

The experience of Peru in Implementing the Social Cost of Carbon in Public Investment Evaluation

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PERU

Executive Summary The experience of Peru in Implementing the Social Cost of Carbon in Public Investment Evaluation.

Peru has developed a methodology for identifying, quantifying and valuing Greenhouse emissions in various sectors, including electricity generation, waste treatment, and solid waste. Additionally, the country has issued a Technical Note for the use of the Social Evaluation System SES in Investment Projects. The SES applies to social evaluation methodologies such as Cost-Benefit, Cost-Effectiveness and Cost-Utility.

Global context of the country.

The Ministry of Economy and Finance¹, through the General Directorate of Multi-year Investment Programming, is the regulatory body for the National Multi-year Investment Programming and Management System (also known as Invierte.pe). It manages the Investment Bank, sets the procedures and guidelines for multi-year investment programming and the investment cycle, supervises their quality, develops the State Multi-year Investment Program (PMIE), approves the general methodologies considering the level of complexity of the projects, provides training and technical assistance to the entities subject to the National Multi-Year Investment Programming and Management System².

Accredited Formulating Units from the sector, regional or local government are responsible for applying the contents, methodologies, and formulation parameters, developing the technical sheets and pre-investment studies required. Investment Execution Units are the bodies responsible for executing investments and are subject to the investment design approved in the Investment Bank³.

This system was born in February 2017 with Legislative Decree No. 1252⁴, in September 2018, Legislative Decree No. 1432 was published⁵, which amends Legislative Decree No. 1252 and in 2020 the General Directive Of The National Multi-Year Investment Programming And Management System (No. 001-2019-EF/63.01) was published⁶.

The General Directorate of Investment Programming has developed general methodologies for formulation and evaluation, as well as a methodology for ex-post evaluation of investment projects⁷. These methodologies emphasize the economic evaluation of cost-benefit, the identification of disaster risks under climate change scenarios, the analysis of the economic sustainability of projects during the projected time of their operation, and guide the

¹ <https://www.gob.pe/mef>

² [Sistema Nacional de Programación Multianual y Gestión de Inversiones - Invierte.pe de Perú | Regional Observatory for Development Planning \(cepal.org\)](#)

³ [Sistema Nacional de Programación Multianual y Gestión de Inversiones - Invierte.pe de Perú | Regional Observatory for Development Planning \(cepal.org\)](#)

⁴ [Legislative Decree No 1252](#)

⁵ [Legislative Decree No 1432](#)

⁶ [General Directive of the National System of Multiannual Programming and Investment Management](#)

⁷ [General Methodologies for Investment Projects and IOARR \(mef.gob.pe\)](#)

determination of the type of environmental impact study that may be necessary according to the type of project⁸.

The life cycle of investment projects in the National Multi-Year Investment Programming and Management System arises as project ideas that can contribute to closing gaps in infrastructure, access to public services and are also related to national and sectoral planning. After being conceived as ideas, Formulating Units (UF) develop the technical sheets of the projects according to the applicable general and/or sectoral methodologies. Formulating Units are responsible for both the formulation and evaluation of investment projects. The type of pre-investment studies depends on the investment amount of the projects: a simplified technical sheet is prepared for investment projects whose investment amounts are equal to or less than 750 Tax Units (UIT⁹); a standard technical sheet is prepared for projects whose investment amounts, are equal to or less than 15,000 UIT, Technical sheet is prepared for projects less than 407,000 UIT, and a pre-investment study at the Profile level is prepared for highly complex investment projects greater than 407,000 UIT¹⁰.

Regarding climate change, in 2018, the Climate Change Framework Law on was published.¹¹, Its purpose is to establish the principles, approaches and general provisions to coordinate, articulate, design, execute, report, monitor, evaluate and disseminate public policies for the comprehensive participatory and transparent management of adaptation and mitigation measures to climate change, in order to reduce the country's vulnerability to climate change, take advantage low carbon growth opportunities, and meet the international commitments assumed by the State before the United Nations Framework Convention on Climate Change, with an intergenerational approach.

In 2021, the Supreme Decree (N° 023-2021-MINAM) was published, approving the National Environmental Policy for 2030,¹² whose priority objective 8 is to reduce the country's greenhouse gas (GHG) emissions. This objective responds to the direct cause "Increase in non-eco-efficient or sustainable goods and services production processes". Through this objective, it seeks to promote technologies and actions that contribute to reducing the emission of Greenhouse Gases (GHG) into the atmosphere, to comply with Peru's international commitments in this area.

In 2016, the study "Estimation of the Social Cost of Carbon (SCC) for Social Project Evaluation in Peru" was published. The established SCC was 7.17 USD/tCO₂e and the impacts of quantified GHGs are calculated in the situation with and without project to obtain the net effects, established in Annex 11 "Social Evaluation Parameters"¹³.

⁸ [Sistema Nacional de Programación Multianual y Gestión de Inversiones - Invierte.pe de Perú | Regional Observatory for Development Planning \(cepal.org\)](#)

⁹ The Peruvian Ministry of Economy and Finance determined that by 2023 the value of one UIT will be 4,950 Soles (the equivalent of USD 1,300).

¹⁰ Idem

¹¹ [Framework Law on Climate Change](#)

¹² [National Environmental Policy 2030](#)

¹³ [APPENDIX N° 11 \(mef.gob.pe\)](#)

Description of the experience.

The General Guide for the Identification, Formulation and Evaluation of Investment Projects (2022)¹⁴ refers to the valuation of externalities using the Social Cost of Carbon, through the allocation of value (monetization) to variations in Greenhouse Gas (GHG) emissions - in their equivalent carbon dioxide-generated when certain types of investment projects are executed.

According to paragraph 24.8 of article 24 of the General Directive of the Multiannual National Programming System and Investment Management, for the formulation and evaluation of investment projects and programs, the Formulation Unit prepares the technical sheet or pre-investment study, considering the sectoral technical standards and parameters, the social evaluation parameters of Annex No. 11: Social Evaluation Parameters, as well as the multiannual investment programming of the Sector, Regional Government or Local Government, in order to evaluate the probability and period of execution of the investment project. Likewise, the aforementioned Annex No. 11 states that the Social Cost of Carbon allows incorporating the social benefits or costs of reducing or increasing greenhouse gas (GHG) emissions¹⁵ within the evaluations.

Based on the above, through Directorial Resolution No. 006-2021-EF/63.01 the "Technical Note for the use of the Social Cost of Carbon in the Social Evaluation of Investment Projects" is approved¹⁶. This establishes the general procedure for calculating the positive and negative externalities of the Social Cost of Carbon in four (4) steps:

- The first step is carried out in the Investment Project (IP) Formulation and Evaluation phase:
 - Identify if the production of the good or service is related to GHG emissions.
 - Quantify the supply and/or demand of the service to be intervened with the IP.
- The Second step: Quantify GHG emissions without IP.
- The Step 3: Quantify GHG emissions with IP.
- The Fourth step: Value the increases(costs) or reductions (benefits) of GHG.

The technical note highlights the type of projects that would use this technical note, as follows:

- Electricity generation
- Railway transport
- Mass urban public transport
- Water supply
- Gas pipelines
- Drinking water supply
- Wastewater treatment
- Solid waste treatment
- Degraded forest ecosystems
- Support for productive development when there is a change in the crop certification.

¹⁴ [IFS Guide IFS version 2014 \(mef.gob.pe\)](#)

¹⁵ [Technical Note for the use of PSC in the ESP](#)

¹⁶ [2 Technical note on use of the social price of carbon 2021.pdf \(mef.gob.pe\)](#)

- Recovery of degraded ecosystems
- All IPs that have GHG emissions as externalities

Since this parameter values the positive and negative externalities of GHG emissions, it is applied for social evaluation methodologies: Cost-Benefit, Cost-Effectiveness, and Cost-Effectiveness.

For the project typologies mentioned, including electricity generation, wastewater treatment and landfills with biogas capture and burning systems, identify the main sources of GHG emissions or capture and presents detailed formulas for the calculation of emissions (quantification), both for the situations “without” and “with” project. Throughout the technical note, practical examples are developed to facilitate understanding of the concepts. Finally, using the PSC of 7.17 USD/tCO₂e (using the current exchange rate), calculate the valuation_of_benefits (or costs) derived from the valuation of GHG emissions based on the difference in emissions between the “Without” and “With” Investment Project Scenario.

In addition to the technical note, the country developed an application for the use of the social price of carbon¹⁷ which consists of an Excel format that facilitates evaluators and formulators to calculate the quantification and valuation of externalities caused by greenhouse gas emissions in the sectors of energy generation, wastewater treatment and solid waste.

Age of implementation.

In 2011 and 2012, hydroelectric projects were financed, and the amount of CO₂ emissions avoided compared to other technologies was evaluated, accessing carbon credits for investment through Clean Development Mechanisms.

With the publication in 2016 of the "Estimation of the Social Price of Carbon (PSC) for the Social Evaluation of Projects in Peru (7.17 USD/tCO₂e):

Systematic applicability.

Although, at the moment the use of the technical note is mainly given in the projects formulated by the Ministry of Environment (MINAM) and there is no obligation to apply the technical note for the use of the social price of carbon in the social evaluation of public investment projects. It is a work in progress, and its development is planned for 2023. The vision is to expand it to other sectors.

Main results/findings/recommendations.

It is important for the country to advance in updating the regulatory and technical framework with changes in the sectoral methodologies, so that the standard sheets establish the generalized inclusion of the valuation of externalities (GHG impacts) within the socioeconomic evaluation of public investment projects.

¹⁷ [Application for the use of the Social Price of Carbon](#)

Although the "Technical note for the use of the social price of carbon in the social evaluation of investment projects" addresses sectoral cases such as electricity generation, wastewater treatment, and solid waste. In the next 3 to 4 years, the country plans to develop detailed instruments for the identification and quantification of the impact of GHG emissions in other sectors to generalize their application.

With the support of ECLAC and the IDB, Peru has been working since 2022 on updating the PSC based on a curve of emissions mitigation that reflects the marginal technology that allows for emissions reduction in the country. It is estimated that this could be concluded during 2023 to begin implementation in 2024.