Climate project methodology № 0011

Improved forest management, including forest fire protection

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Table of contents

1. Terms and definitions

Climate project (greenhouse gas project) – a set of measures ensuring the reduction (prevention) of anthropogenic greenhouse gas (GHG) emissions or an increase in the absorption of greenhouse gases compared to the baseline.

Greenhouse gas project developer (GHG project developer) – individual or organization that has overall control and responsibility for a GHG project.

Greenhouse gas baseline (GHG baseline) - Quantified reference point(s) for GHG emissions and/or GHG removals that would occur in the absence of the GHG project, expressing the baseline scenario against which project emissions and GHG removals are compared.

Baseline scenario - Hypothetical development reference that best represents the conditions most likely to arise in the absence of a GHG project.

Project scenario - expected level of GHG emission reduction or GHG removal increase, different from the baseline scenario, that will be achieved as a result of the project activity.

Project activity - the specific set of measures and/or technologies applied to the project, that alter the conditions identified in the baseline scenario and which result in GHG emission reductions or removals.

Carbon unit - verified result of the implementation of the climate project activities, expressed in the mass of greenhouse gases equivalent to 1 ton of carbon dioxide

Carbon credit (offset credit) - transferrable instrument certified by government or independent certification bodies to represent an emission reduction of one metric ton of CO_2, or an equivalent amount of other greenhouse gases

Project territory - The geographic area in which the project activities are implemented.

Project boundary - The specification of GHG sources, sinks, and reservoirs associated with the project and baseline scenarios

Carbon pool - a reservoir of carbon that has the potential to accumulate (or lose) carbon over time (encompasses aboveground biomass, belowground biomass, litter, dead wood and soil)

Monitoring - Continuous or periodic evaluation of GHG emissions, GHG removals, or other GHG-related data

Improved forest management (IFM) - Forest management activities which result in increased carbon stocks within forests and/or reduce GHG emissions from forestry activities when compared to “business as usual” forestry practices.

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 of this methodology.

Invasive species – an organism introduced by man into places out of its natural range of distribution, where it becomes established and disperses, generating a negative impact on the local ecosystems and species. An invasive species is likely to cause economic harm or harm to human health.

2. Scope and applicability

Forest fire protection is one of the eligible activities under “Improved Forest Management” (IFM) category of forestry climate projects.

Protection of forests from fires - a set of measures aimed at preventing the occurrence of forest fires, limiting their spread, reducing fire danger, increasing the fire resistance of forests, timely detection and extinguishing of forest fires. Protection and protection of forests is carried out by state authorities, local governments within their powers, determined in accordance with articles 81 - 84 of the Forest Code of the Russian Federation, unless otherwise provided by the Forest Code of the Russian Federation, other federal laws. The protection of forests from fires is carried out in accordance with the Federal Law of December 21, 1994 № 69-FZ "On Fire Safety", the Labor Code of the Russian Federation, the Fire Safety Rules in Forests, approved by Decree of the Government of the Russian Federation of October 7, 2020 № 1614.

In order to ensure fire safety in forests, the following is carried out:

• fire-fighting facilities, including: construction, reconstruction and maintenance of fire-fighting roads, landing sites for airplanes, helicopters used for aerial work to protect forests, laying clearings, fire breaks;

• creation of systems, means of preventing and extinguishing forest fires, maintenance of these systems and means, formation of reserves of fuels and lubricants for a period of high fire danger;

• monitoring of fire danger in forests (including monitoring and control of fire danger in forests and forest fires, organization of a system for detecting and accounting for forest fires,

systems for monitoring their development using ground, air or space means, organizing forest patrols, etc.)

- development of plans to extinguish forest fires;
- extinguishing forest fires;
- other fire safety measures in forests.

The types and volumes of fire prevention measures are determined taking into account the degree of fire hazard of forests and the region fire-prevention arrangement.

This methodology applies to projects that implement measures to protect reserve forest from fires.

The project area is defined as the area over which the project proponent holds authorization to conduct activities on forest fire protection over the length of the project crediting period. The area in its entirety must meet the definition of forest (see country-specific or UNFCCC definition of forest). The boundary of the project area must be clearly delineated and documented with coordinates and maps or plans. The location of the project and its area should be indicated in the project description.

The project developer must demonstrate that the project area was not cleared of pre-existing forests with the goal of later claiming carbon credits. In addition, the project area must not have been cleared of natural ecosystems during the last 10 years before the start of the project.

Climate projects in the field of forestry are implemented by Project proponents in accordance with the Federal Law of July 2, 2021 No. 296-FZ "On Limiting Greenhouse Gas Emissions".

In case of changes in the GHG regulatory legal framework of the Russian Federation, this methodology is subject to revision in order to take into account the relevant changes.

As part of the justification for the implementation of the climate project, the project developer (PD) must / should has the right to provide an economic assessment of changes in any ecosystem services that are affected by the climate project activities. Such ecosystem services can be: changing biodiversity, increasing the purification of atmospheric air, improving the quality and quantity of surface and ground waters, and others.

3. Baseline methodology

When performing fire-fighting measures on the territory of reserved forests, which belong to unmanaged forest lands, this territory is included in the managed forest lands. According to the IPCC Guidelines, in this case the baseline will be zero.

4. Project crediting period

The duration of the crediting period shall be a maximum of 15 years with option of renewal twice (the total 45 years). For projects including timber harvesting, the duration of the crediting period must include at least one complete harvesting/cutting cycle.

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.

6. Monitoring plan requirements

The purpose of monitoring is to generate field measurements that can be used to estimate the reduction in greenhouse gas emissions or the increase in carbon stock as a result of project activities.

Throughout the project crediting period, monitoring must be conducted at least once every five years as well as after the project is completed.

PD shall select or establish criteria for identifying sites for regular monitoring or assessment based on suitable and reliable data. PD of the project shall develop and implement a monitoring plan that includes procedures for measuring, namely, obtaining, recording, summarizing and analyzing data and information necessary to quantify and report changes in carbon stocks in the carbon pools related to the project and the baseline scenario.

During the monitoring process, it is necessary to periodically assess the carbon stocks in the pools by the calculation method. Estimation of the real volume of CO_2 removals can be performed using the method of carbon stock difference in certain periods of time or on the basis of the balance approach (the difference between carbon accumulation and its losses due to disturbances). As part of the monitoring, the review also includes an assessment of the risk of non-permanence and leakage.

The monitoring plan should include the following:

- The purpose of the monitoring;
- The list of parameters to be measured and monitored;
- The types of data and information to be reported, including the units of measurement;
- Sources of data;
- Monitoring methodologies, including soil sampling procedure according to available national methodologies and their representativeness, evaluation, modeling, measurement, calculation approaches and uncertainty. The frequency of monitoring, taking into account the needs of the intended users;
- Roles and responsibilities of participants related to monitoring, including procedures for authorizing, approving, and documenting changes in recorded data;
- Control procedures, including internal validation of input data, conversions, and output data, and procedures for corrective actions;
- GHG information management systems, including data placement and preservation, and data management, including procedures for transferring data between different types of systems or documentation.

Where monitoring tools and equipment are used, the PD shall ensure that they are properly applied, maintained and the requirements of this methodology and are comparable with the requirements of this methodology, as well as with generally accepted methodologies and approaches to GHG inventory (see para 7).

The PD shall apply monitoring criteria and procedures in accordance with the monitoring plan. All data and information related to project monitoring shall be recorded and documented.

7. Project scenario

The project developer shall provide a detailed description of how GHG emissions and GHG emission reductions to be achieved as a result of the proposed project activity (project scenario) have been calculated and provide these calculations for each year of the crediting period. The proponents of the project should also describe all the steps that were taken to carry out these calculations (i.e. data collection, selection or development of methodology, coefficients, etc.) and provide all the results obtained from the calculations.

The project scenario used for the project area should be estimated in accordance with generally accepted methods, such as:

- the IPCC 2006 Guidelines for National Greenhouse Gas Inventories (IPCC, 2006)
- the IPCC 2003 Good Practice Guidelines for Land Use, Land-use Change and Forestry (IPCC,2003)
- Methodological recommendations for conducting a voluntary inventory of greenhouse gas emissions in the constituent entities of the Russian Federation (Decree of the Ministry of Natural Resources №15-r, 2015)
- Guidelines for Quantifying Greenhouse Gas Sequestrations (Decree of the Ministry of Natural Resources №20-r from 30.06.2017
- Order of the Ministry of Natural Resources № 371 from 27.05.2022 "On Approval of Methods for Quantitative Determination of Greenhouse Gas Emissions and Greenhouse Gas Removals".

If the applied methodologies, applied standardized project conditions or other applied methodological normative documents include different scenarios or cases, or provide different options and/or default values to choose from, project participants should justify their choice.

Quantification is provided for the following gases - CO_2, N_2O and CH_4.

The main reservoirs (pools), changes in which are accompanied by emissions or absorption of greenhouse gases include:

• biomass (above- and belowground pools)

• dead organic matter (dead wood and litter)

• soil

If the applied methodologies, applied standardized project conditions or other applied methodological normative documents include different baseline conditions, or provide different options and/or default values to choose from, project developer should justify their choice.

Net GHG emission reductions or removal enhancements resulting from the project activity should be quantified. Metric tons should be used as the unit of measurement, and volumes of each greenhouse gas should be converted to tons of CO_2 equivalent (CO_2-eq). All GHG emission reductions must be converted into CO_2-eq. using 100-year global warming potential (GWP) values from the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2013).

To assess the achieved reduction in emissions and/or increase in removals as a result of the project activity, which include protection of unmanaged forests from fires, it is necessary to evaluate:

• Net absorption of greenhouse gases by forests in the project area;

• Areas of fires of different types and corresponding greenhouse gas emissions from fires 5-10 years prior to project implementation;

• Greenhouse gas emissions from fossil fuel combustion from air, off-road and road transport required for project implementation.

The total annual carbon balance in year t ($\Delta C_{PRJ,\ t}$, t C yr^{-1}) for the project scenario is calculated as:

$$\Delta C_{PRJ,\ t} = \Delta C_{PRJ,\ LB,\ t} + \Delta C_{PRJ,\ DOM,\ t} + \Delta C_{PRJ,\ S,\ t} \quad (1)$$

where:

$\Delta C_{PRJ,\ LB,\ t}$ = annual change in carbon stocks in living tree biomass (above- and belowground) as a result of project activity, t C yr^{-1};

$\Delta C_{PRJ,\ DOM,\ t}$ = annual change in carbon stocks in dead organic matter as a result of project activity, t C yr^{-1};

$\Delta C_{PRJ,\ S,\ t}$ is the annual change in carbon stocks in soil, as a result of project activity, t C yr^{-1}.

If the project area has been stratified, carbon pools are calculated for each polygon i, and then summed during a given year t.

The operation of any equipment in the project area is accompanied by greenhouse gas emissions and requires a quantitative assessment. Estimation of greenhouse gas emissions from equipment used in firefighting activities is carried out applying Tier 1 of the IPCC, 2006 for calculations based on data on consumed fuel. Greenhouse gas emissions from operating machinery are differentiated depending on its type and the type of fossil fuel used.

Calculation of CO_2 emissions from fossil fuel combustion in the project area is carried out according to:

$$C_{FUEL} = \sum_{k=0}^{n} Vk * EFk \quad (2)$$

where:

C_{FUEL} – CO_2 emissions from fuel combustion, tons;
Vk – volume of burned fuel *k*;
EFk – CO_2 emission factor from fuel combustion *k*.

The calculation should include various types of fuels produced using fossil energy resources, including gasoline, kerosene, diesel fuel, etc.

The number of carbon credits that are expected to be issued as a result of the project activity is calculated as the difference in carbon stocks in the selected carbon pools between the project scenario and the baseline scenario, taking into account any project emissions of N_2O, CH_4 and CO_2 from fossil fuels, as well as emissions in the result of leakage.

When developing the baseline and the project scenario, it is necessary to take into account the types of use and purpose of the territory where the climate project is being implemented, both at the present time and in the future. This information can be obtained from territorial planning documents, which determine the purpose of territories based on a combination of social, economic, environmental and other factors in order to ensure sustainable development of territories, development engineering, transport and social infrastructures, ensure the interests of citizens and their associations, Russian Federation, constituent entities of the Russian Federation, municipalities (Urban Planning Code of the Russian Federation dated December 29, 2004 N 190-FZ (as amended on December 29, 2022), Chapter 3).

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. This can also be done using "low, medium, high" or any other understandable numerical scale.

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

6. Development of measures to minimize or avoid each type of risks

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

Risk management

Stage of climate project implementation	**Description of risks**	**Probability of occurrence**	**Impact on the project**	**Impact period**	**Risk minimization methods**	**Implementation period**
		1. low 2. medium 3. high	4. low 5. medium 1. 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			

8. Leakage assessment

According to the Order of the Ministry of Economic Development of Russia dated May 11, 2022 N 248 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 with the methodology below.

Leakage is the phenomenon through which efforts to reduce emissions in one place simply shift emissions to another location or sector where they remain uncontrolled or uncounted. Leakage is an inherent risk in carbon projects and programs. The level of leakage risk depends on what causes the baseline emissions and on the design of the carbon projects or programs, i.e. on how well they mitigate risks. The leakage management approach should include identifying, elimination, monitoring and quantifying carbon leakage throughout the whole cycle of the project, and subtracting that leakage from the estimated number of GHG emission reductions or removals that can be issued as carbon credits. There are three types of leakage:

1) Market leakage occurs when projects significantly reduce the production of a commodity causing a change in the supply and market demand equilibrium that results in a shift of production elsewhere to make up for the lost supply.

2) Activity Shifting leakage is related to activities that directly cause carbon-emitting activities to be shifted to another location outside of the project boundaries, cancelling out some or all of the project's carbon benefits.

3) Ecological leakage occurs when the project activity causes changes in GHG emissions or fluxes of GHG emissions from ecosystems that are hydrologically connected to the project area.

GHG emissions from leakage may be determined either directly from monitoring, or indirectly when leakage is difficult to monitor directly but where scientific knowledge provides credible estimates of likely impacts. Leakage occurring outside the host country (international leakage) does not need to be quantified. Projects should not consider positive leakage (i.e., where GHG emissions decrease or removals increase outside the project area due to project activities).

9. Non-permanence risk analysis

The risk of non-permanence for projects falling under the “Forest fire protection” category is the loss of all carbon benefits generated by the project as a result of termination of firefighting activities. Therefore, the project developer must provide guarantees that at the end of the project period, the results will be maintained for 100 years. If such guarantees cannot be provided, then the amount of emission reductions/enhanced removals achieved by the project should be discounted in proportion to the number of years not covered by guarantees.

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

The activities of any forest climate project must not have a negative impact on the environment or local communities. The project developer must identify and mitigate any negative environmental and socio-economic impacts of the project activities, as well as interact with local stakeholders during the development and implementation of the project. Actions that deplete natural ecosystems and lead to the deterioration of ecosystem functions of forests do not fit the definition of a forest climate project and are not eligible for carbon crediting. The description of the project must contain evidence that the project area has not been drained and natural ecosystems have not been transformed. Project activities should not include impact on the hydrology or

otherwise affect the hydrological regime of adjacent areas. The project activities should not include the breeding of monocultures and invasive species.

In order to increase the social factor and the significance of the climate project for the local communities, it is recommended to allocate 10-15% of the benefits received from carbon credits to the budgets of the municipalities where the climate project is located.

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.

In order to update the baseline the approach to its definition, the main parameters and assumptions used in the analysis are revised and updated. The baseline shall be representative of the conditions for the beginning of a new crediting period and be valid for that period.

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.

12. Normative references

1. 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)
2. 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);
3. 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);

4. 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);
5. 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);
6. 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);
7. 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);
8. 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);
9. 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.
10. 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 4 Agriculture, Forestry and Other Land Use (https://www.ipcc-nggip.iges.or.jp/public/2019rf/vol4.html)
11. IPCC. 2013. Fifth Assessment Report. https://www.ipcc.ch/report/ar5/wg1/
12. Order of the Ministry of Natural Resources of Russia dated December 1, 2020 № 993 (as amended on October 17, 2022) "On approval of the Rules for timber harvesting and features of timber harvesting in forestries specified in Article 23 of the Forest Code of the Russian Federation" (Registered with the Ministry of Justice of Russia on December 18, 2020 N 61553)

13. Forest Code of the Russian Federation of December 4, 2006 N 200-FZ (as amended on December 29, 2022)
14. Decree of the Government of the Russian Federation of October 7, 2020 N 1614 "On the approval of the Fire Safety Rules in Forests")
15. Decree of the Government of the Russian Federation of 09.12.2020 N 2047 "On approval of the Rules for sanitary safety in forests"
16. Order of the Ministry of Natural Resources of Russia dated December 29, 2021 N 1024 "On approval of the Rules for reforestation, the form, composition, procedure for approving a reforestation project, the grounds for refusing to approve it, as well as requirements for the format in the electronic form of a reforestation project" (Registered with the Ministry of Justice of Russia on February 11, 2022 N 67240)
17. Order of the Ministry of Natural Resources of Russia dated July 30, 2020 N 534 "On approval of the Rules for the care of forests" (Registered with the Ministry of Justice of Russia on December 18, 2020 N 61555).
18. Urban Planning Code of the Russian Federation dated December 29, 2004 N 190-FZ (as amended on December 29, 2022)