - repair in order to restore the usability (operability) of structures and equipment, as well as to maintain operational performance. During the retrofit of equipment, which is carried out to restore the usability and full or close to full resource of the object with the replacement or restoration of any of its parts, a complete disassembly of the unit, repair of basic and body parts and assemblies, replacement or restoration of all worn-out parts and assemblies to new and more modern, assembly, regulation and testing of the unit can be carried out. During the retrofit of the equipment, its functional purpose should not be changed. The purpose of the equipment retrofit is to restore its technical and economic characteristics to values close to the initial ones[12].

Mini-grid - is a small-scale power system with a total capacity not exceeding 15 MW (i.e. the sum of installed capacities of all generators connected to such grid is equal to or less than 15

[9] Reference methodologies developed within the framework of the Clean Development Mechanism (AMS-I.F., ACM0002) use the following interpretation for this term: **Replacement** - is an investment in new power plants/units that replaces one or several existing units at the existing power plant. The new power plants/units have the same or a higher power generation capacity than the plants/units that were replaced

[10] Reference methodologies developed within the framework of the Clean Development Mechanism (AMS-I.F., ACM0002) use the following interpretation for this term: **Rehabilitation (or refurbishment)** - is an investment to restore the existing power plants/units that was severely damaged or destroyed due to foundation failure, excessive seepage, earthquake, liquefaction, or flood. The primary objective of rehabilitation or refurbishment is to restore the performances of the facilities. Rehabilitation may also lead to increase in efficiency, performance or power generation capacity of the power plants/units with/without adding new power plants/units

[11] Reference methodologies developed within the framework of the Clean Development Mechanism (AMS-I.F., ACM0002) use the following interpretation for this term: **Retrofit** - is an investment to repair or modify existing operating power plants/units, with the purpose to increase the efficiency, performance or power generation capacity of the plants/units, without adding new power plants/units. A retrofit restores the installed power generation capacity to or above its original level. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures.

[12] Order of the Ministry of Energy of the Russian Federation No. 1013 dated 25.10.2017 «On Approval of Requirements for Ensuring the Reliability of Electric Power Systems, Reliability and Safety of Electric Power Facilities and Power Receiving Installations «Rules for the Organization of Maintenance and Repair of Electric Power Facilities» (with amendments and additions)

MW[13]) which is not connected to the Unified Energy System of Russia (i.e. is an isolated energy system[14]).

TDL (Network losses) - the average level of losses of electrical and thermal energy during transmission and distribution, as well as the loss of hot, drinking, technical water during production and transportation.

Crediting period – the period in which verified and certified GHG emission reductions or increases in net anthropogenic GHG removals by sinks attributable to a climate project activity, as applicable, can result in the issuance of carbon units. The time period that applies to a crediting period for a climate project activity, and whether the crediting period is renewable or fixed, is determined in accordance with Section 4. Project crediting period of this methodology.

2. Scope and applicability

The following table describes the key elements of the methodology:

Table 1. Methodology key elements

Typical projects	Production of electricity using renewable energy technologies such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s)
Type of GHG emissions mitigation action	Renewable energy: Displacement of electricity that would be provided to the user(s) by more-GHG-intensive means

Given methodology is unaffected by applying to the greenhouse gases (GHG) programs. If a GHG program is applied, then the requirements of this program supplement the requirements of the methodology. This methodology is prepared based on the existing methodology developed under the Clean Development Mechanism (AMS-I.F.) and includes its adaptation to the current Russian regulations and standards.

2.1. Scope

This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to users. The project activity will displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit, i.e. in the absence of the project activity, the users would have been supplied electricity from one or more sources listed below:

1. a national or a regional grid (grid hereafter);
2. a fossil fuel fired captive power plant[15];

[13] The 15 MW limit has been retained by the methodology for this project type in order for matching the project activities implemented in the Russian Federation with the project activities under the CDM. The project activity (AMS-I.F.) is included in the block of small-scale project activities in the field of renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts (or an appropriate equivalent) (decision 17/CP.7, paragraph 6 (c) (i)). In this context: «Output» is the installed/rated capacity as indicated by the manufacturer of the equipment or plant, irrespective of the actual load factor of the plant. The installed/rated capacity of renewable electricity generating units that involve turbine generator systems shall be based on the installed/rated capacity of the generator. Projects may refer to MW(p), MW(e) or MW(th), where (p) stands for peak, (e) stands for electric and (th) stands for thermal. As MW(e) is the most common denomination, and MW(th) only refers to the production of heat which can also be derived from MW(e), MW define as MW(e) and otherwise to apply an appropriate conversion factor (FCCC/KP/CMP/2005/8/Add.1).

[14] An isolated energy system is a power system that does not have electrical connections for parallel operation with other power systems. (GOST 21027-2021. Interstate standard. Electric power systems. Terms and definitions)

[15] Under such situations, the consumers of the captive electricity should be also connected to the grid.

3. a carbon intensive mini-grid[16].

2.2. Applicability

This methodology is applicable for project activities that: 1. install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); 2. involve a capacity addition[17], 3. involve an overhaul[18] of (an) existing plant(s); or 4. Involve a modernization[19] of (an) existing plant(s).

Project types that the methodology is applied are indicated in Table 2.

Table 2. The methodology applicability based on project types

	Project type	Applicability
1	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)	√
2	Project supplies electricity to a mini grid[20] system where in the baseline all generators use exclusively fuel oil and/or diesel fuel	√

In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct[21] from the existing units.

In the case of overhaul or modernization, the total output of the overhauled or replacement unit shall not exceed the limit of 15 MW[22].

If the unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), applies only to the renewable component.

Combined heat and power (co-generation) systems, as well as installations for the production renewable energy from biomass[23] are not considered in this type of project.

Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:

1. the project activity is implemented in an existing reservoir with no change in the volume of reservoir;

2. the project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m^2;

3. the project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m^2.

If electricity and/or steam/heat produced by the project activity is delivered to a third party, i.e. another facility or facilities within the project boundary, a contract between the supplier and

[16] Incl. Technologically isolated territorial electric power system (TITEPS) (see GOST R 57114-2016)
[17] See **Capacity addition** in Section 1.
[18] See **Overhaul** in Section 1
[19] See Modernization / **Technical re-equipment** in Section 1
[20] The sum of installed capacities of all generators connected to the mini-grid is equal to or less than 15 MW
[21] Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility
[22] To meet the requirements of a small-scale project
[23] Identification of emissions sources and leakage emissions for project activities using biomass requires special accounting and monitoring procedures, including leakage analysis resulting from the redirection of biomass from other applications to the project. These procedures are not considered in the methodology, and the use of biomass is excluded.

consumer(s) of the energy will have to be entered that ensures that there is no double counting of emission reductions.

In case of changes the cited acts of national legislation, this methodology is subject to revision in order to take into account the relevant changes[24].

2.3. Project boundary

The spatial extent of the project boundary includes industrial, commercial facilities consuming energy generated by the system. In the case of electricity generated and supplied to distributed users (e.g. residential users) via mini/isolated grid the project boundary may be confined to physical, geographical site of renewable generating units. The boundary also extends to the project power plant and all power plants connected physically to the electricity system to which the project power plant is connected.

3. Baseline methodology

Baselines shell be set in a conservative way and below «business as usual»[25] emission projections (including by taking into account all existing policies).

Each project shall apply of one of the approaches below to setting the baseline with justification for the appropriateness of the choices:

1) best available technologies that represent an economically feasible and environmentally sound course of action;

2) an ambitious benchmark approach where the baseline is set at least at the average emission level of the 20% best performing comparable activities providing similar outputs and services in a defined scope in similar social, economic, environmental and technological circumstances;

3) an approach based on existing actual or historical emissions, adjusted downwards.

Standardized baselines shall be established at the highest possible level of aggregation.

The minimum requirements for determining the baseline for climate projects that are implemented and used for issuing carbon units within the territory of the Russian Federation are established in Order of the Ministry of Economic Development of Russia (11.05.2022 № 248)[26]. The approaches proposed in this methodology are consistent with the standardized approach applied at the international level[27].

Baseline scenario for *Greenfield power plant* is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants, a fossil fuel fired captive power plant or a carbon intensive mini-grid.

Baseline scenario for *overhaul, reconstruction or modernization* plant that involve retrofit, rehabilitation, replacement of an existing facility, the baseline scenario is the continuing operation of the existing plant. In this case, historical electricity generation data is used (to determine the electricity generation of the existing plant in the baseline scenario), assuming that

[24] The project developer should keep in mind that the normative documents given in the text can be changed or canceled
[25] «Business as usual» - an established principle when no action is taken to reduce anthropogenic GHGs emissions
[26] Order of the Ministry of Economic Development of Russia (11.05.2022 № 248) "On approval of the criteria and procedure for classifying projects implemented by legal entities, individual entrepreneurs or individuals as climate projects, the form and procedure for submitting a report on the implementation of a climate project"
[27] Methodology AMS-I.F.: Renewable electricity generation for captive use and mini-grid. Version 5.0. CDM Methodology

the historical situation observed prior to the implementation of the project activity would continue.

If it is certain that a power plant is scheduled for overhaul, reconstruction or modernization in the absence of project activities, then from that point on it is assumed that the baseline scenario corresponds to the project activity and no emission reductions will occur.

Baseline scenario for *capacity addition* is a capacity addition to existing grid-connected renewable energy power plant (unit). The baseline scenario is the existing facility that would continue to supply electricity to the grid, a captive power plant, mini-grid at historical levels, until the time at which the generation facility would likely be modernized or overhauled. Electricity delivered by the added capacity would have otherwise been generated by the operation of grid-connected/captive power plants and by the addition of new generation sources. From overhaul or modernization point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur.

Baseline emissions

Option 1. For a *mini-grid system* where all generators use exclusively fuel oil and/or diesel fuel, the baseline emissions are the annual electricity generated by the renewable energy unit times an emission factor for a modern diesel generating unit of the relevant capacity operating at optimal load[28];

Option 2. Baseline emissions for other electricity systems include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. It assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants, a captive power plant, mini-grid (other than described in *Option 1*).

Baseline emissions are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor.

$$BE_y = EG_{BL,y} \times EF_{CO2,y} \quad (3.1)$$

Where:

BE_y	Baseline emissions in year *y* (t CO_2)
$EG_{BL,y}$	Quantity of net electricity displaced as a result of the implementation of the project activity in year *y* (MWh)
$EF_{CO2,y}$	Emission factor (t CO_2/MWh). The recommended approach to determine the network emission factor is defined in Appendix 1. The recommended approach to determine the indirect energy emissions factor for captive use and mini-grid is defined in Appendix 2. For a mini-grid other that described in *Option 1*, the emission factor is defined as the weighted average emissions for the current generation (see Appendix 1).

For project activities that displace electricity consumed from the electric grid and from a fossil fuel fired on-site captive power plant, the baseline emission factor shall reflect the emissions intensity of the grid and the captive power plant in the baseline scenario, i.e. the weighted average emission factor for the displaced electricity is calculated using values based on the

[28] The calculation of emissions must be carried out in accordance with the guidelines set out in the Order of the Ministry of Natural Resources of the Russian Federation dated 27.05.2022 No. 371

historical (prior three year ratio) of electricity from captive plants and the grid[29]. For new facilities, the most conservative (lowest) of the emission factor for the two power sources should be used.

The approach to estimate EG for project activities that involve overhaul or modernization of an existing facility and/or capacity addition at an existing facility or construction of a Greenfield power plants is described in the Appendix 3.

4. Project crediting period

A crediting period is a maximum of 5 years renewable a maximum of twice, or a maximum of 10 years with no option of renewal, that is appropriate to the activity.

For validation, projects can be submitted to the validation and verification body, the implementation of which was started no earlier than 2 years before submission for validation.

The crediting period shall not start before the registration of the project in the Register of Carbon Units.

5. Additionality

Additionality shall be demonstrated using Tool №1 Demonstration of the additionality of the project activity[30].

In case of integrated hydro power project, the following shall be considered for the purpose of investment analysis:

1. investment associated with the project activity i.e. construction of a new reservoir and new power plants/units; and

2. revenue due to net electricity generation.

In case of Greenfield power plant, or overhaul to an existing plant, to assess the economic attractiveness of the project activity, the project developer shall use the highest possible tariff that they may receive by supplying the electricity. Only in exceptional cases, where project developer can justify showing data on the load/consumption and generation pattern of the project activity, may other tariffs be applied.

6. Monitoring plan requirements

100% of the data should be monitored if not indicated otherwise in the table in Appendix 4. Some parameters either need to be monitored continuously during the crediting period or need to be calculated only once for the crediting period, depending on the data.

All measurements should be conducted with calibrated measurement equipment according to relevant industry standards.

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[29] For example, if in the baseline 80 % of annual electricity requirement was met by grid import and the remaining by captive generation, the weighted average emission factor ($EF_{electricity}$) would be 0.8 EF_{grid} + 0.2 $EF_{captive}$

[30] Implemented climate projects that are used for issuing carbon units within the territory of the Russian Federation must comply with Article 9 of the Federal Law (02.07.2021 №296-FZ) “On Limiting Greenhouse Gas Emissions”, as well as the criteria established in accordance with the Order of the Ministry of Economic Development of Russia (11.05.2022 № 248) "On approval of the criteria and procedure for classifying projects implemented by legal entities, individual entrepreneurs or individuals as climate projects, the form and procedure for submitting a report on the implementation of a climate project".

All data collected as part of monitoring should be archived electronically and be kept at least for two years after the end of the last crediting period.

The calculation of the parameters, emission factors, source data should be documented electronically that should be attached to the Project design document (PDD). The documentation should include all data used to calculate the emission factors and other parameters. The data should be presented in a manner that enables reproducing of the calculation.

The data and parameters monitored as a result of the project activity are given in Appendix 4.

Parameters relevant to hydro and geothermal plants/units which are shall be monitored as a result of this project activity are described in the methodology "Grid-connected electricity generation from renewable source" (Climate project methodology No. 0007).

7. Project scenario

The minimum requirements for determining the project emissions are implemented and used for issuing carbon units within the territory of the Russian Federation are established in Order of the Ministry of Economic Development of Russia (11.05.2022 № 248)[26]. The approaches proposed in this methodology are consistent with the standardized approach applied at the international level[27].

The calculation of CO_2 emissions from on-site consumption of fossil fuels by the project activity must be carried out in accordance with the guidelines set out in the Order of the Ministry of Natural Resources of the Russian Federation dated 27.05.2022 No. 371.

For all types of renewable energy projects, except hydro and geothermal power plants, project emissions $PE_y = 0$.

Project emissions for:

- geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption);

- water reservoirs of hydro power plants,

are described in the methodology "Grid-connected electricity generation from renewable source" (Climate project methodology No. 0007).

Overhaul. For project activities that seek to overhaul or modify existing units or equipment, the baseline may refer to the characteristics (e.g. emissions, efficiency) of the existing unit or equipment only to the extent that the project activity does not increase capacity or output or level of service unless detailed specifications. For any increase of capacity or output or level of service beyond this range due to the project activity, a different baseline shall apply.

Project developer must document and justify in the PDD the applied algorithms for the validation and verification body.

Emission reductions

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (6.1)$$

Where:

ER_y	Emission reductions in year *y* (t CO_2/y)
BE_y	Baseline Emissions in year *y* (t CO_2/y)

PE_y	Project emissions in year *y* (t CO_2/y)
LE_y	Leakage emissions in year *y* (t CO_2/y)

Risk management

As part of the project implementation, it is recommended to develop a risk assessment system with a description of the most likely risks that may arise at all stages of the climate project. For such an assessment, the project developer should develop a detailed matrix with the following information, as a minimum:

1. the main stages of the implementation of the climate project;

2. description of the risks that may arise at each stage of the climate project;

3. description of the probability of occurrence of risks (for this, the rating options "low, medium, high" or any other understandable numerical scales can be used);

4. description of the impact of each risk on the results of the entire project (for this, the rating options "low, medium, high" or any other understandable numerical scales can be used);

5. description of the period of influence of each risk on the entire climate project;

6. description of the developed measures to minimize or avoid each type of risks;

7. description of the time period required for the implementation of each measure that reduces or prevents the occurrence of risks is indicated.

The recommended table for completion, reflecting the result of the risk management measures is given in Appendix 5.

8. Leakage assessment

According to the Order of the Ministry of Economic Development of Russia dated 11.05.2022 №248[31] project activities should not lead to an aggregate increase in greenhouse gas emissions or reduce their absorption levels outside the scope of such activities. At the same time it is necessary to consider and fully account for if project leaks exist in accordance.

Project developer must independently determine the most relevant methods will be applied to estimate leakage, document and justify the applied algorithms for the validation and verification body, including the approaches applied at the international level.

Leakage due to transfer of equipment. If the project activity involves the replacement of equipment, it is necessary to justify and document the absence of leakage due to the possible reuse of the replaced equipment in another activity. The scrapping of replaced equipment must be documented.

The project developer shall indicate in the PDD which leakage sources are included. If emission sources are not considered, the project developer shall provide proper justification in the PDD.

9. Non-permanence risk analysis

Not applicable to the project activity.

[31] Appendix № 1 to the order of the Ministry of Economic Development of Russia of May 11, 2022 № 248, paragraph "в"

10. Methods to prevent double counting, negative impacts on the environment and society

Climate project should demonstrate its compliance with all legal requirements in the jurisdiction where it is located (including but not limited to the Reference list methodologies). Project developer should question whether there is a risk that their project might result in negative impacts for local communities, biodiversity and the environment. Such projects should not cause an increase in atmosphere, soil, surface and ground water pollution as well as lead to any community conflicts, land tenure issues, forceful evictions, human rights violations, or worsened health and wellbeing due to restricted access to a forest or nature area.

Efforts should be made to avoid double counting between project areas (project boundaries), between company reporting and reporting on the project, between the reporting of different companies, between the subjects of the Russian Federation and different countries in the case of international transfer of carbon credits. In the latter case, it is necessary to demonstrate that the carbon credits transferred at the international level are excluded from the accounting of the quantitative goals of the defined at the national level contribution of the Russian Federation.

11. Update of the baseline at the renewal of the crediting period

At the renewal of crediting period the project is subject to verification with elements of validation and a technical assessment by a validation and verification body to determine necessary updates to the baseline, the additionality and the quantification of emission reductions.

The renewal of the crediting period of a registered project activity shall only be granted if The Project developer can provide evidence that the original project baseline is still valid or has been updated taking account of new data where applicable.

Project developer shall update those sections of the project design document relating to the baseline, estimated emission reductions and the monitoring plan using an approved baseline and monitoring methodology: the latest approved version of a baseline and monitoring methodology, applied in the original PDD of the registered project activity, shall be used whenever applicable.

The demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the emissions which would have resulted from that scenario. The additionality at the renewal of the crediting period is checked for compliance to the criteria under Tool № 1 at the date of the beginning of the new crediting period.

If a review or update of the baseline of a registered project has been made, the Project developer must justify the validation and verification body of the need to deviate from the approved methodology in order to extend the credit period.

Assessment the validity of the original/current baseline and to update the baseline at the renewal of a crediting period. A stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period (see Appendix 6).

12. Normative references

1. AMS-I.F.: Renewable electricity generation for captive use and mini-grid. Version 5.0. CDM Methodology

2. Order of the Ministry of Economic Development of Russia dated May 11, 2022 № 248 "On approval of the criteria and procedure for classifying projects implemented by legal entities, individual entrepreneurs or individuals, as climate projects, the form and procedure for reporting on the implementation of a climate project" (Registered with the Ministry of Justice of Russia on May 30, 2022 № 68642)
3. GOST R ISO 14064-1-2021. National Standard of the Russian Federation. Greenhouse gases. Part 1. Requirements and Guidance for Quantification and Reporting of Greenhouse Gas Emissions and Absorption at the Organization Level (approved and enacted by Rosstandart Order No. 1029-st dated 30.09.2021);
4. GOST R ISO 14064-2-2021. National Standard of the Russian Federation. Greenhouse gases. Part 2. Requirements and Guidelines for Quantification, Monitoring and Reporting Documents for Projects to Reduce Greenhouse Gas Emissions or Increase Their Absorption at the Project Level (approved and enacted by Order No. 1030-st of Rosstandart dated September 30, 2021);
5. GOST R ISO 14064-3-2021. National Standard of the Russian Federation. Greenhouse gases. Part 3. Requirements and Guidance for Validation and Verification of Greenhouse Gas Statements (approved and enacted by Rosstandart Order No. 1031-st of 30.09.2021);
6. GOST R ISO 14065-2014 National Standard of the Russian Federation. Greenhouse gases. Requirements for greenhouse gas validation and verification bodies for their application in accreditation or other forms of recognition (approved and enacted by Order of Rosstandart of 26.11.2014 № 1869-st);
7. GOST R ISO 14080-2021. National Standard of the Russian Federation. Greenhouse Gas Management and Related Activities. System of approaches and methodological support for the implementation of climate projects (approved and enacted by Order of Rosstandart No. 1033-st dated 30.09.2021);
8. GOST R ISO 14066-2013. National Standard of the Russian Federation. Greenhouse gases. Requirements for competence of greenhouse gas validation and verification groups (approved and enacted by Order of Rosstandart of 17.12.2013 № 2274-st);
9. Order of the Ministry of Natural Resources of Russia dated May 27, 2022 № 371 "On approval of methods for quantitative determination of greenhouse gas emissions and greenhouse gas removals" (from March 1, 2023, except for certain provisions, coming into force on March 1, 2024);
10. IPCC 2006. Guidelines for National Greenhouse Gas Inventories of the Intergovernmental Panel on Climate Change, 2006 / Edited by S. Iggleston, L. Buendia, K. Miwa, T. Ngara and K. Tanabe. // T.1-5. - IGES// Hayyam. 2006.
11. Order of the Ministry of Natural Resources of the Russian Federation (16.04.2015 № 15-r) "On approval of guidelines for conducting a voluntary inventory of greenhouse gas emissions in the constituent entities of the Russian Federation"
12. ACM0002: Grid-connected electricity generation from renewable sources. Version 21.0. CDM Methodology
13. AMS-I.A. Electricity generation by the user. Version 19.0. CDM Methodology
14. AMS-I.D. Grid connected renewable electricity generation. Version 18.0. CDM Methodology
15. TOOL03 Methodological tool. Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion. Version 03.0. CDM Methodology
16. TOOL05 Methodological tool. Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation. Version 03.0. CDM Methodology
17. TOOL07 Methodological tool. Tool to calculate the emission factor for an electricity system. Version 07.0. CDM Methodology

18. Methodological Tool. Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period. Version 03.0.1. CDM Methodology
19. TOOL16: Project emissions from cultivation of biomass. Version 5.0. CDM Methodology
20. TOOL33: Default values for common parameters. Version 2.0. CDM Methodology
21. FCCC/KP/CMP/2005/8/Add.1 Annex II Simplified modalities and procedures for small-scale clean development mechanism project activities, 30.03.2006
22. TOOL №1 Demonstration of the additionality of the project activity. Version 1.0
23. Climate project methodology №0007 "Grid-connected electricity generation from renewable source"
24. GOST 21027-2021. Interstate standard. Electric power systems. Terms and Definitions.
25. GOST R 55005-2012 Renewable energy. Geothermal power plants. Structures. Security requirements. The main provisions.
26. GOST R 70214-2022. Hydraulic engineering. Basic concepts. Terms and definitions.
27. GOST 19431-84. Energy and electrification. Terms and definitions.
28. GOST 24291-90 Interstate standard. The electrical part of the power plant and the electrical network. Terms and definitions.
29. GOST R 57114-2016. Unified energy system and isolated power systems. Electric power systems. Operational dispatch management in the electric power industry and operational and technological management. Terms and definitions.
30. The Tax Code of the Russian Federation (Part Two) of 05.08.2000 No. 117-FZ (ed. of 18.03.2023) (with amendments and additions, intro. effective from 01.04.2023)
31. Order of the Ministry of Energy of the Russian Federation No. 1013 dated October 25, 2017 "On Approval of Requirements for Ensuring the Reliability of Electric Power Systems, Reliability and Safety of Electric Power Facilities and Power Receiving Installations "Rules for the Organization of Maintenance and Repair of Electric Power Facilities" (with amendments and additions)

Appendix 1. Recommended approach for calculation of grid emissions factor (emission factor for an electricity system)

1. Currently, there are no legislatively approved grid emission factors for greenhouse gases (GHG) in the Russian Federation.

2. If the initial data required to calculate the grid emission factor for the baseline and project scenarios is available, the climate project developer has the right to calculate it independently. In this case, it is recommended to use the Guidelines for the quantitative calculation of the volume of indirect energy emissions of greenhouse gases (Order of the Ministry of Natural Resources № 330 (29.06.2017)[32]) and the principles for calculating indirect energy emissions defined in GOST R ISO 14064-1-2021[33].

To determine the grid emission factor, a regional method for calculation of indirect energy emissions is used, which reflects the average intensity of greenhouse gas emissions at facilities generating electrical and thermal energy consumed by the organization (Order of the Ministry of Natural Resources № 330).

According to GOST R ISO 14064-1-2021 (Appendix E), emissions from imported electricity must be calculated by the project developer using a location-based approach[34] by applying an emission factor that best characterizes the relevant electric power system, i.e. leased transmission line, local, regional or national grid average emission factor. The grid-averaged emission factors should refer to the emissions of the reporting year, if available, or otherwise the latest available year. Grid-averaged emission factors for imported electricity should be based on the average consumption pattern from the electric power system from which the electricity is consumed.

Grid emission factors may also include other indirect emissions associated with electricity generation, such as transmission and distribution losses.

The requirements and guidance described in ISO 14064-1-2021 for electricity also apply to consumed and transferred heat, steam, cooling air and compressed air.

In case of energy from cogeneration facilities, it is necessary to use approaches to separate various forms of energy[35].

Association "NP Market Council (Sovet Rynka)" and JSC "ATS" have developed a concept for calculating and publishing greenhouse gas emission factors for the energy system of the Russian Federation[36]. Based on the results of the peer review, independent international auditors issued an assurance certificate, and this concept received a validation report[37]. It is assumed that the

[32] Order of the Ministry of Natural Resources and Ecology of the Russian Federation (29.06.2017 № 330) "On approval of guidelines for quantifying the volume of indirect energy emissions of greenhouse gases"
[33] GOST R ISO 14064-1-2021. National Standard of the Russian Federation. Greenhouse gases. Part 1. Requirements and Guidance for Quantification and Reporting of Greenhouse Gas Emissions and Absorption at the Organization Level (approved and enacted by Rosstandart Order 30.09.2021 №1029-st)
[34] The location-based approach is a method for quantifying indirect energy emissions based on average emission factors from energy production for a given geographic location, including local, regional or national boundaries
[35] For example, calculation of specific fuel consumption in accordance with the "Guidelines for the distribution of specific fuel consumption in the production of electrical and thermal energy within combined generation of electrical and thermal energy, used for the purpose of tariff regulation in the heat supply", legislatively approved by the Order of the Ministry of Energy of the Russian Federation (12.09.2016 №952)
[36] The concept of calculation and publication of greenhouse gas emission factors for the energy system of the Russian Federation URL: https://www.np-sr.ru/sites/default/files/koncepciya_kev.pdf
[37] As part of the validation procedure, a detailed verification of the Concept was carried out for its compliance with the requirements of the international standards in the field of accounting and reporting on greenhouse gas emissions (TÜV AUSTRIA). Based on the results of the audit, the Concept was recognized by international experts as

implementation of this concept will lead to the more accurate calculation and publication of grid emission factors. The approaches outlined in the concept can also be used by the project developer to calculate the emission factor of the electric power system.

3. If it is impossible to calculate the grid emission factor on its own, the project developer can use grid emission factors from the following sources:

Source 1. JSC "Administrator of the Trading System" in test mode in 2021 launched an Internet resource that publishes the grid CO2 emission factor for the first synchronous zone of the Russian Federation for various time periods (hour, day, month, year) [38].

Source 2. Emission factors of the International Energy Agency (IEA). The data is updated annually for the entire energy system of the regions (including the Russian Federation) and reflects the average carbon intensity of electricity and heat generation[39].

Source 3. Climate Transparency Global Partnership develops G20 climate indicators. The agency publishes annually reports from the G20[40] countries, including the average energy emission factor.

4. Methods and approaches applied to the calculation of the grid emission factor should be documented and specified in the PDD. It is necessary to justify the chosen calculation methodology, disclose information about the source of the initial data used, transparently and accurately document your own procedure for calculating the grid emission factor, or describe the properties of the selected and applied grid emission factor.

complying with high international standards and best international practices for calculating energy system emission factors. URL: https://www.np-sr.ru/sites/default/files/zaklyuchenie_o_validacii_koncepcii.pdf

[38] URL: https://www.atsenergo.ru/results/co2

[39] URL: https://www.iea.org/data-and-statistics/data-product/emissions-factors-2021

[40] URL: https://www.climate-transparency.org/g20-climate-performance/g20report2022#1531904804037-423d5c88-a7a7

Appendix 2. Recommended approach for calculation of indirect energy emissions factor for captive use and mini-grid

1. Calculation of the indirect energy emissions factor for captive use and mini-grid electricity consuming is carried out by the market approach (Order of the Ministry of Natural Resources of Russia №330 29.06.2017[41]).

2. The market approach is used when the electricity consumed is received under bilateral contracts for the sale of electricity, signed in accordance with the rules of the wholesale electricity and capacity market and the operation of retail electricity markets[42]. Market factors of indirect energy emissions are indicated in sales contracts, in retail electricity markets contracts; or provided in certificates confirming the volume of electricity production at generating facilities produced from renewable energy sources, information about which is entered in the register[43]; or calculated based on the volumes of electricity received from specific external generating facilities in accordance with the terms of sales contracts, retail market contracts or certificates for the reporting period. Methodological guidelines for the calculation are set out in the Order of the Ministry of Natural Resources of Russia №330 29.06.2017.

3. If the supplier of electricity under sales contracts, retail market contracts or certificates has several generating facilities[44], the market factor is determined only for the generating facility (or generating facilities) from which (or from which) electricity is received by the consumer.

4. If additional electrical energy is consumed under project activity, that was not declared by sales contracts, retail market contracts or certificates (undeclared balance of electricity, i.e. the amount of electricity consumed in excess of the established contract (and) and/or certificate(s)), then the volume of the undeclared balance of electrical energy is determined based on the information of electricity received from external generating facilities located in the regional energy system. Thus, indirect energy emissions from the consumption of electricity received under contracts and/or certificates are calculated based on the market approach, and indirect emissions from the consumption of undeclared balance of electricity - using location-based approach (see Appendix 1).

5. In the Russian Federation there are generating facilities that do not connected with the Unified Energy System of Russia - Technologically isolated territorial electric power system (TITEPS[45]). In such cases, calculation of indirect energy emissions should be based on the individual emission factors of all generating facilities included in mini-grid (the Order of the Ministry of Natural Resources of Russia №330 29.06.2017).

6. Market approach is not used to calculate indirect energy emissions from heat consumption. Thermal energy received from external generating facilities is evaluated by the location-based approach (the Order of the Ministry of Natural Resources of Russia №330 29.06.2017).

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[41] Order of the Ministry of Natural Resources and Ecology of the Russian Federation (29.06.2017 № 330) "On approval of guidelines for quantifying the volume of indirect energy emissions of greenhouse gases"
[42] Federal Law "On the Electric Power Industry" with amendments and additions (26.03.2003 №35-FZ)
43 Decree of the Government of the Russian Federation "On some issues related to the certification of volumes of electrical energy produced at generating facilities operating on the use of renewable energy sources" with amendments and additions (№117 17.02.2014)
[44] For example, hydropower stations or thermal power stations
[45] Technologically isolated territorial electric power system (TITEPS) - an electric power system located on the territory determined by the Government of the Russian Federation, which has no technological connection with the Unified Energy System of Russia (GOST R 57114-2016 Unified energy system and isolated operating energy systems. Electric power systems. Operational and dispatching management in the electric power industry and operational-technological management. Terms and definitions.)

7. The project developer needs to ensure that the used approaches and data comply with the general requirements and guidance for considering imported electricity consumed for project activity set out in GOST R ISO 14064-1-2021[46] (Appendix E).

8. Used input data sources, applied methods and approaches should be documented and specified in the PDD. It is necessary to justify the chosen calculation methodology, disclose information about the source of the initial data used, transparently and accurately document procedure for calculating indirect energy emission factor based on market approach.

[46] GOST R ISO 14064-1-2021. National Standard of the Russian Federation. Greenhouse gases. Part 1. Requirements and Guidance for Quantification and Reporting of Greenhouse Gas Emissions and Absorption at the Organization Level (approved and enacted by Rosstandart Order 30.09.2021 №1029-st)

Appendix 3. Recommended approach for calculation quantity of net electricity displaced as a result of the implementation of the project activity

The calculation of $EG_{BL,y}$ is different for greenfield plants, capacity additions, overhaul, and modernization an existing facility.

1. Greenfield power plant

If the project activity is the installation of a greenfield power plant, then:

$$EG_{BL,y} = EG_{BL,facility,y} \quad \text{(A3.1)}$$

Where:

$EG_{BL,facility,y}$	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh)

2. Capacity addition in wind, solar, wave or tidal power plants

In the case of wind, solar, wave or tidal power plants/units, it is assumed that the addition of new capacity does not significantly affect the electricity generated by existing plants/units. In this case, the electricity fed into the grid by the added power plants/units shall be directly metered and used to determine $EG_{BL,y}$.

$$EG_{BL,y} = EG_{BL\_Add,y} \quad \text{(A3.2)}$$

Where:

$EG_{BL\_Add,y}$	Quantity of net electricity generation supplied to the grid in year *y* by the project plant/unit that has been added under the project activity (MWh)

3. Capacity addition in hydro or geothermal power plants

In the case of hydro or geothermal power plants/units, the addition of new power plants/units may significantly affect the electricity generated by the existing plants/units. For example, a new hydro turbine installed at an existing dam may affect the power generation by the existing turbines. Therefore, the approach below for overhaul, reconstruction or modernization projects shall be used for capacity addition in hydro power plants and geothermal power plants. $EG_{facility,y}$ corresponds to the net electricity generation supplied to a grid by the existing plants/units and the added plants/units together constituting “project plants/units”. A separate metering of electricity supplied to a grid by the added plants/units is not necessary under this option.

4. Overhaul, reconstruction or modernization in hydro, solar, wind, geothermal, wave and tidal plants

In the case of overhaul, reconstruction or modernization in hydro, solar, wind, geothermal, wave and tidal plants where power generation can vary significantly from year to year, due to natural variations in the availability of the renewable source (e.g. varying rainfall, wind speed or solar

radiation), the use of few historical years to establish the baseline electricity generation can involve a significant uncertainty.

The elimination of uncertainty is performed by adjusting the historical electricity generation by its standard deviation. This ensures that the baseline electricity generation is established in a conservative manner and that the calculated emission reductions are attributable to the project activity. Without this adjustment, the calculated emission reductions could mainly depend on the natural variability observed during the historical period rather than the effects of the project activity. The baseline energy generation $EG_{BL,y}$ corresponding to the net increase in electricity production associated with the project is thus calculated as follows:

$$EG_{BL,y} = \begin{cases} \max(\mathrm{EG}_{\mathrm{BL,facility,y}} - (\mathrm{EG}_{\mathrm{historical}} + \sigma_{historical}), 0), & \text{until } \mathrm{DATE}_{\mathrm{BaselineOverhaul}} \\ 0, & \text{after } \mathrm{DATE}_{\mathrm{BaselineOverhaul}} \end{cases} \quad \text{(A3.3)}$$

Where:

$EG_{historical}$	Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity and determined per the procedure prescribed under section 5. below (MWh)
$\sigma_{historical}$	Standard deviation of the annual average historical net electricity supplied to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh)
$DATE_{BaselineOverhaul}$	Point in time when the existing equipment would need to be replaced in the absence of the project activity (date). This parameter does not apply to reconstruction projects

5. Determination of $EG_{historical}$

Average of historical net electrical energy levels delivered by the existing facility, spanning all data from the most recent available year (or month, week or other time period) to the time at which the facility was constructed, retrofit, or modified in a manner that significantly affected output (i.e. by 5 % or more), shall be used.

To determine $EG_{historical}$, project developer may choose between two historical periods. The use of the longer time period may result in a lower standard deviation and the use of the shorter period may allow a better reflection of the (technical) circumstances observed during the more recent years.

a) The three last calendar years (in case of hydro power plants five years) prior to the implementation of the project activity; or

b) The time period from the calendar year following $DATE_{hist}$, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least three calendar years (in case of hydro power plants five years), where $DATE_{hist}$ is latest point in time between:

- the commissioning of the plant/unit;
- if applicable: the last capacity addition to the plant/unit; or
- if applicable: the last overhaul or reconstruction of the plant/unit.

In case of reconstruction where the power plant/unit did not operate for last three (in case of hydro power plants five years) calendar years before the rehabilitation starts, $EG_{historical}$ is equal to zero.

6. Determination of $DATE_{BaselineOverhaul}$

In order to estimate the point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity ($DATE_{BaselineOverhaul}$), project developer may take into account the typical average technical lifetime of the type equipment, which shall be determined and documented in PDD.

The point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity should be chosen in a conservative manner that is, if a range is identified, the earliest date should be chosen.

Appendix 4. Data and parameters monitored

General parameters to be monitored as a result of climate project implementation activities.

Table A4.1. Data and parameters monitored

№	Data / Parameter	Data unit	Description	Source of data	Measurement procedures	Monitoring frequency	QA/QC procedures	Any comment
1	$EF_{CO2,y}$	t CO_2/MWh	CO2 emission factor for the grid/minigrid/captive electricity in year y	Values provided by the fuel supplier in invoices is the preferred source.	As prescribed in section 3 and Appendixes 1 and 2	Monthly or in accordance with the electricity purchase schedule	-	See the guidelines set out in the Order of the Ministry of Natural Resources and Ecology of the Russian Federation dated 29.06.2017 № 330
2	-	t CO_2/MJ	CO_2 emission factor of fossil fuel type i	Values provided by the fuel supplier in invoices is the preferred source. In the absence of such data, it is necessary to use measurements by the project developer	Measurements should be undertaken in line with national or international fuel standards	Monthly or according to fuel purchase schedule	-	See the guidelines set out in the Order of the Ministry of Natural Resources of the Russian Federation dated 27.05.2022 No. 371
3	-	MJ per unit volume or mass unit	Net calorific value of fossil fuel type i	Values provided by the fuel supplier in invoices is the preferred source. In the absence of such data, it is necessary to use measurements by the project developer	Measurements should be undertaken in line with national or international fuel standards	Monthly or according to fuel purchase schedule	Verify if the values within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines	See the guidelines set out in the Order of the Ministry of Natural Resources of the Russian Federation dated 27.05.2022 No. 371
4	-	Mass or volume unit/y	Quantity of fossil fuel consumed in year y	Values provided by the fuel supplier in invoices is the preferred source. In the absence of such data, it is necessary to use measurements by the project developer	Measurements should be undertaken in line with national or international fuel standards	Monthly or according to fuel purchase schedule	Check consistency of the monitored records with the records from previous monitoring intervals. The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes	-
5	$EG_{BL,y}$	MWh/y	Quantity of net electricity displaced in year y	Electricity meter(s)	Measurements should be undertaken in line with national or international fuel standards It is recommended to monitored using bi-directional energy meter.	Continuous monitoring, hourly measurement and	-	-

№	Data / Parameter	Data unit	Description	Source of data	Measurement procedures	Monitoring frequency	QA/QC procedures	Any comment
					Use electricity meters installed at the grid interface for electricity export to grid and for supply to captive consumers use electricity meters installed at the entrance of the electricity consuming facility.	at least monthly recording		
6	$EG_{BL,facility,y}$	MWh	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	Electricity meter(s)	Measurements should be undertaken in line with national or international fuel standards It is recommended to monitored using bi-directional energy meter or calculated as difference between 1. the quantity of electricity supplied by the project plant/unit to the grid; and 2. the quantity of electricity the project plant/unit from the grid. In case it is calculated then the following parameters shall be measured: 1. the quantity of electricity supplied by the project plant/unit to the grid; and 2. the quantity of electricity delivered to the project plant/unit from the grid	Continuous monitoring, hourly measurement and at least monthly recording	-	-
7	$EG_{BL,add,y}$	MWh	Quantity of net electricity generation supplied to the grid in year y by the project plant/unit that has been added under the project activity	Electricity meter(s)	Measurements should be undertaken in line with national or international fuel standards If applicable, measurement results shall be cross checked with documents for sold/purchased electricity. This parameter should be either monitored using bi-directional energy meter or calculated as difference between (a) the quantity of electricity supplied by the project plant/unit to the grid; and (b) the quantity of electricity the project plant/unit from the grid. In case it is calculated then the following parameters shall be measured: (a) The quantity of electricity supplied by the project plant/unit to the grid; and (b) The quantity of electricity delivered to the project plant/unit from the grid	Continuous monitoring, hourly measurement and at least monthly recording		Applicable to wind, solar, wave, tidal power plants/units.
8	$\sigma_{historical}$	MWh	Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity	Calculated from data used to establish $EG_{historical}$	Calculated from data used to establish $EG_{historical}$ Parameter to be calculated as the standard deviation (for overhaul, reconstruction or modernization project activities)	-	-	-

Appendix 5. Risk management

Table A5.1. Risk management

Stage of climate project implementation	Description of risk	Probability of occurrence	Impact on the project	Impact period	Risk minimization methods	Implementation period
		1. low *2. medium* *3. high*	*1. low* *2. medium* *3. high*	*1. preparation period* *2. 1-2 years after the implementation* *3. the entire period of the climate project*	*Detailed description of mitigation measures for each risk*	*Description of the time frame for the implementation of these activities*
		Scale from 1 to 5 or others	*Scale from 1 to 5 or others*			

Appendix 6. Assessment of the validity of the original/current baseline at the renewal of the crediting period

This appendix describes a procedure to the validity of the original/current baseline at the renewal of the crediting period.

Assessment of the validity of the original/current baseline at the renewal of the crediting period consists of two steps.

A. Assess the validity of the current baseline for the next crediting period.

1. Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies.

If the current baseline is not in compliance with the relevant mandatory national and/or sectoral policies or if it cannot be shown that the policies are systematically not enforced and that non-compliance with those policies is widespread in the country or region, then the current baseline needs to be updated for the subsequent crediting period.

2. Assess the impact of circumstances.

If the new circumstances make a continued validity of the current baseline not plausible, then the current baseline needs to be updated for the subsequent crediting period.

3. Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

If the baseline scenario of the project activity is the continuation of use of the current equipment(s) without any investment and the projects proponents or third party(ies) will undertake an investment later, but before the end of a crediting period, then the current baseline needs to be updated for that crediting period or the crediting of emission reductions should be limited to the period before the baseline equipment would cease its operation.

4. Assessment of the validity of the data and parameters.

If any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, the current baseline **needs to be updated** for the subsequent crediting period.

If the application of p.1, 2, 3 and 4 confirmed that the current baseline as well as data and parameters are still valid for the subsequent crediting period, then this baseline, data and parameters **can be used for the renewed crediting period**. Otherwise, proceed to Step B.

B. Update the current baseline and the data and parameters.

This step is only applicable if any of the p. 1, 2, 3 and/or 4 showed that the current baseline needs to be updated.

a. Update the current baseline

Update the current baseline emissions for the subsequent crediting period, without reassessing the baseline scenario, based on the latest approved version of the methodology applicable to the project activity. The procedure should be applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period.

b. Update the data and parameters

If the application of p.4 showed that the data and/or parameter(s) that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, project developer should update all applicable data and parameters.