

Supplementary Material

Appendix 1 - National Guidelines description

The methodologies and principles to be observed according to the NGLs will be outlined below.

The types of projects that can generate credits are:

- Sustainable forest management projects on forest areas, afforestation and reforestation of forest areas temporarily without forest cover;
- Non-reversible (permanent) afforestation and reforestation projects on both agricultural and non-agricultural land;
- Projects for the generation of harvested wood products (HWP), i.e. wood products for structural use, (solid or semi-finished solid wood products such as beams and boards, glued laminated timber or structural X-Lam etc.) with a service life of at least 35 years. The basic wood material must come exclusively from forests within the national territory.

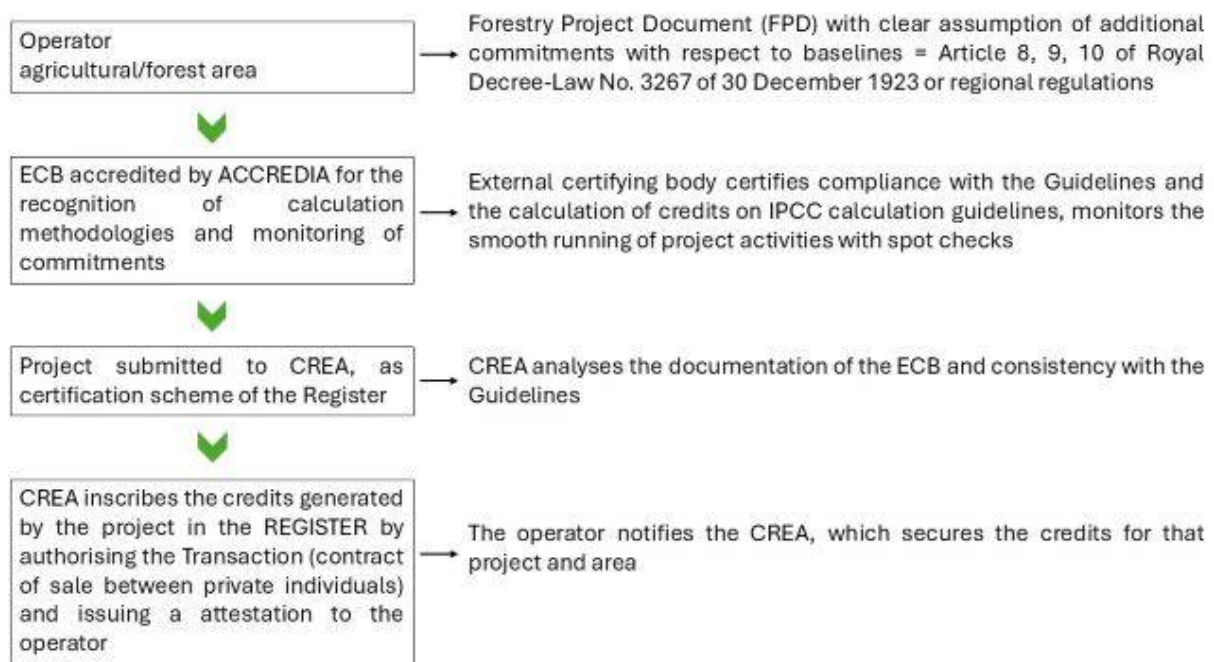
The forestry projects must have a certification of the credits generated, issued by an External Certifying Body (ECB), accredited and licensed in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council (Accredia).

ECBs are entities external to the project proponent that, in the public interest, are responsible for assessing the consistency of the forestry project in relation to the Guidelines. ECBs are also responsible for monitoring the credits generated by the agroforestry project.

The process of recognising carbon credits generated by forestry projects begins with the preparation of the Forestry Project Document (FPD) by the operator - a farmer as defined in Article 3(1) of Regulation (EU) 2021/2115 any other manager of an activity in the terrestrial or coastal environment, a forest owner or manager under national law, or a competent public body - and a request for certification of the credits to the ECB. In the FPD, the project and operator's information must be included, as well as a description of the general principles based on the QU.A.L.ITY criteria. A fundamental requirement included in the FPD is the forest management plan. The FPD and certification are sent to Council for Agricultural Research and Economics (CREA), which verifies the validity of the documents and enters the credits into the register. At

this point, the operator declares its willingness to sell the credits at a pre-established price and may initiate a sales contract with the buyer. Once the transaction is completed, the operator submits to CREA a copy of the credit sale contract and the monetary or banking transaction, detailing the monetary value of the credits sold. Once CREA has acknowledged the sale and purchase, it cancels an equivalent quantity of credits in the Forestry Section of the Registry, equal to the carbon credits indicated in the sale and purchase agreement (Fig. S1).

Fig. S1 - Process of registration, certification and sale of credits in the National Public Register.



Carbon credits must be quantified using credible, transparent and shared methodologies that align both at the IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2006, Vol. 4, IPCC, 2006), and the QU.A.L.ITY (QUantification, Additionality and baseline, Long-term storage and sustainability) criteria provided for by the Regulation EU 2024/3012.

The baseline represents the carbon sink that would have occurred in the absence of project activity, net of any negative externalities. It serves as a baseline projection against which the carbon storage benefits of the project activities can be compared over the project's lifetime.

The European regulatory framework mandates the use of a standardised baseline for carbon accounting, defined as a level of carbon storage that is highly representative of the typical performance of comparable practices and processes under similar social, economic, environmental, technological, and regulatory conditions. This baseline must also consider the geographical context, including local pedoclimatic and regulatory factors.

In the Italian context, however, the absence of high-quality, harmonised data suitable for calculating such a standardised baseline poses a significant challenge. Moreover, forest management regulations vary considerably across regions, further complicating the establishment of a uniform reference level.

Consequently, the NGLs will provide for the adoption of an activity-specific baseline approach. Within this framework, the level of carbon sequestration will be calculated using project-specific data derived from the forest management plan, while also taking into account the relevant regional regulatory framework.

For sustainable forest management projects, as defined by Article 3, paragraph 2 letter b) Legislative Decree 34/2018, the baseline must be calculated by considering the minimum management required by the regulations in force (such as Broad and Forest Police Prescriptions or Forest Regulations in accordance with the provisions of Legislative Decree 34/2018).

For afforestation and reforestation projects, the baseline can be assumed to be “no change in carbon stocks over time”, while for carbon storage in long-lived wood products or materials, it is assumed to be zero.

The baseline calculation method to be used in Italy will have greater accuracy and a lower margin of error, thus generating higher quality carbon credits.