



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

**Report of the
mid-term review of the UNIDO project
Development of sustainable industrial zones in Peru**

UNIDO ERP ID: **150061**
GEF ID: **9206**

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Glossary of mid-term review related terms

Term	Definition
Results-Based Management (RBM)	A management strategy focusing on performance and achievement of outputs, outcomes and impacts.
Monitoring	A continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds.
Review	An assessment of the performance of an intervention, periodically or on an ad hoc basis. Note: Frequently “evaluation” is used for a more comprehensive and/or more in-depth assessment than “review”. Reviews tend to emphasize operational aspects. Sometimes the terms “review” and “evaluation” are used as synonyms.
External evaluation/review	The evaluation/review of a development intervention conducted by entities and/or individuals outside the donor and implementing organizations.
Formative evaluation/review	Evaluation/review intended to improve performance, most often conducted during the implementation phase of projects or programs.
Programme	A group of complementary projects designed and managed in a coordinated and coherent way, simultaneously or sequentially, to obtain broader benefits and long-term results (impact) not directly attainable from managing the projects individually. A programme is further typically characterized as a systematic and complex intervention to address a development problem or need to attain specific sectoral, national, regional or global development objectives.
Project	A development intervention, which is designed to achieve specific objectives (outputs/outcomes) contributing to a higher objective (impact) within a given budget and a specific period of time, i.e., it has a beginning and an end.
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries’ requirements, country needs, global priorities, and partners’ and donors’ policies. Note: Retrospectively, the question of relevance often becomes a question as to whether the objectives of an intervention or its design are still appropriate given changed circumstances.
Effectiveness	The extent to which the development intervention’s objectives were achieved, or are expected to be achieved, taking into account their relative importance.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Sustainability	The continuation of benefits from a development intervention after major development assistance has been completed. The probability of continued

	long-term benefits. The resilience to risk of the net benefit flows over time.
Institutional development impact	The extent to which an intervention improves or weakens the ability of a country or region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources. For example through: (a) better definition, stability, transparency, enforceability and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Such impacts can include intended and unintended effects of an action.
Logical framework	Management tool used to improve the design of interventions, most often at the project level. It involves identifying strategic elements (inputs, outputs, outcomes, impact) and their causal relationships, indicators and means of verification, and the assumptions or risks that may influence success and failure. It thus facilitates planning, execution, monitoring and evaluation of a development intervention.
Results	The output, outcome or impact (intended or unintended, positive and/or negative) of a development intervention.
Impacts	Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.
Outcome	The likely or achieved short-term and medium-term effects of an intervention's outputs.
Outputs	The products, capital goods and services, which result from a development intervention within UNIDO's sphere of control; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
Indicator	Quantitative or qualitative factor or variable that provides simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor. Means by which a change will be measured. Example: Total wastewater in t/yr.
Target	Definite ends to be achieved. Specifies a particular value that an indicator should reach by a specific date in the future. Example: Reduce by 50% the amount of wastewater in t/yr, between 2015 and 2020.
Milestones	Interim targets; points in the lifetime of a project by which certain progress should have been made. They provide an early warning system and are the basis for monitoring the trajectory of change during the lifetime of the programme or project.
Baseline	The situation prior to a development intervention against which progress can be assessed or comparisons made.

Assumptions	<p>Hypotheses about factors or risks, which could affect the progress or success of a development intervention.</p> <p>Necessary conditions for the achievement of results at different levels. These are conditions that must exist if the programme or project is to succeed but which are outside the direct control of the programme or project management. This is called the external logic of the programme or project because these conditions lie outside the programme or project's accountability and can be related to laws, political commitments, political situation, financing, etc.</p>
Risk analysis	<p>An analysis or an assessment of factors (called assumptions in the logical framework) that affect or are likely to affect the successful achievement of an intervention's objectives. A detailed examination of the potential unwanted and negative consequences to human life, health, property, or the environment posed by development interventions; a systematic process to provide information regarding such undesirable consequences; the process of quantification of the probabilities and expected impacts for identified risks.</p>
Environmental and Social Safeguards	<p>The UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP) identifies a total of 12 operational safeguards pertaining to environmental social risks. Every UNIDO project/programme needs to undergo an E&S screening to determine its level of risk and the appropriate mitigating action (if any) to be elaborated.</p>
Theory of change	<p>Theory of change, or programme theory, is similar to a logic model, but includes key assumptions behind the causal relationships and sometimes the major factors (internal and external to the intervention) likely to influence the outcomes.</p>
Conclusions	<p>Conclusions point out the factors of success and failure of the evaluated intervention, with special attention paid to the intended and unintended results and impacts, and more generally to any other strength or weakness. A conclusion draws on data collection and analyses undertaken, through a transparent chain of arguments.</p>
Lessons learnt	<p>Generalizations based on evaluation experience with projects, programmes, or policies that abstract from the specific circumstances to broader situations. Frequently, lessons highlight strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact.</p>
Recommendations	<p>Proposals aimed at enhancing the effectiveness, quality, or efficiency of a development intervention; at redesigning the objectives; and/or at the reallocation of resources. Recommendations should be linked to conclusions.</p>
Gender mainstreaming	<p>The process of assessing and supporting overcoming different implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men participate and benefit equally</p>

	and inequality is not perpetuated. The ultimate goal is to achieve gender equality.
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For more related terms and definitions see also:

- [UNIDO Quality Assurance Framework \(QAF\), DGB/2019/11](#)
- [IRPF Guide, AI/2020/02](#)
- [OECD-DAC Glossary of Key Terms in Evaluation and Results Based Management \(2010\)](#)
- [UNDG Results-based management handbook](#)
- UNIDO e-learning course on: [Results-based Management and the Logical Framework Approach](#)
- UNIDO [2019 Policy on Gender Equality and the Empowerment of Women and Strategy for Gender Equality and the Empowerment of Women, 2020-2023](#)

The above resources are also accessible for download on the [intranet page of the Quality Monitoring Division](#).

List of Acronyms

CITE: Center for Productive Innovation and Technological Transfer of PRODUCE
COFIDE: Corporation for Financial Development
ECLAC: Economic Commission for Latin America
FONDECYT: National Fund for Scientific, Technological and Technological Innovation Development
GEF: Global Environment Facility
INNOVATE-Peru: PRODUCE program that co-finances business innovation and productive development projects.
MINAM: Ministry of the Environment of Peru
MYPIMES: (SME) micro , small and medium enterprises
NAMA: Nationally Appropriate Mitigation Actions
NDC: Nationally Determined Contributions
OEFA: Environmental Control and Evaluation Body
PDC: Callao Development Plan 2011-2021
PMU: Project Management Unit
PROCOMPITE: Competitive Fund to co-finance productive proposals of PRODUCE
ProDoc : Project Document
PRODUCE: Ministry of Production of Peru
U-POPS: Unintentional Persistent Organic Pollutants (POP)
RECP: Resource Efficient and Cleaner Production
UNIDO: United Nations Industrial Development Organization
ZIS: Sustainable Industrial Zones Project

Project Factsheet

Title of the project	Development of sustainable industrial zones in Peru
ID, UNIDO ERP, and / or Project No.	150061
GEF project ID	9206
Region	Latin America
Country / -eses	Peru
Gender marker established when entering portfolio	n / a
GEF Focal Area and Operational Program	CCM and CW
GEF Implementing Agency (i.e.)	UNIDO
GEF executing partner (s)	N / A
Project size (FSP, MSP, EA)	Full-size project (FSP)
Endorsement of the project CEO / Approval date	March 09, 2018
Project implementation start date (first PAD issue date)	May 30, 2018
Planned implementation completion date (indicated in CEO approval / approval document)	May 30, 2022
Revised planned implementation completion date	May 30, 2023
Completion date of actual implementation	-
GEF project grant (excluding PPG, in USD)	4,114,000
GEF PPG (in USD)	150,000
UNIDO co-financing (in USD)	125,000
Total co-financing on GEF CEO approval (in USD)	390,830
Co-financing materialized expected at the end of the project (in USD)	44,457,804

Cofinancing materialized at the end of the mid-term review (in USD)	-
Total project cost (excluding PPG and agency support cost, in USD; i.e. GEF project grant + total co-financing on CEO approval)	48,721,804
Mid-term review date	June 2021
Expected final evaluation date	May 2023
Basic indicator objective	Reduction of PGE and GHG

(Source: Project document, ERP)

UNIDO staff responsible for the program or project

<i>Position</i>	<i>Current</i>	<i>At approval</i>
Program / project Manager (s):	Christian Susan	Petra Schwager
National Program / Project Coordinator / s:	Marianella Hernandez	
Primary author of the progress reports:	Marianella Hernandez	
Others involved in the program / project management in the field:	Ana Terrazos Yazmin Cruzatti Victor Arroyo	
Others involved in the program / project management in the HQ:	César Barahona-Zamora, RECP Specialist Advisor	César Barahona-Zamora, RECP Specialist Advisor

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I. Executive Summary

This mid-term review of the GEF 9206 ZIS Peru Project was carried out during May-June 2021 and had the purpose of identifying the project progress and early risks for its sustainability. The effectiveness, efficiency and progress towards objectives and results, including gender mainstreaming, were also evaluated. The review aimed to provide the project management team with feedback on project performance to date and improve transparency and accountability, for the subsequent development of the project, as well as for its replicability and replication of the results. The relevance of the results, initial and current activities of the project were analysed, and improvements proposed in ongoing and future activities.

During the review, a documentary analysis was carried out, as well as interviews with more than twenty stakeholders, including the Project Directorate, UNIDO, national and local government agencies, industrial associations, among others. An online survey was also carried out on industries in the metal-mechanical sector. This review was done with the full support of the Project Management Unit (PMU), which facilitated meetings and provided extensive documentation. Several meetings were held with the PMU and the project's consultants to analyse and clarify doubts of the evaluation team. Below is a summary of the main considerations that emerged from the review.

The project was approved by the GEF Secretariat in March 2018, although it was practically frozen in 2018 and 2019. The implementation agreement between PRODUCE and UNIDO was signed in November 2019, from which the project accelerated its activities. The project hired a PMU in February 2020 and was relaunched in August 2020, although the project coordinator resigned again, the technical coordinator and staff were able to maintain the project activities. Finally, in September 2020, the current coordinator was hired and the Project Management Unit consolidated. Currently, the PMU has the necessary capacities and was evaluated positively by the stakeholders. The delays in execution were mainly due to the delay in signing the project implementation agreement. Therefore, it is necessary to request an extension of the execution period of no less than a year.

The project continues to be relevant for Peru. The Industrial Zones of Peru face sustainability challenges and are subject to changes in population dynamics, logistical, environmental and risk challenges in a context of global change. The project is also relevant for PRODUCE's sectoral policies and for reducing socio-environmental risks at the local level. It has also been assessed positively by the industrial sector, which has gradually incorporated principles of environmental management and sustainability, especially when there are regulatory gaps and problems of lack of information and inspection such as those that the ZIS Peru addresses. However, the pandemic considerably reduced industrial activity and that seems to have acted as a limitation for the participation of industries.

Regarding the design of the project, the project document addresses a number of barriers that were properly assessed, although, as stated in the ProDoc, there were limitations on the available information needed to build the baseline energy consumption and emissions from the Callao's industrial sector. The emission goals established during project formulation and the estimation of emissions reduction seem very ambitious for Callao, additionally; the emission factor of the electricity matrix used in the project document is three times higher than the current official emission factor obtained by ZIS Peru PMU. (Changes may have occurred in the emissions estimation methodology) The emission factors corresponding to natural gas and the U-POPS remain the same. These findings suggest the need of re-defining mitigation and energy savings targets in line with the current conditions. One aspect that may have been impacted is that, as a result of lack of information in the project's analytical framework definition, it was not obvious that the largest emissions (and emission reduction potential) are concentrated in a relatively small

number of companies. This fact makes the project very vulnerable to those companies willingness to participate, leading to a risk for reaching the project original targets, particularly in the context of the pandemic and its economic impact. This situation is more important in relation to the U-POPS reduction goals.

Regarding the progress with respect to the project goals, efforts have been focused on achieving changes in RECP for the efficient use of resources and cleaner production. The project is providing technical support. Forty-two companies have agreed to assess the potential for reducing CO₂ and U-POPS emissions, 39 have been assessed for emission reduction potential, and 20 companies are receiving technical advice through consultants from GEA-TENUM. This implies that the project has managed to establish a functional reconversion process, although the changes have not yet been implemented. The project has managed to meet goals of number of companies involved, but it is nevertheless, far from achieving targets on energy reduction, CO₂eq, or U-POPS. To do this, it should catalyse the current work with companies to generate successful case studies, while implement new strategies to involve companies with the greater emissions in Callao, as well as expanding the scope of the project to adjacent areas or additional areas. Additionally, there is the potential to work in synergy with other initiatives such as the Eco-Industrial Parks Project.

The project should also deepen the intra and inter-institutional work to define and develop the policy actions in the Roadmap for ZIS and the regulatory framework both at the national and local levels, while advancing in relation to local socio-environmental projects.

There is progress in strengthening capacities to make available industrial zone information, through the updating of a PRODUCE database that will make it possible to have data on processes and emissions. The project is also consolidating a roster of experts on CO₂ and uPOPs emission reduction. On the other hand, financial support mechanisms for industries was analysed, and work is being done to strengthen promotion of financial mechanisms at the national and local levels.

Considerable progress has also been made in training activities, including achievements in gender goals, where the project is also performing satisfactorily.

To date, adequate monitoring is carried out by the PMU, UNIDO and PRODUCE, including periodic meetings, monitoring of indicators and generation of relevant information, as well as technical evaluation of the products. There is still room for improvement in the monitoring capacity of the project.

In conclusion, the project was affected by the initial delays, and then by the Covid-19 pandemic. On the other hand, the project design suffered from information gaps with respect to the baseline and the distribution of emissions among the Callao companies, and there are vulnerabilities in the strong dependence on the participation of a few higher emitters and the restriction to the Callao area. Despite these difficulties, the project currently has a consolidated Management Unit and the initial difficulties have been overcome, although some re-definitions must be done regarding the project emission targets and implement strategies to overcome the current barriers and move towards the achievement of the project goals. On the other hand, the project design suffered from information gaps with respect to the emission baseline of Callao companies, and there are vulnerabilities in the strong dependence on the participation of the companies with the highest emissions and the restriction to the Callao area.

II. Country and project background and context.

II.1 Country context and project justification.

As established in the Project document, Peru has areas characterized by high industrial occupation, particularly in the surroundings of Lima. However, the development of planned sustainable industrial zones (ZIS), taking advantage of synergies between industries, zoning of activities and general management structures for the provision of services and infrastructures and incorporating clean technologies has not been carried out as part of an explicit policy. For this reason, the Government of Peru, through the Ministry of Production (PRODUCE) and the United Nations Organization for Industrial Development (UNIDO) and with financing from the National Fund for the Global Environment (GEF), they have implemented the Project called *Development of Sustainable Industrial Zones in Peru*, with a duration of 4 years.

Under its thematic priority on energy and environment, UNIDO works with industries to help them adopt patterns of production more clean, the optimization of resources and management of energy efficient and low carbon. UNIDO has been working closely with the Global Environment Facility (GEF) since 2006 to address global challenges associated with energy, climate change, the phase-out of ozone-depleting substances, and the production and use of persistent organics pollutants in more than 80 countries around the world.

Peru has experienced sustained rapid economic growth in recent years, partly driven by widespread development in the processing and manufacturing sectors. However, making this growth sustainable is a challenge today. Gross domestic product increased 184 percent from 1990 to 2012 [1], while emissions increased 224 percent in the same period, demonstrating the fact that Peru's economy is becoming increasingly intensive in carbon. Likewise, challenges persist in terms of regulatory and environmental control frameworks, as well as the development of socially and economically sustainable technologies and business models, and government frameworks that create the conditions for this.

The city of Metropolitan Lima and Callao generates around 50% of the Gross Domestic Product (GDP) of Peru and 62% of the Industrial Product. The Constitutional province of Callao located west of the city of Lima and has the largest port and the main airport in Peru; the contribution of the Callao Region to the national GDP is 5%. In Callao, industrial areas coexist with residential areas, and around 20% of the country's manufacturing industry is located in the Callao Region. The port of Callao handles around 75% of the country's imports and exports and these industrial activities in Lima. The Region has 7 districts: Callao, Ventanilla, Bellavista, Mi Perú, La Perla, Carmen de la Legua and Reynoso y La Tip; The total population of Callao is 1'000,000 inhabitants, counting the district of Callao with 40% of the population, followed by Ventanilla with 37%, Bellavista with 7%, Mi-Perú and La Perla with 6%, Carmen de la Legua and Reynoso with 4% and La Punta with 0.3%. At the political-administrative level, Callao has 1 regional government and 7 district municipalities. Poverty levels in the Callao Region are around 14%, which constitutes a context of significant social vulnerability. Added to this situation are the vulnerabilities in public health and security in Callao.

The Callao Region is also subject to strong dynamism; Changes in the productive structure have affected the economic conditions of the companies, as well as the living conditions of the population. Environmental assessment in the Callao 2011-2021 (PDC) detected i) increases in environmental impacts; ii) inadequate provision of basic sanitation; iii) inadequate solid waste management; iv) growing conflicts due to poor definition of institutional environmental competencies; v) inappropriate environmental practices of companies and citizens; vi) air pollution caused by the high level of emissions and noise from industries; vii) loss of ecosystems; viii) pollution of the bay of Callao. Likewise, the climatic variability in the region is high and configures an additional risk scenario.

As detailed in the ZIS-Peru Project Document, Callao also presents various industrial pollution problems and high levels of emissions, although Peru does not have an information system that allows knowing in a disaggregated form the pollution indicators by territory and polluting agent. Emissions include significant levels of unintentional persistent organic pollutants (POPs)

and Greenhouse Gases (GHG), contributing to global warming. To address this problem, the Global Environment Facility (GEF) is supporting the Project of Sustainable Industrial Zones (ZIS) - Callao, particularly in the areas of Mitigation of Climate Change and Chemical Substances and resources.

II.2 Current context

Economic activity in Peru has continued to grow in the 2013-2019 period at rates higher than the average for other Latin American countries, according to the Economic Commission for Latin America (ECLAC); however, in 2020, due to the COVID-19 pandemic, Peru's GDP fell by 12.9%, being the Latin American economy with higher economic impacts after Venezuela. According to the National Institute of Statistics and Informatics (INEI), the most affected sectors in 2020 were Accommodation and Restaurants (-50.45%); Transportation, Storage and Messaging (-26.81%); and Services Provided to Companies (-19.71%). Mining and Hydrocarbons (-13.16%), Manufacturing (-13.36%), Construction (-13.87%), Commerce (-15.98%) and Electricity, Gas and Water (-6.14 percent) also fell. The only sectors with positive numbers were Telecommunications (4.87%), Public Administration and Defense (4.15%), Fishing (2.08%) and Agriculture (1.28 percent). It is important to note that Peru is among the countries with the most victims of the pandemic worldwide in relation to its inhabitants, with 190,000 deaths by June 2021 (500 deaths per 100,000 inhabitants).

The project's interventions in Callao are still relevant. The conversion of industries to clean technologies and the regulatory framework and sustainability policies are needed for Callao and Peru. According to the Environmental Inspection and Assessment Body (OEFA), a body dependent on the Ministry of the Environment, in the period 2018-April 2020 there have been 140 environmental complaints in Callao, of which 50 corresponded to industrial activities, 33 for infrastructure works, 19 to commercial activity and 10 to hydrocarbons. Callao continues to be relevant; industries will remain there due to proximity to the airport and the port, that are the main logistical node of the country. However, these logistical advantages of Callao may be threatened by the high level of vehicular congestion, as well as the change of zoning that has been taking place in Callao, a process by which the space is destined for real estate projects, which poses challenges for industrial development in the absence of regulation. On the other hand, industries may be wary to participate due to the risk of generating investment commitments in the current territorial, economic and political context.

At the level of public policies, it should be noted that most of the Peruvian government plans have had as their horizon the year 2021, coinciding with the bicentennial of independence, such as the National Climate Change Strategy, the National Environmental Action Plan (PLANAA), and the Callao Development Plan. These plans are currently being updated, articulating with the Sustainable Development Goals.

The project document of the ZIS Project - Peru was signed in May 2018, since then there have been certain policies proposed by the Ministry of the Environment (MINAM) that contribute to generate the enabling context for the development of the ZIS Project. One of them was the implementation of the Nationally Determined Contributions (GTM-NDC), dated December 17, 2018. In this regard, there are 62 measures proposed by the Ministry of the Environment of Peru for the implementation of Nationally Determined Contributions (GTM-NDC) referring to Greenhouse Gas (GHG) mitigation measures, which are located in 5 areas: i) Energy (38 measurements); ii) Industrial processes and use of resources (2 measures); iii) Agriculture (6 measures); iv) Use of land use, change of land use and forestry (8 measures), v) Waste (8 measures). These measures, to be adopted by state and non-state actors, aim to reduce GHG emissions and increase removals, with a horizon of 2030.

Another relevant regulation is the Framework Law on climate change, April 2018, which aims to establishing 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 climate change adaptation and mitigation measures. in order to reduce the country's vulnerability to climate change, take advantage of opportunities for low-carbon growth and comply with the international commitments assumed by the State before the Convention United Nations Framework on Climate Change, with an intergenerational approach.

Under this new regulatory context, the ZIS - Peru Project continues to be relevant and is adequately aligned with the strategies, plans, and programs established by the Peruvian sectoral authorities.

It is still relevant to remove institutional barriers, particularly by articulating policies between the Ministry of Production (PRODUCE) and the Ministry of the Environment (MINAM), also considering cross-cutting issues such as the gender approach. Likewise, the regional government of Callao can play a fundamental role, through its Management of Economic Development and Natural Resources and Environmental Management, in providing the necessary sustainability to the project. The motivations of the participating private companies are relevant to guarantee the scalability of the project. Regarding this last point, in a first approximation, there seems to be dissimilar interests and incentives among the companies when deciding their participation in the project. These interests could be conditioned to the economic situation of the industries, their level of formality and compliance with regulations, their current environmental management and corporate image, and the level of trust and relationship with the authorities, among other factors.

A relevant precedent was the initiative called 'Eco-parque del Callao that the Callao' implemented by regional government in 2008 with the support of Swiss cooperation. Although the project did not constitute an eco-park with a territorial delimitation. Produce has launched the development of 17 eco-industrial parks under the National Plan of Competitively and Productivity following the National Strategy for development of industrial parks. These eco-parks would be located on the outskirts of the city of Lima in the districts of Ancón, Chilca, Lurín, Pucusana and Santa María.

Technological barriers exist due to a series of factors, such as the use of obsolete equipment by industries that adds to a process of decapitalization of mainly small and medium-sized industries. Those barriers are accentuated by the COVID-19 pandemic; on the other hand, there are certain institutional weaknesses to implement environmental sector policies; scarce capacities in environmental matters, limitations in services and infrastructure and few land planning instruments. These factors have led to industrial activity in the Callao Region having been losing productivity levels, reducing the added value of production, having generated economic, social and environmental impacts.

With regard to information, there are gaps that are manifested by the availability of lagged information on Greenhouse Gas (GHG) emissions in Peru; thus, the latest report on these emissions is from 2016, which makes it difficult to adequately estimate the GHG reduction goals. On the other hand, companies often do not provide information on their production processes, for fear of being audited. On the other hand, there are limitations to carry out field work, because in the area there is a high level of crime, and low levels of security.

Regarding the existing technical and professional capacities for the project implementation, it should be noted the economic growth in Peru was accompanied by an increase in training of professionals on environmental engineering. Thus, in the city of Lima, 14 Universities offer a professional career in environmental engineering, including the National University of Callao, and also the National Service for Training in Industrial Work (SENATI) offers a technical career

in Environmental Technology for some years. This would be a strength to consider for the implementation of the project.

On the Green Financing, up to 2017 there was in place an environmental credit line by BCP and Scotiabank through a participation agreement with the Swiss State Secretariat for Economic Affairs (SECO), which provided co-financing www.cooperaciónsuiza.pe. Currently, the Development Finance Corporation (COFIDE), a Peruvian state agency, offer the so-called Green Bond (since 2019) for projects aimed to improve environmental quality, including projects to reduce carbon emissions. On the other hand, the Ministry of Production has the Innovate- Peru competitive fund, which finances projects of companies to strengthen their innovation systems, which could be a source of financing so that projects can be implemented to reduce emissions in the industries of the Callao. In general terms, it can be said that public and private financing for sustainable technology adoption is incipient in Peru.

Peru is electing a new government as of July 2021, where there will be a new administration. However, the government's public policies are articulated with the Sustainable Development Goals (SDG), and in compliance with international environmental commitments, which would suggest there will be some continuity in environmental sector policies.

III. Mid-term review objectives, methodology and process

III.1. Purpose, objectives and users of the mid-term review, scope and focus.

As detailed in the Terms of Reference for this review[1], as well as in the GEF guides for project evaluation[2], the purpose of the mid-term external review (REI) is to “provide the project management team with feedback on the project's performance to date and identify early risks to project sustainability, effectiveness, efficiency and progress towards results, including gender mainstreaming”.

The objectives of this external mid-term review are:

- a) Enhance transparency and dialogue between project stakeholders to promote learning for the further development of the project, as well as for its replicability and scaling-up of results.
- b) Verify the impact and sustainability perspectives of the project, providing an analysis of the achievement of the main objective, the specific objectives, the environmental objectives, the progress of the outputs and outcomes, and the impacts based on indicators.
- c) Check to what extent project milestones are being achieved, and if targets are likely to be met and results achieved as planned. Also assesses the design of the monitoring and evaluation to ensure efficient monitoring during project implementation and evaluability.
- d) The evaluation includes an examination of the relevance of the outputs and their initial and current project activities. Propose improvements in future or ongoing activities of the project, as well as review the deliverables of the completed activities.
- e) Obtain lessons of greater applicability for the reproduction of the experience acquired in the projects at the national and regional level.

The direct users of the result of the mid-term review (conclusions, lessons learned and practical recommendations) are the Project Manager and the Project Team (as a project management unit), the National Project Director and the representatives designated by the Ministry of Production (PRODUCE) and GEF.

Furthermore, lessons learned should be shared within UNIDO to further develop the project approach and to feed into project design and formulation of similar projects, in order to enhance learning within the Organization.

The review was conducted in accordance with the proposal made in the Inception Report, including the definition of review questions, evaluation methodology, parties to be consulted and brief analysis of the legislative and regulatory framework of the country. This also involved reviewing documentation of the project on the background of policies and regulations and the definition of relevant data to access.

The midterm review covered a period of 3 years from May 2018 until May 2021, ranging from the beginning of the execution of the project. However, emphasis was placed on the 2020-2021 period, as this covers the tasks of the current project leadership and management teams by PRODUCE and UNIDO and represents the period of greatest substantive advancement of the project; It is also the one with the greatest support in terms of consultations with the stakeholders and available information. The geographical scope coincides with the project intervention area, which is the constitutional province of Callao and the 4 components of the project will be considered.

Component 1: Regulatory framework for the sustainable development of industrial zones;

Component 2: Capacity building on sustainable planning of industrial zones;

Component 3: Pilot demonstration of clean and low carbon technologies;

Component 4: Monitoring and evaluation.

III.2 Guiding questions for the evaluation (adapted from the ToR)

A complete list can be found in the Inception Report .

The most significant questions and a short answer are included in section IV.1.

III.3 Review methodology

The evaluation collected reliable information, completing information gaps regarding guiding questions, confirming the working hypotheses and validating potential recommendations arising during this process. This was done by combining methodologies.

In a first stage, a review of the project documents and other relevant reports was carried out. This document review was performed throughout the evaluation process, and included additional requests for documents and information to the PMU.

A total of 20 interviews (structured and semi-structured) were held with different stakeholders , trying to cover the range of actors with different roles. The list of interviewed actors is included below.

A field visit was also made to the Callao industrial zone (Annex B), in which two companies that are working with the project were visited; one of them with potential to reduce CO₂ eq (Exalmar) and the other with potential reduction of CO₂ eq and U-POPS (FUNVESA). These companies were selected based on three criteria: maximum emission reduction potential, RECP process, and accessibility during the mission. The progress status of the works indicated in the co-financing executed by the Ministry of Transport and Communications was also verified. It was not possible to interview the IEQSA company. This company carries out smelting activities and its participation would allow to meet the U-POPS goals, although it has not been willing to participate.

We implemented an online survey with the assistance of the National Society of Industries (SNI) , to industries from the Metal-Mechanic Committee which includes companies in the sector

of foundries , in order to meet their perception of industrial reconversion processes, interest in projects of this type, and for those participating in the project, the relevance and management of the project in order to have information on the situation in a sector that has been particularly reluctant to participate.

The information thus obtained was analyzed and synthesized, in order to generate a draft report of the evaluation process. As described in the terms of reference, this report was shared in draft version with UNIDO, the National Directorate of the Project and the Project Management Unit for their comments, and their observations were taken into account in the final version of the review. .

III.4. Interviews conducted during the review

Parts consulted and number of interviews carried out considering individual or collective interviews are detailed).

Project Management (1)

Vladimir Lozano, National Project Director - Ministry of Production (PRODUCE)

UNIDO (4) Christian Susan , Project Manager César Barahona-Zamora, Specialist Advisor in RECP César Llona, National Coordinator of the Country Alliance Program (PCP) Peru. Jorge Urbina, National Coordinator of the Project "Development of Eco-industrial Parks in Peru"

ZIS Project Team (4)

Marianella Hernández, Coordinator

Ana Terrazos, Technical Coordinator

Víctor Arroyo, Baseline

Consultant Emanuel Flores, Consultant, monitoring, status of expenses and progress

National Government (5):

Vladimir Lozano, General Director of Industrial Environmental Affairs - DGAAMI. PRODUCE

Edson Espinoza, Director - DIGAMI,

PRODUCE Darwin Pardavé , DGPARG - PRODUCE . Marta Cuba, Director of the Office for Cooperation and International Affairs - MINAM Milagros Beráztegui , General Director of Environmental Quality - MINAM José Alcántara, Executive Director of the Bicentennial City Project - Ancón - MINAM

Subnational Governments (2)

Miguel Cordano . Advisor to the Governor - Regional Government of Callao

Nicanor Sandonás - Deputy Director of Economic Affairs Management - Provincial Municipality of Callao.

Industrial actors - Field visits (2)

Orlando Corcuera Reyes , Superintendent of the Fishing Company Plant- Exalmar

Rodomiro Melgarejo , Funvesa Company Operations Manager

Unions and business associations (2)

Thomas Duncan, Chairman of the Sustainability Committee Chamber of Commerce of Lima

Marileny Lopez Villa , Society National Industries

Contractors (1)

Marcos Alegre, President of the NGO Grupo GEA, headquarters of the National Center for Cleaner Production of Peru - CER (Center for Efficiency and Social Responsibility (CER)).

IV. Project Assessment

IV.1 Findings on project specific questions

Questions about the Project	Report Findings / Cross References
A. Project design, including theory of change and results / logical framework.	
Is the project complying with the planning according to the project design?	<ul style="list-style-type: none"> The project had considerable delays to start its activities (May 2018-Nov 2109), and changes in National Project Coordinator (Mar 2019- September 2020), to which is added the pandemic that impacted the progress of the project. At present, there is a consolidated project management unit and an adequate project management by UNIDO and PRO DUCE resulting in making progress in the fulfilment of the planned activities. See Section IV.E
What are the limitations and strengths of the current project design?	<p>Weaknesses:</p> <ul style="list-style-type: none"> Information available for establishing the baseline emissions of Callao and its distribution among industries and emission factors was scattered and imprecise. Strong dependence on few industries that concentrate emissions, in particular on the emissions of U-POPS There is little connection between the project goals in the industrial sector and the proposed socioeconomic projects. <p>Strengths:</p> <ul style="list-style-type: none"> Capacity to finance restructuring of industries and provide technical assistance. The potential to coordinate industrial, territorial and environmental policies based on the capacities of the Ministry of Production (PRODUCE) and the high concentration of industries in Callao (29% Peruvian industries), which indicates the relevance of the project potential impacts.
B. Project performance and progress towards results	
B.1. Relevance	
How does the project align with national and subnational development priorities? Have there been changes in this regard?	<ul style="list-style-type: none"> The Project is aligned with the sustainable production policies of Peru, existing in addition to environmental policies, sectoral policies such as the national productivity and competitiveness policy of PRODUCE; however, changes in the government party, economic instability and inflation, existing due to the current political context, could change the prioritization of national policies. Population growth trends in the area increase its socio-environmental relevance. Some relocation of industries to other areas might be an opportunity in terms of planning of industrial zones
Are the project objectives beneficial for the Callao companies that are part of the project?	<ul style="list-style-type: none"> The objectives of the projects are effectively aligned with the interests of companies, including medium and large companies that are part of the National Association of Industries (SNI) and the Lima Chamber of Commerce. However, it is necessary to evaluate whether the interest of companies to implement the improvements would be in the short or long term, mainly in relation to the economic context. Companies evaluated the project as positive or very positive, the project financial support and technical assistance, and to a

Questions about the Project	Report Findings / Cross References
	lesser extent contact with technology-providers. (Survey in Annex C). Some companies requested greater technical specialization in the assistance.
Are there differences in terms of benefits for companies due to their characteristics, size (eg SMEs or large companies) and by activity category?	<ul style="list-style-type: none"> The project targets the major CO₂equivalent and U-POPS producers in El Callao in a context of limited support for sustainable production for SMEs, in general. A specific strategy is needed for each group of companies. Larger companies may be more reluctant to participate in the project, and these include large U-POPs emitters , mainly some with less resources and / or capabilities of environmental management, or affected by the current economic situation / pandemic (see survey in Annex C)
B2. Effectiveness and progress towards results	
Are the outputs being delivered as planned and is the project on track against the expected results?	<ul style="list-style-type: none"> The project has managed to position itself in the right direction and materialize progress, especially in capacity building and technical assistance, but definitions of policies and strategies are required to get closer to meeting the goals in C1 and C3. See section IV .B.2 and analysis of result indicators.
B3. Efficiency	
Is the project considered profitable? Have you had an efficient execution?	<ul style="list-style-type: none"> The delays have not affected the overall funding significantly, although some components have been partially affected. This has also generated additional difficulties in the processes with the companies, although to date the efforts have been resumed satisfactorily. See section IV.B.3
C. Project execution management	
C1. Management of projects	
1) Has the project achieved adequate political support for management?	<ul style="list-style-type: none"> At the Central government level, there has been a significant level of acceptance and involvement. It should be noted that in Peru there are few projects to mitigate climate change and reduce pollutants. Support was also expressed from MINAM. The regional government and the provincial Callao are taking an active role in the project, as evidenced by participation in workshops and trainings, although this should be deepened in the future.
C2. Results-based work planning, monitoring and evaluation systems, reports.	
Is monitoring and evaluation carried out effectively, based on results, results and impact indicators in the logical framework?	<ul style="list-style-type: none"> See section IV. C.2 Meetings of the project Steering Committee, annual operating plans, monthly monitoring of the result indicator matrix are held, as well as regular monitoring through weekly meetings between the Project Management, the PMU and UNIDO. There is room for improvement in the monitoring plan, as well as the documentation on the monitoring, the deviations from the goals and corrective actions to be taken.
C.3 Financial management and co-financing	
Are there financial risks that could jeopardize the	<ul style="list-style-type: none"> In general, the project does not present great financial risks.

Questions about the Project	Report Findings / Cross References
sustainability of the project results?	<ul style="list-style-type: none"> • However, if the financing available with the current industries is exhausted, there could be a limitation of funds to expand the actions of the project to other industries in order to reaching the project goals. Although there is not a decision of the PSC on the issue of expanding the actions of the project. • There may be financial constraints to policy development (Comp. 1).
What would be the financing strategy for new projects that allow meeting the emission reduction goals?	<ul style="list-style-type: none"> • Maintain financial resources to support new businesses. • The green line of credit of the Swiss cooperation can reduce this risk to the extent that they are specific funds for clean technologies and appear as co-financing for the project. • Another strategy could be to help catalyse changes of industries with high resources by providing them with pre-feasibility studies. • Depending largely on the priority given by the new government of Peru to the issue of sustainable industrial production an alternative could consist of working with SMEs financed by Innovate –Peru. Another option is the Callao regional government implements a specific environmental project on Greenhouse Gas mitigation with their own resources. On the other hand, the Development Finance Corporation of Peru (COFIDE) has a green credit line, which can be link to the project.
C4. Stakeholder engagement and communication	
Did the project involve relevant stakeholders through information exchange and consultation and by seeking their participation in the design and implementation of the project?	<ul style="list-style-type: none"> • There is good involvement at the level of MINAM and other key stakeholders such as business associations, and technicians from different institutions in institutional strengthening. • Project delays and institutional changes have not allowed for greater involvement at the policy development level. • An important effort has been made to obtain the participation of the industries, although difficulties persist for the participation of large emitters.
D. Scaling up, sustainability and resilience	
Are there possibilities of scalability and replicability of the project with the results obtained?	<ul style="list-style-type: none"> • To the extent of the financial capacities of the project, it could continue supporting the industries already involved receiving technical advice and include more companies in Callao; or even expand to extra Callao industries, ei. in contiguous areas (eg those located on Av. Argentina). Other options could be to expanding to other industrial zones (ei. Lurín) and even to particular sectors (ei. Foundries) • Regarding sustainability over time, the Technological Innovation Centers (CITE) of PRODUCE could be a relevant platform for the sustainability of the project in the Callao Region according to the actors interviewed. • The project's contributions in terms of training and technical skills survey are a direct contribution to the project's objectives. • The generation of information on industrial processes and their emissions will allow better clean production policies. • See section IV.D
E. Incorporación of gender	

Questions about the Project	Report Findings / Cross References
Does the project support institutional learning and promote the exchange of good practices to improve gender equality?	<ul style="list-style-type: none"> • Yes, it is observed by the high participation of women in the training and workshops activities carried out. • The PMU is 100% women. • See section IV. M
F. Environmental and social safeguards	
	<ul style="list-style-type: none"> • The project does not present relevant negative social or environmental impacts.
G. Partner performance	
Has it been adequate in the participation of relevant representatives of industries, government and civil society?	<ul style="list-style-type: none"> • There has been an adequate call for companies and work is done with a large number of them. For some companies, reducing emissions may not be a priority, as they are coping with the economic impacts generated by the pandemic. • It would be necessary to increase the participation in policy formulation and planning of the ministries and local governments. • See section IV.O
How could a greater involvement of subnational governments and the Ministries of Environment and Transport be fostered?	<ul style="list-style-type: none"> • Establishing inter-institutional areas for the formulation of policies and plans. • On the part of public entities, the Provincial Municipality of Callao could be an actor that could have a more relevant role in the project. • See section IV.O.
H. Remaining obstacles to achieving the program or expected results in the project.	
What are the main obstacles to the project?	<ul style="list-style-type: none"> • See Section IV.
Is there the reluctance of companies and entities to participate in the Project?	<ul style="list-style-type: none"> • Yes. The main barriers seem to be the economic and pandemic situation, although there is also reluctance to provide access to detailed information to the State as regulator / inspector. • See Section IV.C4

IV.2 Results of the standardized review issues and questions

To establish objectively comparable performance across a variety of projects, the review team will assess, and rate the project based on the following review criteria, grouped into eight categories:

- A. Project design, incl. theory of change and results/logical framework
- B. Project performance and progress towards results
 1. Relevance
 2. Effectiveness and progress towards results
 3. Efficiency
- C. Project implementation management
 1. Project management
 2. Results-based work planning, monitoring and evaluation systems, reporting.
 3. Financial management and co-finance
 4. Stakeholder engagement and communication
- D. Scale-up, sustainability and resilience

- E. Gender mainstreaming
- F. Environmental and Social Safeguards
- G. Performance of Partners
- H. Remaining barriers to achieving the project expected results.

The rating is based on a 6-point satisfaction scale, from highly satisfactory (6) to highly unsatisfactory (1), which is aligned with the UNIDO rating system for evaluations. The rating system aims to quantify the judgment of reviewers, identify good and poor practices, to facilitate aggregation within and across projects and enable tracking performance trends over a period. The six-point rating system, with highly satisfactory (6) representing the best and highly unsatisfactory (1) the lowest score, allows for nuanced assessment of performance and results. The same rating scale is used for all review criteria.

To ensure coherence in ratings, the rating is defined as follows:

- Highly satisfactory = 6: level of achievement presents no shortcomings (90%-100% achievement rate of planned expectations and milestones)
- Satisfactory = 5: level of achievement presents minor shortcomings (70%-89% achievement rate of planned expectations and milestones)
- Moderately satisfactory = 4: level of achievement presents moderate shortcomings (50%-69% achievement rate of planned expectations and milestones)
- Moderately unsatisfactory = 3: level of achievement presents some significant shortcomings (30%-49% achievement rate of planned expectations and milestones)
- Unsatisfactory = 2: level of achievement presents major shortcomings (10%-29% achievement rate of planned expectations and milestones)
- Highly unsatisfactory = 1: level of achievement presents severe shortcomings (0%-9% achievement rate of planned expectations and milestones)

Aspects evaluated	Rating the intermediate review
A. Project design evaluation	
1. Project design	2
2. Theory of change and logical framework	5
B. Project performance and progress towards results	
1. Relevance	5
2. Effectiveness and progress towards results	2
3. Efficiency	3
C. Project execution management	
1. Project Management	4
2. Results-based work planning, monitoring and evaluation systems, reports.	4
3. Financial management and co-financing	5
4. Stakeholder engagement and communication	3
D. Sustainability Expansion, sustainability and resilience	4
E. Incorporation of gender	5
F. Environmental and social safeguards	N / A
G. Performance of partners	4

A. Project design assessment

A.1 Project design

The project document addresses a series of barriers that are well identified, although, as indicated in the project document itself, there were limitations in the quality of the information available to carry out the elaboration of the energy consumption baseline and emissions from Callao. The estimates of potential reductions in CO₂ equivalent were calculated in relation to information available on the estimated energy consumption of Callao, international standards and other business proxies. Thus, the CO₂eq emission reduction targets set by the project would be in the order of 5% of all industrial emissions in Callao [3] which, can be considered very ambitious. In turn, the emission factor of the electrical matrix according to the estimated reduction seems to be much higher (of the order of three times) of the factors official provided by MINAM 2018 to the project, which may be due to changes in calculations of these factors [2].

In this context, the project now has opted to keep the goals of energy savings by sources (which would be equivalent to keeping the Prodoc emission factors and associated emissions targets of the project (Project Document p. 69-70)). This is a decision that seems reasonable from the point of view of the efforts of the project in terms of technological conversion, but must be validated, as it would imply that the emission reduction goal would be the 64 % of the original due to the difference with the emission factor of the electricity matrix available today. The absence of reliable information was also very important in the estimation of the U-POPS emissions, and in

particular, in the emissions of the different companies of the Callao, which are highly concentrated.

Finally, a baseline analysis performed by the project [4] noted that there were recent technological changes to incorporate natural gas not fully considered in the ProDoc that could reduce opportunities for additional change for some companies, while some industries have moved of the area due to urbanization processes.

A.2 Logical / results framework of the project.

The uncertainties in the baseline information during project formulation constitute a weakness in the project's analytical framework. The fulfilment of the goals of the project requires high participation of the companies with highest emissions. According to the estimate of the consumption of the industrial activities of Callao, the project updated the calculations for the baseline in year 2019 [3]. The goals included in the ProDoc represent savings of approximately 9% and 2.6% of the total consumption of electrical energy sources and natural gas, respectively. The emission value include high-consumption industries such as refineries, which are not the object of the project. In Callao, 80 percent of CO₂eq emissions are from natural gas combustion, concentrated in a few large companies (approximately 17 company's concentrate 80% of emissions from natural gas combustion, including two refineries that are not included in the project approach). The situation identified by the PMU in 2019 leaves the project with little margin to achieve the goals. To achieve the targets the project count with the participation of companies with highest consumption and emissions, SMEs will have lower priority because of their lower consumption of energy the emission values.

This assumption is more obvious in the U-POPS reduction targets. In fact, emissions of U-POPS in Callao are heavily concentrated in a very small number industries (one single industry is key to meet emission goals). This situation has generated a high vulnerability of the project in case of non-participation of two industries, which is what actually happens. Therefore, the project would currently have marginal contributions (approx. 2%) to the U-POPS goal of not having the participation of these industries.

The situations described above imply a vulnerability for the project, which pushed the PMU to carry out a significant efforts to contact and involve industries. Despite these efforts, the participation of companies faces several barriers that were not analysed in depth in the ProDoc (see section VI.C.4). The company participation percentages are one on five (around one committed company to participate in the project out of every five companies contacted). In the foundry sector, which is key due to its U-POPS emissions, the participation is one in six. It is reasonable that, in order to achieve the project's goals, it is necessary to develop specific strategies for involve large emissions companies for the success of the project, and possibly expand the project's actions to companies outside of Callao.

B. Results-based work planning, monitoring and evaluation, reporting

B.1 Relevance

The project, including its initial stages, was developed in the period 2015-2018 with a focus on the Callao area. It was approved in 2018. The project highlights the growth of the Peruvian economy and the growth in absolute value and intensity per GDP of GHG emissions, in a context of weak environmental performance. Industrial activity has also increased its production and emissions, while national (Green Growth Strategy, Climate Change Strategy, NDC) and sectoral (NAMAs, Cleaner Production Agreements) policies have been developed to reduce them. Regarding POPs, the project document highlights emissions from the industrial sector,

particularly from boilers, foundries, furnaces and metal production, which do not have technological processes or adequate environmental management.

The Ministry of Production (PRODUCE) focuses on the importance of developing policies for technological reconversion and energy conservation measures in the industrial sector, as well as support for MYPIMES. Progress has also been made in Cleaner Production Agreements for various business sectors.

The project is aligned with national policies. Those of greatest relevance are those of climate change (NDC, NAMAS), control of pollutants and POPs (NIP-POP) and industrial development policies. In addition, the Ministry of Environment through the OEFA has been increasingly in charge of control of industrial pollution.

Furthermore, the project is adequately aligned with UNIDO's objectives in terms of sustainable industrial development and its strategy for sustainable industrial parks.

The project responds to the needs of the industrial sector and is generally well evaluated by the sector. The business stakeholders consulted agree that there has been a cultural change in the last two decades regarding the relevance of incorporating environmental management and mitigating climate change in industrial production. However, there are difficulties in attracting some companies, such as the foundry sector. It is important that the project becomes relevant for these companies in order to meet their emissions goals. Few financial instruments support this type of technological conversions, and the project serves as a catalyst for such transformations. By way of example, PRODUCE has certain competitive funds such as Innovate -Peru that can stimulate reconversion towards a sustainable mode of production acting in coordination with the project, although they are directed towards SMEs.

Finally, the project has the opportunity to influence socio - environmental improvements in Callao, although scarce progress has been made to date, although the infrastructure public works have largely been achieved. There is a Metropolitan Development Plan for the Callao area [4] on which the project could build, for example helping to delimit the industrial zone, with instruments for territorial planning and definition of residential areas. This can be done in coordination with the Eco- Industrial Parks Project. So far, the change of authorities and those responsible at the regional and municipal level has not contributed to maintaining clear priorities regarding the contributions of the project.

B.2 Effectiveness and progress towards expected results

Progress to results, for each component of the project, is as follows:

Component 1:

In relation to this component's regulatory framework, a gap analysis has been carried out in the regulatory framework for Sustainable Industrial Zones [7], and the Environmental Information System is being updated at a good pace with data from the companies including data from productive processes, inputs and emissions. The pending products are the development of policy instruments, and the development of the Roadmap for ZIS in Peru. As a background, the government approved in 2020 the Roadmap towards Circular Economy in the Industrial Sector, which can provide the framework and background for the ZIS Roadmap. The project estimates to generate the roadmap for the ZIS in 2021.

Regarding the regulatory framework, the proposals would be available in 2022. Work with the directorates of PRODUCE is being carried on to generate policy analysis for the development of proposals. Work is being done to improve the digital availability of companies' information to

solve current information gaps, and to support the development and application of these policies and regulations. A database has been designed and it's almost complete.

In relation to financial and non-financial mechanisms, a consultancy has been carried out on the diagnosis of this type of mechanism. On the other hand, industry promotion instruments have been identified, such as PROCOMPITE and INNOVATE. Regarding the first, ZIS Peru has done work with them so that the metal-mechanical industries were incorporated into the call. Negotiations are also under way with the Green Fund for Swiss cooperation, facing the next launch of Credit Line 2 (LCA 2). This fund is included in the co- finance of the project.

Component 2:

It is the component with the highest level of advancement. Regarding capacity building, they have fulfilled two of the planned goals, including training in cleaner production, in low - carbon technologies and sound management of chemicals. The consultancy has been hired to generate the ZIS planning training modules.

Progress has been made in the national registry of suitable consultants in the project areas, with an estimated 50% progress.

The analysis and preparation of a technical unit proposal for the development of the ZIS Callao is pending. A consultancy is being launched for this analysis.

Component 3:

This component is central to achieving the project's emission reduction goals. The project has generated an initial list of 180 companies, surpassing the initial goals of 90 companies. Forty-two companies have signed letters of interest to participate in the project. Technical Assistance has analysed potential reduction of emissions of 39 of them and one is under way. The project is currently providing further technical assistance to twenty of them, with the support of 11 consultants through contract tendered nationally (GEA Group) and internationally (STENUM). Although this constitutes a very significant advance for the project, with these companies alone the project is still far from meeting its CC and COP-NI goals, although successful interventions may be the gateway to reach some companies with higher volume of emissions that allow meeting the project objectives.

Regarding inclusive socioeconomic projects (Outcome 3.2), a consultant is mapping projects of infrastructure and public services in the Callao industrial zone (Activity 3.2.1.1). The contract was recently approved. Along these lines, there is a need to deepen joint management with the organizations involved. It would be very useful if the consultancy was accompanied by a process of interaction (both individually and through workshops) with the corresponding Ministries and local governments.

With regard to awareness, 250 participants out of the 1000 planned have been reached, having carried out 6 events out of the 10 planned. Two specific trainings on gender issues are pending.

Likewise, the project plans to work on financial incentives, although there are currently no such incentives in Peru. S and generated a consultancy [5] to discuss a strategy, and analysed background, such as the Development Finance Corporation (COFIDE) has promoted the reduction of emissions in transportation. On the other hand, coordination with non-financial incentives and promotion programs has already occurred, such as the funds previously mentioned from the Secretariat for Economic Affairs of the Swiss Government, with which communications have been established and appears as co-financing. Joint work with green innovation investment programs is also being considered, using competitive funds such as

Innovate Peru and FONDECYT from PRODUCE, and funds from the Callao Regional Government.

Component 4: See section IV.C.2

Product	Indicator	Goals	Progress Mid-term evaluation
Component 1: Regulatory framework for ZIS			
1.1 Proposed Regulations for planning and management of ZIS	Number of measures proposed and adopted to enhance institutional and regulatory framework for	At least 3 institutional or regulatory enhancement instruments proposed and adopted	Speeding up the process with technical teams and counterparts is needed.
1.1.1. Regulation, planning aids, and policies for ZIS master planning	N ° of policy instruments for ZIS development	At least three policy instruments developed	Progress: Consultancy on recommendations based on policy gaps in the regulatory framework for ZIS.
	Number of documents outlining a roadmap for SIZ development in Peru	Roadmap for Callao and Peru developed and documented lessons learned	
	Number of databases with information on industrial zones in Peru and associated environmental pollutants	At least one database on environmental pollutants caused by industry developed	Strengthening of the environmental information system in process; database practically completed
1.2 Policies on financial and non-financial incentives to promote clean and low carbon technologies	Number of policies focused on clean and low-carbon technologies developed	At least 3 policies written and presented to the national government (3)	
1.2.1. Proposal for financial and non-financial mechanisms and incentives drafted and submitted.	Number of financial mechanisms developed for companies in the industrial area	At least two proposals for financial and non-financial mechanisms drafted	Advance: Consulting on diagnosis of financial and non-financial mechanisms for ZIS done. Analysis of promotion mechanisms finalized.
Component 2: Capacity development in ZIS			
2.1 Improving the level of experience in ZIS issues between the public and private sectors	Number of representatives of government institutions, the private sector and consultants trained in the development of ZIS	At least 30 people trained in capacity building seminars in ZIS, 30% women and 70% men. (30).	

	Number of jobs created	10 professionals who provide environmental advisory services and ZIS 30% women, 70% men (10)	
2.1.1 Training modules delivered for master planning of sustainable industrial zones.	Number of training modules /	At least 5 developed training modules have been presented.	Consulting firm contracted.
	Number of people trained (male / female ratio)	30 people trained, 30% women and 70% men (30)	
2.1.2 Training modules delivered for resource efficient and cleaner production, clean and low-carbon technologies.	Number of training modules	At least 10 training modules developed and delivered.	
	Number of people trained (male / female ratio)	30 people trained, 30% women and 70% men (30)	
2.1.3 Training modules delivered for sound chemicals management.	Number of training modules	At least 7 training modules developed and delivered (7).	
	Number of people trained (male / female ratio)	20 people trained, 30% women and 70% men (30)	
2.1.4 Upgrade of the existing national database for qualified consultants in the field of low carbon and cleaner production (RECP) and sound chemicals management	Number of databases on qualified consultants in the field of low carbon and cleaner production (RECP) and the sound chemicals management	A national registry with at least 100 qualified consultants (100)	Advance to 50%. Systematization pending
2.2 Improved and disseminated collaboration between companies, government and financial institutions in environmental management and concluded investments	Number of letters of intent for cooperation signed between the PMU and key project stakeholders	Five letters of intent signed between the Callao Technical Management Unit and the stakeholders	
2.2.1. Technical Unit for the development of a sustainable industrial zone established	Technical unit specific to the needs of the industrial zone developed	One proposal for a technical unit for industrial zones submitted	

Component 3: Pilot Demonstration on Clean and Low Carbon Technologies			
3.1 Potential companies and services determined in industrial zone Callao, strategy on clean and low-carbon technology developed.	Number of companies identified	90 companies identified	180 companies identified
3.1.1. Detailed feasibility studies for technology application and transfer of cleaner production assessments carried out.	Number of feasibility studies conducted	35 feasibility studies completed and submitted to companies	Progress: 42 letters of interest signed, of which 20 companies in technical assistance and development of pre-feasibility studies.
3.2 Inclusive socioeconomic projects evaluated and initiated	Number of socio-economic projects	At least 5 socio-economic projects	
3.2.1. Set of inclusive socio-economic projects identified and initiated	Number of people benefiting from community projects (men / women)	1,000 male; 1,000 female.	
	Amount of investments in socio-economic projects (millions of USD)	Investment of USD 35 million in socio-economic projects	
3.3 Increased public awareness on sustainable industrial zones	Number of institutions willing to participate in the project, as a result of awareness events	At least 8 institutions participate in the ZIS project	
3.3.1. Public awareness and communication events held and project results disseminated.	Number of public awareness events	At least 10 public awareness events	6 awareness events held. Projection: Q4 2022
	Number of people reached (male / female)	At least 1000 people participating in awareness events, 30% women	250 participants. Projection Q4 2022
	Number of gender specific training	At least 2 gender specific training	
3.4 New clean technology facilities and practices in selected, implemented and financed companies	Number of companies adopting best practices	35 companies adopt clean and low carbon practices	
	Total direct GHG emission reduced (ton CO ₂ eq);	305,987 tCO ₂ eq	Current projections: 43 % reductions in electricity consumption and 19% reductions in

			NG combustion . (31% of target reductions GHG according to original FE, 17% goals GHG according to official FE)
	Quantity of u-POPs eliminated and safeguarded	1,492,700 u- POPs ($\mu\text{gTEQ /y}$)	Current projections: 2% U-POPS goals
3.4.1 Access to established alternative financing; selected clean technology investment projects	Number of financial mechanisms available to companies for clean and low carbon investments	At least 3 financial mechanisms for clean and low carbon technologies	Working on promotion mechanisms as alternatives
Component 4 Monitoring and evaluation			
4.1 Monitoring and evaluation procedures	Number of monitoring and evaluation frameworks developed	A monitoring and evaluation framework developed for the project	
4.1.1 Monitoring and evaluation mechanism implemented.	Number of independent evaluations carried out	A midterm and a final external evaluation	Midterm evaluation : June-July 2021.

Evaluation of light :

<i>Green = reached</i>	<i>Yellow = On the way to be reached</i>	<i>Red = Not on track to be reached</i>
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B.3 Efficiency

The ZIS - Peru project was approved by the GEF in May 2018, after an elaboration process that included the elaboration of the Project Identification document (PIF) as of March 2015 and its approval in May 2016.

The financial implementation of the project is USD 440,198 (UNIDO, Feb 2021), which represents 10.07% of the project budget (USD 4,114,000). This is consistent with the fact that the project was partially stopped in 2018 and 2019. In these years, execution corresponded to 2% and 0.001% of the project budget, respectively. Thus, the delay in implementation will not result or necessarily in a significant reduction in the cost effectiveness and financial efficiency of the project assessed globally . Project execution accelerated to 5% of the project in 2020 and to 2.5% in January-February 2021, mainly due to the hiring of the project team, consultants and contractual services. However, it should be noted that there could be an imbalance in the future in the funds provided for the Project Management Unit and in Component 1 (see Section IV.C.3) .

This delay also affected relations with companies, with consequences in terms of efficiency and effectiveness. The project was relaunched and rebuild a round of contact with industries that were committed s with the original project, including letters of cofinancing, in some cases there is no assurance of commitment. Many of these companies lost interest or found themselves in a different context (including due to the pandemic). This forces the project to rebuild agreements and commitments with companies but not all commitments have been reassured to this date.

C. Project implementation management

C.1 Project management

The project had very little progress from March 2018 to November 2019, when the implementation agreement was signed. There were significant advances after March 2020 although the current PMU is not consolidated until September 2020 with the incorporation of the project coordinator. Since then, the project has had a positively evaluated management. In short, there have been delays and changes that impacted the project, although the problems raised have been overcome and the project is considered to be properly managed at present.

The project was approved by the GEF Secretariat in March 2018, although it was practically stopped in 2018 and 2019. Among other factors, it was not possible to generate a financial execution modality by the Project Executing Agency (PRODUCE) and the Agency of Implementation (UNIDO). In addition, there were several changes of authorities and those responsible for the project, including two short-term coordinators. The implementation agreement was signed in November 2019 and determines that UNIDO, at the request of PRODUCE , provides support for the execution . The delay in finalizing the management arrangements can be considered part of the learning curve for the coordination work between PRODUCE and UNIDO in Peru and was corrected in the following projects.

As of February 2020, the project accelerated its activities with the hiring of part of the current PMU. This was based on the continuity of the current Director of the Project by PRODUCE. However, during 2020 there were again changes in the coordination of the project, as well as the project manager from UNIDO. Despite this, the project was strengthened with a “Stakeholder Engagement” consultancy and the Technical Coordinator of the project was maintained. The current Project Coordinator joins in September 2020, consolidating the current Management Unit with professionals in the field. That is, it can be considered that there has been a continuity of activities since approximately February 2020, a little less than a year and a half to date.

Under the current management of the project, there have been two meetings of the Project Steering Committee (CDP), in May and another in December 2020. In the last, the proposal to request a one-year extension for the project is approved, being pending such request for the findings of this midterm evaluation.

In turn, the relaunch of the project coincided with the impacts of the global pandemic of COVID-19, which in addition to the cost in human terms, implied some difficulties to advance the management processes at all levels and a significant reduction in the industrial activity that represented an additional difficulty for the project.

Currently, the stakeholders consulted agree that the project team is consolidated. It is integrated into PRODUCE's activities, where, according to the Project Director, it is ranked as one more direction. Due to the professional qualifications of the team, and according to the consultations made, the Project Management Unit has adequate capacities to carry out good management and its performance is evaluated favorably. It is highlighted that the PMU has generated a new baseline and adequately deepened the analysis of risks and threats for the project, which enables the generation of strategies that allow overcoming the limitations of the lack of original project information even in the current context pandemic.

C.2 Result-based work planning, monitoring and evaluation, reporting.

To date, adequate monitoring is carried out by the PMU, UNIDO and PROUDCE, including periodic meetings, monitoring of indicators and generation of relevant information, as well as technical evaluation of the products. It is considered that the annual plans and instances weekly planning activities that include PRODUCE, the PMU and UNIDO are effective and are being followed indicators and targets according to the results framework matrix of the project. The financial execution of the project is monitored on a monthly basis, as well as the procurement plan. The results framework and the risk matrix are updated every six months. The project also intends to monitor the communication management matrix, the number of project participants and the co- financing.

Regarding the project's monitoring mechanisms, the project has a monitoring plan dated January 2021 [6] prepared by the consultant in charge of monitoring . The considered plan is not specific enough and would benefit of following GEF-UNIDO guidelines. Also there is a need to document the systematic monitoring by result indicators, and the corrective actions identified when needed and the actions implemented. Financial tracking is correct.

C.3 Financial management and co-finance

Financial management is within the standards of the implementing agency. There is adequate documentation. The item changes have been agreed with PRODUCE and UNIDO, which is why it is considered that they comply with the regulations of the Implementation Agency. The information available on contracts and consultancies from 2020 was analysed and is consistent with the planned activities. In relation to the level of expenditure to date, the areas with the highest expenditure in relation to the achievement of progress from the budgetary point of view, are Output 1.1 on regulatory changes and the project management component (60 % of execution of planned expenditure approx.). If the project extends its operation, actions may be required in relation to these components.

With regard to co-financing, there is an adequate amount of co-financing (21% of total commitment in the ProDoc) (see Annex A) considering that most of the co-financing will be materialized with the industrial conversion. In spite of the initial delay of the project causing some discontinuity in the participation of some industries considered, new commitment have been

achieved by current participating industries. Likewise, there have been difficulties in obtaining co-financing letters from different actors such as MINAM due to changes of authorities in government counterparts. It has been possible to verify from the field visit (Annex B) that part of the planned government investment in Callao has been carried out ; The MTC has contributed US \$ 8,174,550 to improve the expansion from Av. Nestor Gambetta , while the Santa Rosa Bridge and related works are under construction (US \$ 27,651,154 expected) (See Co-financing information in Annexes).

C.4 Stakeholder engagement and communication

Participation

With respect to state and local government agencies, project partners have positively rated the project and its activities, such as the training activities. An important obstacle has been the frequent and in some cases unexpected change of authorities in the different ministries (eg Ministry of Transport and Communications, Ministry of Environment) and in the regional and municipal governments of Callao. This regular change has meant a setback in negotiations between institutions. It is necessary for the project to consolidate the relationship with technical-professional staff of the ministries based on specific lines of work, particularly in relation to regulatory frameworks and territorial planning, as a way to maintain institutional links and work dynamics that transcend changes of political office and act as support for the work done.

On the other hand, industrial associations have been good allies to facilitate contact with companies, and there is an opportunity to deepen their role in the project, in various capacities. One of them may be the intermediation of industry associations to help remove some of the barriers to participation by some industries, for example, this can be achieved if the consultant in charge of technical assistance is directly supervised by the association who also mediates the financial support. On the other hand, the Lima Chamber of Commerce has created an area of sustainability, and is working with the Eco- Industrial Parks project. These associations can be a partner for the promotion and financial support mechanisms for companies also for generating a Technical Unit.

With regard to industries, a significant effort was made to involve participants, through industry surveys (almost 200 industries were identified), contacts through 8 business associations, and virtual meetings with 89 prioritized industries. In addition, meetings were held with 5 banks, 3 technology providers, NGOs, and government agencies [2].

However, there are various industries that do not participate today for a series of reasons that were analysed in this evaluation. Some of these reasons are mentioned in project consultancies [8] others were mentioned in the interviews and also in the online form. Participation may have been impeded for various reasons:

- Initial delays of the project
- Pandemic and economic situation puts many industries in an economically compromised situation
- Perceived risk by industrial actors that PRODUCE, as a regulator, has access to process information and possible breaches of regulations.
- Lack of economic capacity and human resources of companies.
- Non-priority conversion at this time

As an example, a foundry which has by itself emissions that would allow to meet the project goals, is reluctant to participate directly with the regulatory agency due to a perceived risk to jeopardize permits.

Another aspect is the lack of an effective regulatory framework that gradually demands changes predisposing the transition to a cleaner production. Today the companies have little regulatory pressure to make changes. This would enhance the participation of companies, particularly those with more polluting production processes and could be a line of work with MINAM .

As part of the evaluation, a survey was conducted of companies in the metal-mechanical and foundry sectors, to understand the difficulties of participation. 16 companies participated, six of which are participating in the project.

Results of the online survey

Over 70% of companies in the metal-mechanic industries and foundries surveyed in the poll, show plans to make changes towards cleaner technologies or greater energy efficiency in the short or medium term.

The main motivations for this would be an improvement in productivity (90%), followed by competitiveness, economic benefits from reducing emissions, and achievements in environmental management. Compliance with regulations and market / consumer requirements would have little weight in these decisions.

The motivations for participating in the ZIS for companies in the sector would be financial and technical support in the first place, and in second contact with technology providers.

The barriers mentioned were limited resources and the impact of the pandemic together with the current production situation, and secondly, there is a concern about opening its process to institutions in charge of inspection and confidentiality of the information accessible to the project.

Regarding additional incentives, tax incentives would be viewed positively, while soft credits or competitive incentives would also be relevant. To a lesser extent, greater clarity in regulatory requirements and access to green certification schemes are seen as positive.

On the other hand, most of the participating companies evaluate the project very positively or positively (83%), mainly due to the catalysis of necessary changes and technical support. Other notable aspects to a lesser extent are technology transfer and contact with suppliers.

The aspects to be improved would be, in the first place, to shorten the implementation times (71%). It was also mentioned that the quality of technical assistance could be improved (57%) and to a lesser extent, increase training activities and have a greater presence.

The companies believe that the project could contribute to the socio-environmental situation of Callao, especially improving infrastructure. Almost half mentioned that it would be valuable to build an area of coordination and promotion such as that proposed by the project through a Technical Unit or a CITE.

Communication

Starting in 2020, the project developed a communication strategy and carried out various dissemination events, although they had to be carried out virtually due to the pandemic. Main activities where the relaunch of the project with an attendance of over 100 participants. An event was also held for providers of eco - efficient technologies , and informative talks and other events were and will be held in 2021. The project is making progress in deepening its communication strategy.

D. Sustainability

The contributions of the project in terms of training in different areas and survey of technical capacities and list of consultants in the matter are a direct contribution to generating technical capacities to facilitate RECP and clean technologies processes.

In turn, the generation of a database, when installed, will improve the availability of information on industrial processes and their emissions will allow better clean production policies.

The project is expected to generate a Technical Unit for Sustainable Industrial Zone Callao. This could be based on a CITE, and from the interviews carried out, it is clear that there is good receptivity in the different actors to establish this area, which will be evaluated in future stages.

E. Gender mainstreaming

The project is adequately carrying out the incorporation of gender aspects. It is important to highlight that the Project Management Unit is made up entirely of women (Coordinator, Technical Coordinator, Assistant). In the industrial sector, with little historical presence of women this should be understood as an achievement of the project.

Regarding the performance of the project, the project foresaw a series of gender indicators in its activities that are being taken into account. The project has been complying with the minimum proportion of women (30%) in its training activities in cleaner production, low carbon and rational management of chemicals (See evaluation reports of training activities).

The goals that remain to be met include gender-specific courses and the consideration of the gender dimension in the Roadmap documents for the development of ZIS and in the policy instruments, when these are generated.

F. Environmental and social safeguards

According to the evaluators, the actions of the project so far does not generate significant social or environmental risks, but can reduce environmental risks, mainly exposure to U-POPS.

G. Performance of Partners

With respect to state and local government agencies, project partners have, according to documents and interviews, performed adequately.

Project partner	Performance	Actions to strengthen
UNIDO HEADQUARTERS	Monitoring of the project from relaunch, provision of technical assistance and financial execution of the project.	Opportunities to deepen coordination between projects on the ground, in particular the Industrial Parks project
PRODUCE	Effective leadership under the current authorities. Project prioritization and support for activities.	Definition with the partners of political and technical guidelines in relation to strategies suggested by this review, definition in terms of the Roadmap and regulatory framework that allow reducing uncertainties associated with the change of government.
National government actors (MINAM, Min. Transport, Min. Housing), and sub-national (Regional and Municipal)	Interest in the project, in some cases changes of authorities and project delays have resulted in little effective involvement in the project.	Development of specific technical links in relation to the regulatory framework and inter-institutional actions within the framework of the project.
BUSINESS	Good participation of a large number of companies (42) with 20 companies in the technical studies stage. Reluctance of some large emissions companies required for the project due to multiple causes.	Develop a strategy to reach non-participating companies in Callao; expand geographic location of the project.
Lima Chamber of Commerce, National Society of Industries, Other Associations.	Good relationship and willingness to participate in the project, valuable agents to establish and maintain contact with industries.	They can acquire a pivotal role in expanding project actions to non-participating companies and in generating technical unity
GEA-STENUM	Meeting expectations.	Forecast of additional capacity to support new industries.

H. Remaining barriers to achieving the project's expected results.

Barriers to achieve the expected results	How to solve them	Who can do it
Pandemic and economic impacts make it difficult for the business sector to participate	Opportunity in post-pandemic recovery	PRODUCE-UGP
Delays / changes in the project and authorities led to little accumulation in the development of national regulations and ZIS Roadmap	Increase participation and joint work, establishing areas at the intra- and inter-ministerial technical level	PRODUCE - UGP , with MINAM and other ministries .
Delays / changes in the project and authorities led to little accumulation of regulation for ZIS and territorial planning	Increase participation and joint work, establishing areas at a technical level with relevant ministries and local governments	PRODUCE-UGP , with local governments and ministries
Lack of soft loans and financial mechanisms for companies by the financial sector	Deepen support and cooperation with promotional initiatives and funds, using leverage of project funds	PMU with UNIDO and Donors, business associations, companies
Lack of will of Callao industries to participate in the program, particularly those with high consumption of natural gas and emissions of POPs –NI	Reduce limitations for participation : a) Achieving successful cases in companies with work in progress b) working with business associations or the UNIDO PCP to i) “ sell ” the project and ii) establish a “firewall” between industries and PRODUCE that helps reduce the fear of inspection.	PMU with partners, business associations
Limitations in Callao to incorporate industries	Expand to contiguous areas and evaluate other areas or criteria	PMU, PRODUCE, UNIDO with EcoParques Project
Socio-environmental projects in the area of the not are defined and have weak insertion in the original design of the project	Define project portfolio in conjunction with potential partners. Reassess the scope and size of these projects to improve their relationship to project work.	PMU with local partners

IV.3 Risk assessment

Table. Identification and evaluation of risks

Categories:	Criteria	At risk (Classification 1-3)	Not at-Risk / (Classification 4-6)	Description
	A. Project design, including theory of change and results / logical framework	3		Information gaps in the in the design of the consumption, emissions and emission factors set extremely demanding targets for Callao and ambitious goals and increased

				the vulnerability of the project participation the industries with the highest emissions.
B. Program / project performance and progress towards results	1. Relevance		5	The project continues to be relevant according to the priorities of the country and UNIDO, although there is risk (not materialized) due to uncertainties associated with the change of government authorities
	2. Effectiveness and progress towards results	3		Risk of failing to meet emissions reduction targets associated with participation of industries impacted by global pandemic, reduced industrial output, initial delays in the project , and trust in national institutions.
	3. Efficiency	3		Delay in the start of the project affected industry commitments general progress, although it does not necessarily represent a financial inefficiency for the project in general and could be solved if the project if an extension is granted.
C. Management of program / project execution	1. Project management		4	Initial delay but no risk at present (2020-2021)
	2. Results-based work planning, monitoring and evaluation systems,		4	Good planning and management and response capacity at the UGM, Government and UNIDO levels. There is room for improvement in the monitoring plan and follow-up of indicators according to GEF-UNIDO guides and documentation of the monitoring and actions taken.
	3. Financial management and co-financing		5	Good financial management. Co-finance in accordance with project expenditures, bulk of co-finance and investment pending for industry conversion.
	4. Stakeholder engagement and communication		4	Very good contact effort with interested parties, in particular with industries and industrial unions. Although currently not reached participation of companies required to meet the goals, it is possible to develop strategies to incorporate new industries, maintain permanent contact with current and further work on policies with partners .
	D. Scalability, sustainability and resilience		4	If the above results are obtained, there would be feasibility to maintain a technical scope of ZIS Callao
	E. Gender mainstreaming		5	The project has been meeting gender goals

	F. Environmental and social safeguards (ESS)			The project does not present challenges in environmental or social terms.
	G. Partner performance		4	The partners have responded adequately, although it is necessary to deepen their participation
	H. Remaining obstacles to achieving the expected results of the program / project	3		Get the participation of high-emission industries, and maintain the political commitment of the new government .
	<p>General classification of the risk of the Project or 4, high risk, required actions.</p> <p>Summary: The project has risks of not meeting its emission reduction goals and ZIS policies, in a context of a global pandemic and a change of government, in particular because it does not yet have sufficient commitments from industries with high emissions in the Callao area. . However, it is considered that it is possible to act to reduce these risks through a strategy that addresses them.</p>		<p>Overall risk classification of the program / project in the medium term based on the number of project risks identified</p> <p>0-1 Low 2-3Medium > 3 High</p>	

Conclusions, recommendations and follow-up plan

The project was firstly affected by the delay in implementation, and then by the Covid-19 pandemic. This generated delays in the interaction with the companies and in relation to the achievement of results. Moreover, the design of the project suffered from gaps in information regarding the baseline and the distribution of emissions between companies in Callao, and there are vulnerabilities in the strong dependence and the participation of higher emissions industries in the Callao sector. Despite these difficulties, the project currently has a consolidated Management Unit which has accelerated project implementation and can carry out actions to overcome current barriers and delays.

The following recommendations are made:

1. Request an extension of at least one year for the execution of the project. Without this extension, the project's achievements will be seriously compromised.
2. Clearly establish the criteria to be used to evaluate the project's success in mitigating climate change. One option according to the current criteria of the project would be to maintain the energy consumption reduction goals by source. Due to the discrepancy in the emission factors of the electrical matrix originally calculated vs. the current ones, this would imply a significant reduction in the total emissions goal of the project that must be assessed.
3. With regard to industrial reconversion, the project must maintain efforts to support the companies that are currently participating in the project, prioritizing those with the highest level of emission reduction, without neglecting all the participating industries so far. This is essential to demonstrate the value of the project with practical achievements as an incentive for additional companies. This will require differential support strategies according to the volume of potential emission reduction, for example incorporating technical assistance from Universities or technology centers for companies that will not have financial support in investments.
4. Design a strategy to attract additional industries to meet the project goals. This strategy should have two components:
 - a. Those companies in the area of the Callao not involved in the project, particularly with potential reductions in natural gas consumption and foundries. This strategy should take into account the barriers identified in this consultancy (see section IV.C.4), as well as define the resources that will be allocated for such purposes. It would be desirable to generate an agreement through a business association (eg Lima Chamber of Commerce) to help promote the project to companies with potential, while generating a bond of trust between the actors. For example, it is recommended that one or more technical consultants of the feasibility study perform their advisory tasks to companies under the direct supervision of the association. This type of agreement could in turn be the seed of the Technical Unit foreseen in the Project Document to maintain its future sustainability.
 - b. Expand participation to companies outside of Callao. It is suggested to evaluate the inclusion of companies under three criteria: i) Areas surrounding Callao, ii) The Lurín area, in coordination with the Industrial Parks project, since it will be expanding its activities to this industrial area. This would allow a complementarity and mutual strengthening between the projects and iii) include the foundry sector, irrespective of their location, with the criterion of maximizing the reductions of U-POPS.
5. Define actions on the regulatory framework at the national and Callao level. It is essential to define in the next six months the main lines of action in the roadmap and the planning and regulatory activities. This will make it possible to establish links between technical personnel of the project and the institutions that reduce the uncertainty due to changes in authorities. The

project consultancies could be conceived more as a support to the technical results of these instances by providing technical inputs on the baselines and an analysis of policy alternatives. It is suggested to build teams, in a first step internally in PRODUCE and in a second stage with relevant partners at the national and local level.

6. As for financial promotion mechanisms, as long as it is not possible to generate soft credit mechanisms by the banking sector, the strategy of deepening the link with the different promotion funds and programmes is consistent with the strategy of facilitating access for the companies participating in the project. This in turn would help materialize the committed co-financing. (see section IV.B.2)

7. Begin the definition - and collective discussion - of the technical scope that will guarantee the continuity of the project's actions. This should be carefully analyzed and there are resources for it, and it is not of the utmost urgency. In this review, it was suggested by PRODUCE, with the support of various actors, that a CITE could be a suitable structure for this purpose. It is suggested to start conversations about alternatives early with potential partners. We recommend to call an expanded Steering Committee oriented to strategic discussion, and to consolidate an interinstitutional body with strategic goals.

8. Agree on a joint agenda between the UNIDO Sustainable Industrial Parks project and ZIS Peru, with a focus on the Callao and Lurín areas, seeking synergies between the technical assistance of the former and the investment support of the latter.

Monitoring Plan:

Program or component / project result	Recommendation	Agreed action	responsab him	Priority and agreed date
General	R1	Request a free extension of at least one year	UNIDO	ASAP
General C3.1 / C3 . 4	R2	Define goals in relation to CC and expansion of the target areas.	PRODUCE UNIDO UGP	3 months.
C3.1 C3 .4	R3	Prioritize current work in participating industries with differential approaches.	PMU	4 months.
C3.4	R4	Develop strategy for attracting new industries intra and extra Callao	PMU	6 months
C1 .1 C3.2	R5	Development of technical groups in PRODUCE and inter-institutionally for policy development: Roadmap, national and local regulatory framework, local projects.	PMU	3 month
C1 .2 C3 .4	R6.	Deepen joint work with national and local promotion instruments	PMU	6 months.
C2 .2	R7.	Interaction with partners and projects in an inter-institutional body	PMU	6 months

C1.1 C2.1 C3.4	R8.	Coordination of agenda with Sustainable Eco- Industrial Parks project	PMU, UNIDO	3 months
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Annex A. Financial Information

I. Dates

Milestone	Expected date	Actual date
Project CEO approval date		March 09, 2018
UNIDO actual approval date		April 16, 2018
Project implementation start date (PAD issue date)		May 30, 2018
First disbursement date		May 30, 2018
Originally planned implementation completion date (stated in CEO approval / approval document)		May 30, 2022
Revised planned implementation completion date (if any)		At least May 30, 2023 (with approved extension)
Completion of the mid-term review		04 July 2021
Final evaluation		

II. Project framework

Project Component	Activity type	GEF Funding (USD)		Co-financing (USD) (original)	
		Approved	Real		Real
1. Policy framework for sustainable industrial zone development	Techn assist	235,000	97,819	1,124,000	421,125
2. Capacity building on sustainable industrial zone planning	Tech. Assist	315,000	104,784	345,600	129,485
3. Pilot demonstration of clean and low-carbon technologies	Tech. Assist	1,069,000	182,958	997,500	373,730
	Equity	2,100,000	0.00	41,265,704	8,390,049
4. Monitoring and evaluation	Tech. Assist	200,000	39,403	325,000	121,767
5. Project Management	Tech. Assist	195,000	119,622	400,000	149,867
Total (USD)		4,114,000	544,587	44,457,804	9,586,023

III. Co-financing

	Fuente de cofinanciación	Tipo de cofinanciadore	Tipo de cofinanciación	Preparación del proyecto		Etapa de ejecución del proyecto		Por ejecutar
				(en USD)		(en USD)		
				Esperado	Real	Esperado	Real	
1	AGENCIA PARA LA PROTECCIÓN DE LOS RECURSOS NATURALES (APREN)	Private	Equity	150,000	0	150,000	20,000	130,000
2	CICLO – MP RECICLA SAC	Private	Equity	300,000	0	300,000	150,000	150,000
3	CITE ENERGÍA – SILICON TECHNOLOGY S.A.C.	Private	Equity	40,000	0	40,000	45,500	-5,500
4	CLIMBER WORLD PERU	Private	Equity	1,000	0	1,000	0	1,000
5	COERIMAR EIRL	Private	Equity	500	0	500	0	500
6	MECANICA E HIDRAULICA GALEX SAC	Private	Equity	50,000	0	50,000	0	50,000
7	CER/GRUPO GEA	Private	Equity	440,000	0	440,000	419,681	20,319
8	IZAJES DEL PERÚ S.A.C.	Private	Equity	5,000	0	5,000	0	5,000
9	J&S FERRETERIA INDUSTRIAL S.A.C (J&S COATING S.A.C.)	Private	Equity	200,000	0	200,000	140,000	60,000
10	MARCO PERUANA S.A.C.	Private	Equity	10,000	0	10,000	0	10,000
11	MINISTERIO DEL AMBIENTE	Government	In-kind	510,000	0	510,000	0	510,000
12	MINISTERIO DE TRANSPORTES Y COMUNICACIONES	Government	Equity	35,825,704	0	35,825,704	8,174,550	27,651,154
13	PURE BIOFUELS DEL PERU S.A.C.	Private	Equity	36,000	0	36,000	0	36,000
14	MINISTERIO DE LA PRODUCCIÓN (PRODUCE)	Government.	In-kind	1,014,000	0	1,014,000	698,292	315,708
15	REACTIVOS NACIONALES S.A. (RENASA)	Private	Equity	25,000	0	25,000	11,500	13,500

16	RF CAPITAL SRL	Private	Equity	30,000	0	30,000	0	30,000
17	SECRETARIA DE ESTADOS PARA ASUNTOS ECONÓMICO DE SUIZA (SECO)	Donor	Loan	5,000,000	0	5,000,000	0	5,000,000
18	SOCIEDAD NACIONAL DE INDUSTRIAS	Industrial Association	In-kind	345,600	0	345,600	0	345,600
19	TALMA SERVICIOS AEROPORTUARIOS S.A.	Private	Equity	150,000	0	150,000	0	150,000
20	ONUDI	Implementing agency	Grant	125,000	0	125,000	30,000	95,000
21	ONUDI	Implementing Agency	In-kind	200,000	0	200,000	48,000	152,000
22	Exalmar	Private	Equity	0	0	991,080	0	991,080
23	IMPALA TERMINALS	Private	Equity	0	0	340,800	0	340,800
24	ETNA	Private	Equity	0	0	115,800	0	115,800
25	TASA	Private	Equity	0	0	3,272,760	0	3,272,760
26	Corp.REY	Private	Equity	0	0	194,520	0	194,520
27	FUNVESA	Private	Equity	0	0	679,200	0	679,200
28	APROPA	Private	Equity	0	0	48,180	0	48,180
29	UNITRADE S.A.C.	Private	Equity	0	0	19,800	0	19,800
30	INDUSTRIAS DEL ZINC S.A.	Private	Equity	0	0	55,200	0	55,200
31	PAMOLSA	Private	Equity	0	0	335,100	0	335,100
32	Paraiso	Private	Equity	0	0	630,600	0	630,600
33	SMI - Reciclado PET	Private	Equity	0	0	205,680	0	205,680
34	La Colonial	Private	Equity	0	0	227,280	0	227,280
35	FADESA	Private	Equity	0	0	97,440	0	97,440
36	AGRIPROCESS S.A.C.	Private	Equity	0	0	52,200	0	52,200
37	EHF Industrial	Private	Equity	0	0	117,420	0	117,420
38	AMFA VITRUM	Private	Equity	0	0	46,200	0	46,200
39	Frio Aereo	Private	Equity	0	0	99,600	0	99,600
40	R&G	Private	Equity	0	0	42,600	0	42,600
Total				44,457,804	0	52,029,264	9,737,523	42,291,741

ANEX B: FIELD VISIT.



Av. Nestor Gambetta - 8.43 a.m. Tramo Km 19 y 22 – Día: 01/06/2021



Toma fotográfica de la Empresa FUNVESA con las 2 calderas al fondo. Día: 1/06/2021



Productos finales de la empresa FUNVESA: Día 01 de Junio de 2021



Visita a la empresa EXALMAR – Día: 01/06/2021



Entrada del Tunel Nestor Gambetta: Día: 1/06/2021

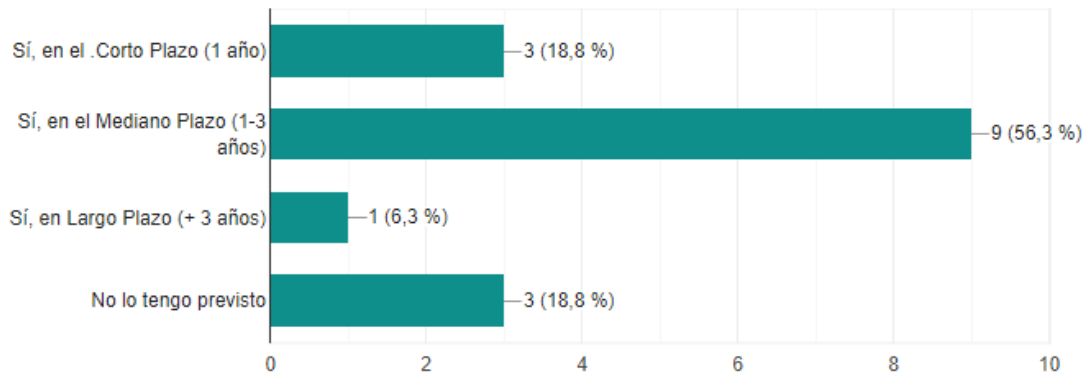


Ovalo Centenario en el Callao – Se tuvo una congestión de 1 hora, debido a la fila de camiones esperando salir de los depósitos. Día: 01/06/2021 - 14.20re

ANNEX C: ONLINE SURVEY RESULTS

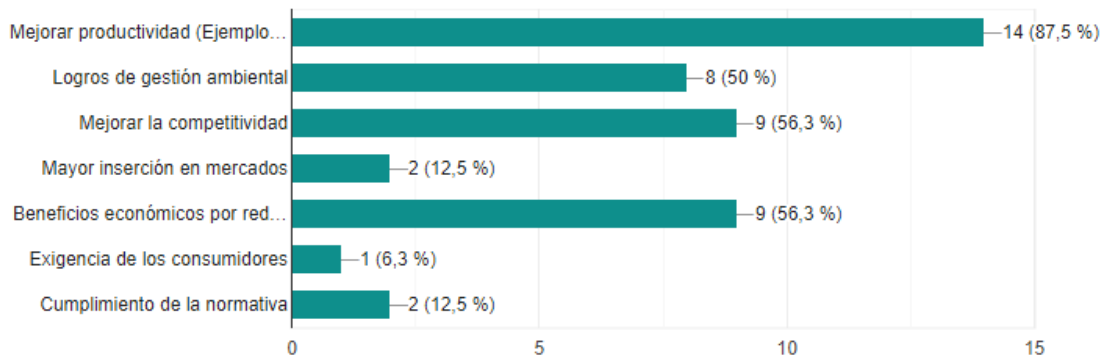
1. ¿Su empresa tiene previsto realizar cambios al proceso productivo hacia tecnologías limpias o de mayor eficiencia energética?

16 respuestas



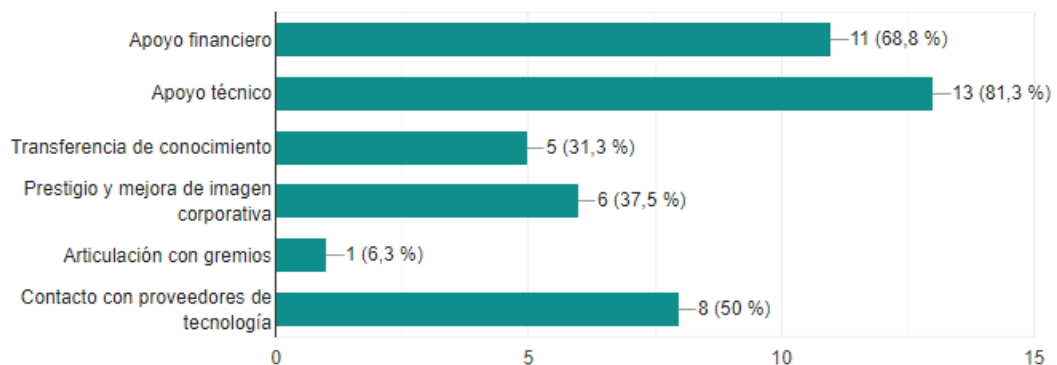
2. ¿Cuáles serían las principales motivaciones para cambiar de tecnología en su empresa? Elija las 3 principales motivaciones para esa decisión.

16 respuestas



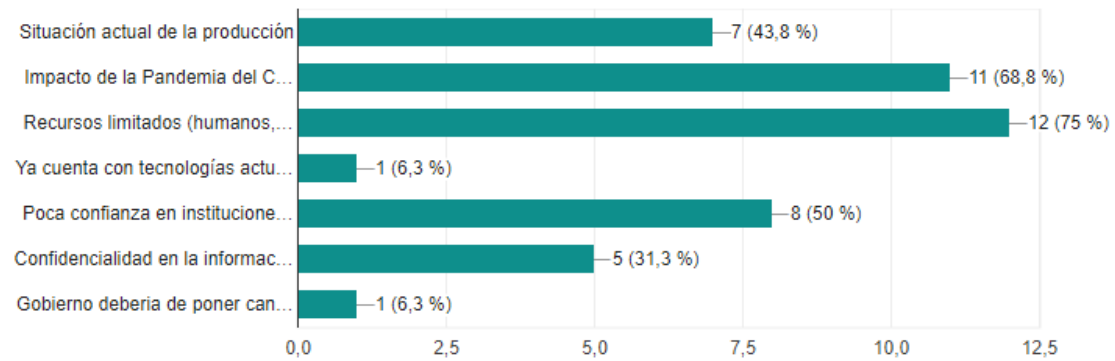
3. El proyecto ZIS apoya la reconversión tecnológica de las empresas ¿Cuáles son o serían sus principales motivaciones para participar en un programa de este tipo? Elija las 3 principales respuestas.

16 respuestas



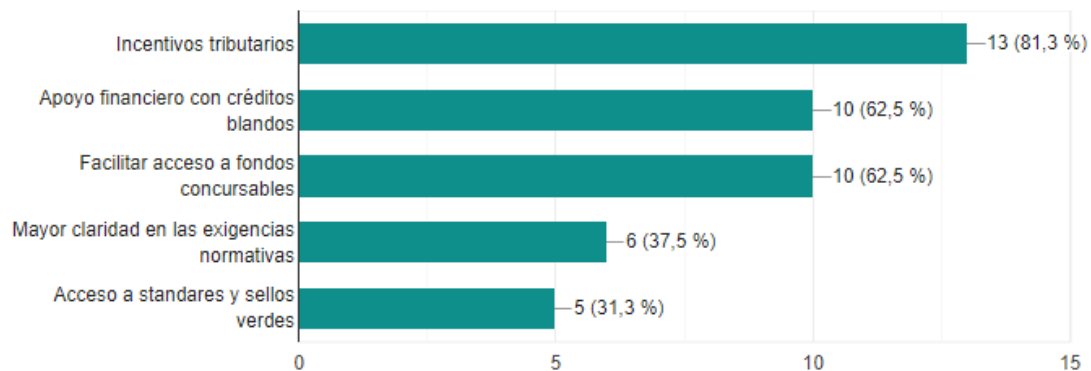
4. ¿Cuáles serían las limitantes para participar en un programa de este tipo? Elija las 3 principales respuestas.

16 respuestas



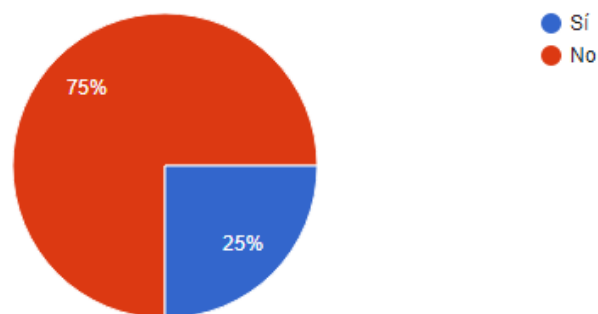
5. ¿Qué tipo de apoyos o incentivos contribuirían a facilitar la transición hacia producción sostenible en su empresa? Elija las 3 principales respuestas.

16 respuestas



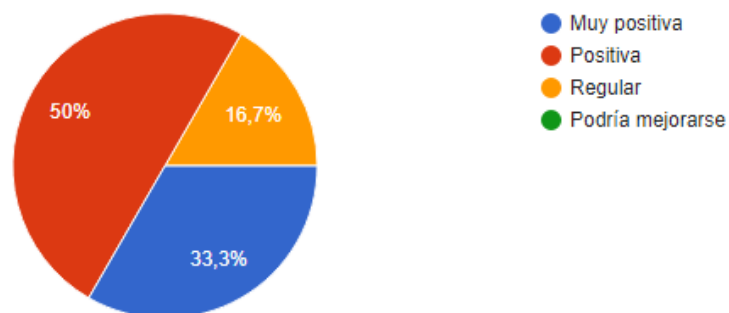
6. ¿Su empresa se encuentra ubicada en el Callao?

16 respuestas



7. ¿Si su empresa participa en el Programa ZIS Perú: cómo evalúa la interacción con el programa hasta ahora? (Elegir una opción)

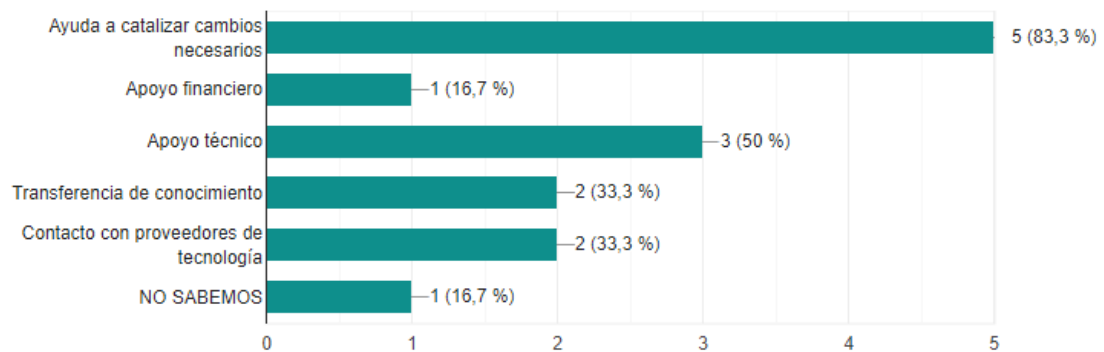
6 respuestas



8. ¿Qué es lo más positivo del programa? Elija las 3 principales respuestas



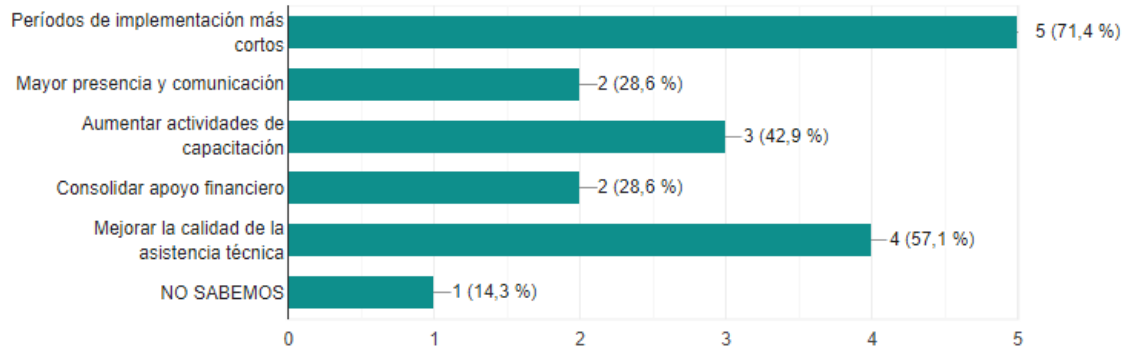
6 respuestas



9. ¿Qué podría mejorarse? Elija las 3 principales respuestas



7 respuestas



10. ¿Cómo cree que el proyecto podría contribuir a la mejora de la situación y desempeño ambiental en el Callao? Elija las 3 principales respuestas

9 respuestas

