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# Mid-term Evaluation and Learning Exercise of the Chile Self-Supply Renewable Energy Project (Financial Cooperation Component)

Project Evaluation and Learning Exercises for the  
Mitigation Action Facility

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Final Report

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## Preface

The Mitigation Action Facility is a joint initiative of the German Federal Ministry for Economic Affairs and Climate Action (BMWK), UK's Department for Energy Security and Net Zero, the Danish Ministry of Climate, Energy and Utilities (KEFM), the Danish Ministry of Foreign Affairs (MFA), the European Union and the Children's Investment Fund Foundation (CIFF). The Mitigation Action Facility evolved from the NAMA Facility, which was established in 2012. The Mitigation Action Facility's vision is to accelerate decarbonisation to keep temperature rises to below 1.5 degrees Celsius by financing measures that shift priority sectors in a country towards a sustainable, carbon-neutral pathway. All projects with an overall duration of more than three years are subject to a mid-term and a final evaluation and learning exercise.

The Technical Support Unit (TSU) functions as the secretariat of the Mitigation Action Facility. The TSU commissioned AMBERO and Oxford Policy Management to conduct mid-term and final Evaluation and Learning Exercises (ELEs). Each ELE is conducted using the same Theoretical Framework (FW), which involves the application of a document review, participatory workshops, and stakeholder interviews to collect evidence about projects' results and lessons analysed using a Theory-based approach centred on the use of contribution analysis reinforced by elements of process tracing.

This document presents the findings of the **mid-term ELE of the Financial Cooperation Component of the Chile Self-Supply Renewable Energy project**. The report has been reviewed by Luca Petrarulo (Technical Lead, project ELE team) and Elizabeth Gogoi (International Expert A, project ELE team). For further information, please contact [daponte@ambero.de](mailto:daponte@ambero.de).

## Executive summary

This document presents the findings of the **mid-term Evaluation and Learning Exercise (ELE) of the Financial Cooperation (FC) Component of the Chile Self-Supply Renewable Energy (SSRE) project**. The ELE was undertaken during the period of February – May 2023. In accordance with its Terms of Reference, this ELE sought to address the following questions:

- Is the project achieving its planned results?
- Is the project starting to trigger transformational change?
- What can be learnt from the project so far?

The Mitigation Action Facility Technical Support Unit (TSU) and the project team requested the ELE team to answer the following additional questions:

- Whether / How has the project (FC component) accommodated the advice that was provided to the TC component as part of its final ELE?
- How did the significant delay in the implementation of the project FC Component impact its Theory of Change as well as practical circumstances of implementation (both positive and negative impacts)?
- To which extent has the project FC component managed to adapt to the changing market conditions from the point of view of its offer (financial instruments) and technologies supported?
- What can / should be done to maintain the transformational change processes beyond the project lifetime (given that the project ends at the end of 2024)?

More information about these questions, the focus of this ELE and the methodology followed can be found in Section 1.2 and Section 2, respectively. The executive summary highlights the ELE's findings and key lessons. Please refer to Sections 3 and 4 for the detailed findings and conclusions and Section 5 for the full lessons and recommendations. **A Final ELE of the Technical Cooperation (TC) Component of the Chile SSRE project was conducted in late 2020-early 2021. The ELE report is available on the Mitigation Action Facility website.**

**In the early 2010s, 40% of Chile's energy mix came from renewable sources, although the country's natural resources and characteristics allowed for significant improvements in that.** The Chilean Government made important investments in installed capacity from large-scale renewables. Still, SMEs' installation of SSRE technologies was lagging, even though it presented an interesting opportunity. The Chile SSRE project proposal identified four main barriers preventing the uptake of SSRE technologies by Chilean SMEs: (i) financial and economic barriers; (ii) human capacity barriers; (iii) awareness barriers; and (iv) policy and regulatory barriers.

**The Chile SSRE project considered the execution of a series of actions and deliverables that would provide adequate conditions for SSRE technologies and markets to thrive and contribute to renewable energy generation.** The project would execute a series of actions to build technical awareness and capabilities in government, SSRE providers, and users, and create and consolidate SSRE markets that support the sectoral transformation.

**The implementation of the project is led by the Ministry of Energy (MoE), which has the political mandate for the Chilean Government to implement the National Energy Policy and promote the incorporation of renewable energy in the country's energy mix.** These actions would be executed through concurrent TC and FC Components, managed by GIZ and KfW respectively, which could complement and synergise. However, due to delays in implementing the FC Component, there was no overlap in the operation of the components.

**The current ELE focuses exclusively on the contribution that the execution of the FC Component has made to the overall Chile SSRE project. Intermediate outcomes resulting from TC activities and outputs were only revisited if FC Component activities or outputs could have contributed to them.** No work was made to review the activities or outputs of the TC Component, as the prior ELE already reviewed them. However, the synergy with which the Chile SSRE project was conceived meant that some of the intermediate outcomes resulting from TC Component activities or outputs could have changed with the execution of the FC Component.

The key findings and lessons of the mid-term ELE of the FC Component are presented below:

- **There is significant progress in the consolidation of an SSRE market in Chile. However, that progress has not happened evenly across all SSRE technologies.** Photovoltaic (PV) solutions have dominated due to lower demands in terms of execution of pre-investment studies, application to get licenses or permits, their “modular” nature, and the low levels of internal or external operations disruptions required for their installation. Other SSRE technologies that do not have these advantages have not seen similar progress.
- **There are also asymmetries in adopting SSRE technologies in some areas in Chile and by some organisation types and sizes.** Robust markets in and around the main Chilean cities make it easy and cheap for prospective SSRE users to design, implement, and maintain their systems. Remote areas or ones with smaller socioeconomic activity levels cannot maintain a local supplier base and will find it more expensive to design, install, and use their SSRE solutions.
- **The development and rollout of new financial instruments will need technical and administrative support in their early stages to be successful.** The Chile SSRE project's TC Component ended before the FC Component started. This has meant that the project team had to rely on their funding and abilities to support FC Component's initiatives. So far, this implied that the review of financial incentive applications suffered delays, as the MoE could not hire extra staff. Projects that focus on financial instruments to promote innovation or behavioural change should allocate some funds for support, either technical to help prepare projects for financing, or administrative if the calls for projects published surpass the submission expectations.
- **Allowing some flexibility to activities and tools to adapt to changing conditions can help maximise the impact of individual projects.** Projects supported by the Mitigation Action Facility will likely face changing or evolving conditions during their execution, and these changes may be externally or internally driven. More flexibility in the activities and tools could make projects more impactful and efficient. Increased flexibility could start from the framework agreements that govern the rest of the project's work. Less detailed general

agreements could improve flexibility and reduce the additional time and effort (including delays) that come with detailed contracts.

- **Projects and project partners stand to benefit significantly from lessons and recommendations made to their own or other projects but may need more encouragement and support from the TSU to adopt lessons and adapt their projects.** Evaluation and learning efforts provide the most value when the parties involved in the project read, reflect, and act upon them. The Chile SSRE local project partners mentioned they did not read the final version of the TC Component's ELE report prior to this new ELE and mentioned not having known about knowledge exchange spaces between projects facilitated by the Mitigation Action Facility. Considering that the Mitigation Action Facility has a Knowledge Management and Learning Strategy and a "Knowledge and Learning Hub" on its website with all ELE Reports, this suggests that additional efforts may be required by the TSU to communicate ELE lessons and recommendations to project teams and partners, as well as incentivise them to become more engaged in learning from their and other projects' ELEs.

*The most important recommendations made to the project team and TSU for the current and future projects are:*

- **Analyse the current state of the SSRE market and decide on priorities for the remainder of the Chile SSRE project.** Get the project team to review what it means for the SSRE project objectives, activities, and tools that PV technologies are far ahead of others and that a significant share of SSRE implementations occur in more advanced regions. To strengthen project ownership, it is important that such discussion involves the different project partners and the project Steering Committee. Based on those reviews, the project team should consider adapting their strategies and priorities for the last 1.5 years of the Chile SSRE project.
- **The project team and Partners should assess the technical and administrative support that the remaining actions of the FC Component will demand and work to ensure that they are adequately supported.** It has become clear in the Chile SSRE project that rolling out a new financial tool will need support at many levels to succeed, including technical and administrative ones. An assessment of the technical and administrative needs for the implementation of the FC Component's remaining funds and tools should be made, and any gaps identified should be solved, within or outside the project, before rolling out the next efforts.

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## List of abbreviations

AGCI	Chile's International Cooperation Agency
ASE	Sustainable Energy Agency
BMWK	German Federal Ministry for Economic Affairs and Climate Action
CER	Renewable Energies Centre
CORFO	Economic Development Agency of the Ministry of Economy
COVID-19	Corona Virus Disease 2019
EE	Energy Efficiency
ELE	Evaluation and Learning Exercise
ELEQ	Evaluation and Learning Exercise Question
EQ	Evaluation Question
ESCO	Energy Services Company
EUR	Euro
FC Component	Financial Cooperation Component
FW	Framework
GHG	Greenhouse Gases
GIZ	German Development Cooperation (Gesellschaft für Internationale Zusammenarbeit)
KfW	German Development Bank (Kreditanstalt für Wiederaufbau)
KII	Key Informant Interview
KMLS	Knowledge Management and Learning Strategy, Mitigation Action Facility
Logframe	Logical Framework
MoE	Chilean Ministry of Energy
M&E	Monitoring and Evaluation
MRV	Measurement, Reporting, and Verification
NAMA	Nationally Appropriate Mitigation Action
NDC	Nationally Determined Contributions

OECD DAC	Organisation for Economic Co-operation and Development's Development Assistance Committee
OPM	Oxford Policy Management
PV	Photovoltaic
QA	Quality Assurance
QC	Quality Control
RAG	Red Amber Green
RE	Renewable Energy
SC	Subcomponent
SEC	Superintendence for Electricity and Fuels
SME	Small and Medium Enterprise
SSRE	Self-Supply Renewable Energy
TC Component	Technical Cooperation Component
TCMF	Transformational Change Measurement Framework
ToC	Theory of Change
TS	Types of Sources
TSU	Technical Support Unit, Mitigation Action Facility

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# 1 Introduction

This document presents the findings of the **mid-term Evaluation and Learning Exercise (ELE of the FC Component of the Chile SSRE project)**. The ELE was undertaken during the period of February – May 2023.

## 1.1 Overview of the project

In 2013, GIZ (German Development Cooperation) and KfW (German Development Bank) prepared and submitted to the then NAMA Facility<sup>1</sup> a proposal for a **“Self-Supply Renewable Energy” project. Its objective is to support the SSRE technologies and markets in Chile through capacity building, regulatory reform and market development actions conducive to adopting SSRE systems in small and medium enterprises (SMEs)**. The proposal was developed with the leadership and collaboration from the Renewable Energies Centre (*Centro de Energías Renovables – CER*), which was then a part of CORFO (Economic Development Agency of the Ministry of Economy), the Ministry of Environment, Chile’s International Cooperation Agency (AGCI), GIZ, and KfW. The project was selected for implementation under the Mitigation Action Facility’s First Call for projects.

**The Chile SSRE project was not executed within the timeframes or in the way initially expected. The project’s execution started a couple of years after it was expected to, delays in approving and starting the FC Component meant it was unavailable to complement and support the Technical Cooperation (TC) Component and the closing down of CER meant that the responsibility for execution was divided between MoE and CORFO.** In the proposal, the project was expected to have started in March 2015 but only really started execution in 2017. The TC Component was implemented from 2017 to late 2020, while the FC Component only started execution in 2021, and it is due to end in December 2024. Changes in governmental structures that took place in 2018-2019 within Chile’s Government led to the closing down of CER which, together with a decision to remove AGCI from project execution responsibilities, meant that the execution and coordination structures for the Financial Component would be transferred to the Ministry of Energy (MoE) and CORFO. The Ministry, with its technical and policymaking focus would assume the execution of Subcomponents 1 (pre-feasibility studies) and 2 (feasibility studies), to build an SSRE project pipeline. For its part, CORFO would focus on Subcomponents 3 (supporting financial institutions) and 4 (development of a guarantee fund) to foster financial institution participation and support of SSRE projects. These institutional arrangement changes were formalised with Amendment 1 to the project.

**Project implementation is led by the MoE, which has the political mandate for the Chilean Government to implement the National Energy Policy and promote the incorporation of renewable energy in the country’s energy mix.** For implementing the TC Component, the MoE worked directly with GIZ as implementation organisation. To execute the planned activities, GIZ hired staff who remained on the project until the end of the TC Component implementation period and were assigned offices at the MoE. In addition, in 2020, a Steering Committee composed of representatives from the MoE, CORFO, GIZ and KfW was created. Its main objective was to provide a strategic view over both

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<sup>1</sup> The NAMA Facility changed its name to Mitigation Action Facility in 2023 and will be referred to with the current name throughout the report.

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components to ensure a successful implementation and coordination of the project activities. Nevertheless, due to the delays in implementing the FC Component, there was no overlap in the operation of both components.

**In late 2020/early 2021, a final ELE of the TC Component was carried out. Therefore, the current ELE focuses exclusively on the contribution that the execution of the FC Component has made to the overall Chile SSRE project. Intermediate outcomes resulting from TC Component activities and outputs were only revisited if the FC Component activities or outputs could have contributed to them.** No work was made to review the activities or outputs of the TC Component, as the prior ELE already reviewed them. However, the synergy with which the Chile SSRE project was conceived meant that some of the intermediate outcomes resulting from TC Component activities or outputs could have changed with the execution of the FC Component.

### **The problem**

**In the early 2010s, just 40% of Chile's energy mix came from renewable sources, although the country's natural resources and characteristics allowed for significant improvements in that.** The Chilean Government made important investments in installed capacity from large-scale renewables. Still, SMEs' installation of SSRE technologies was lagging, even though it presented an interesting opportunity. The Chile SSRE project proposal identified four main barriers preventing the uptake of SSRE technologies by Chilean SMEs: (i) financial and economic barriers; (ii) human capacity barriers; (iii) awareness barriers; and (iv) policy and regulatory barriers.

**The Chile SSRE project considered the execution of a series of actions and deliverables that would provide adequate conditions for SSRE technologies and markets to thrive and contribute to renewable energy generation.** The included actions would build technical awareness and capabilities in government, SSRE providers, and users. It would also develop or upgrade relevant regulations, support demonstration projects, and create a Monitoring and Evaluation (M&E) system to measure the SSRE adoption contributions to greenhouse gas (GHG) reductions. The project would also contribute to creating and rolling out financial mechanisms. Together, all these activities were to create and consolidate an SSRE market. These actions would be executed through concurrent TC and FC Components, led by GIZ and KfW, respectively, complementing each other.

### **The impact and outcomes of the project**

The overarching goal of the Chile SSRE project is stated in the proposal documents as “[t]he development of the self-supply renewable energy market in Chile is strengthened”. However, the team that conducted the ELE of the TC Component reframed that objective to more clearly link it to the priorities presented in multiple national strategies: **“The sustainable change in the energy mix of Chile is strengthened, bringing about significant environmental (e.g. reduction of GHG emissions and pollutants, potential improvement of waste management), economic (e.g. improvement of energy security) and social (e.g. creation of jobs) impacts”.**

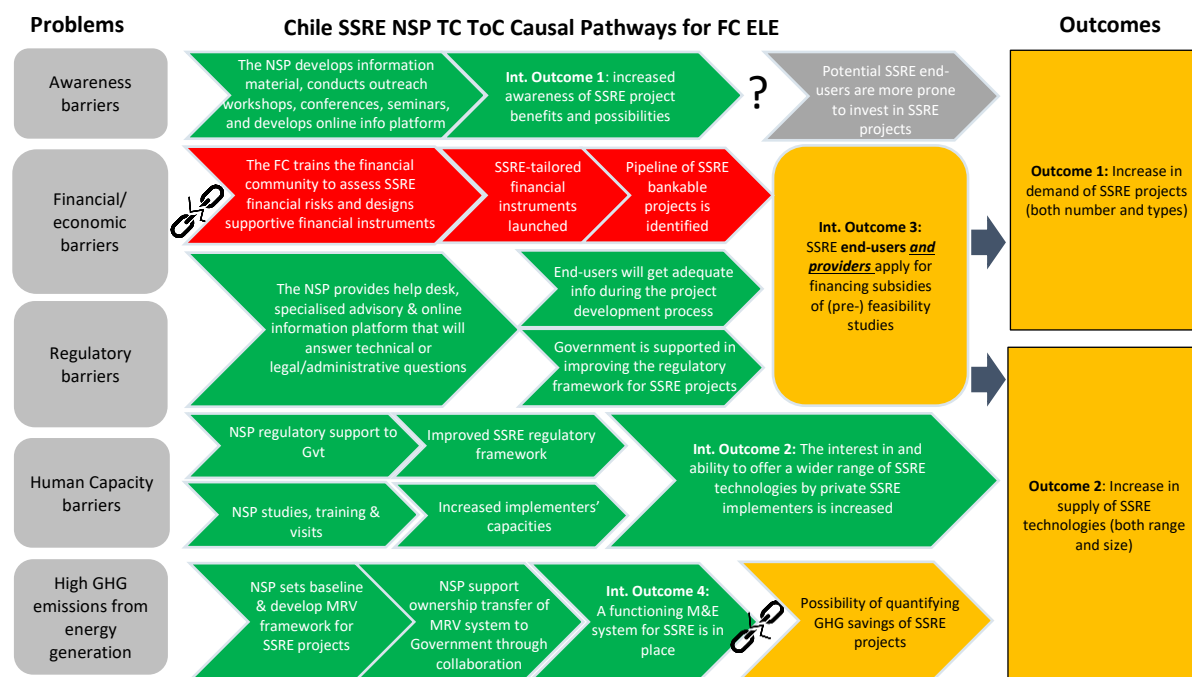
**The FC Component is expected to take forward the capabilities and regulations created by the TC Component and encourage broad adoption of SSRE technologies.** As detailed in the ELE report of the TC Component, the project was considered to have made significant contributions to the awareness and knowledge of SSRE of different types, along with some elements of regulation and policy that

were introduced or revised to enable the new technologies. Yet, the lack of financial resources for the incentives, or the support of funds to assist financial institutions in designing and providing financing tools for SSRE, meant that the project's implementation and impact had been compromised (at that point). The FC Component would have contributed to the larger-scale adoption of SSRE technologies.

### The causal pathways presented at the end of the ELE of the TC Component

The team that conducted the ELE for the TC Component prepared the causal pathway map presented in Figure 1 and assigned each link a colour based on a Red-Amber-Greed (RAG) rating (Good / Very Good = Green; Problems = Amber; Serious deficiencies = Red; Not enough info to rate = Grey). In general terms, the main conclusion of Figure 1 is that most actions that depended on the TC Component had been executed well. Still, those activities or results that required FC Component's contribution to progress were considered significant problems due to the delays.

**Figure 1. Causal Pathways of the Theory of Change of the Chile SSRE Project and the colours assigned to them by the ELE of the TC Component**



Source: ELE of the TC Component of the Chile SSRE Project

Since the ELE for the TC Component, the project has been considered to have four main causal pathways, each supporting the achievement of one of the project's intermediate outcomes:

- **Causal pathway supporting Intermediate Outcome 1:** If the project increases the outreach on the economic and technological feasibility of SSRE projects amongst relevant private and public decision-makers (Output 1-TC), then the general awareness of the market of SSRE projects' benefits and possibilities will be raised (Intermediate Outcome 1), the SSRE end-users will be more prone to invest in SSRE projects, and there will be an increase in the demand for SSRE projects (Outcome 1).
- **Causal pathway supporting Intermediate Outcome 2:** If the project builds capacities of relevant stakeholders through professional training, studies, and visits (Output 2-TC) and, at

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the same time, supports the Government in improving the regulatory framework related to SSRE, then the number of private companies that implement SSRE projects increases (Intermediate Outcome 2), the project assists them to perform basic and advanced steps in SSRE project development, and ultimately there will be an increase in the supply of SSRE technologies (Outcome 2).

- **Causal pathway supporting Intermediate Outcome 3:** If the project increases the amount of SSRE project preparations through appraisals and new business cases (Output 3-TC) and, at the same time, supports the Government to improve the regulatory framework related to SSRE and the FC Component supports the launch of SSRE-tailored financial instruments (Outputs-FC), then SSRE stakeholders apply for financing subsidies for SSRE projects (Intermediate Outcome 3) and there will be an increase in both the demand of SSRE projects (Outcome 1) and the supply of SSRE technologies (Outcome 2).
- **Causal pathway supporting Intermediate Outcome 4:** If the project supports the development of a robust and flexible Measurement, Reporting and Verification (MRV) system for SSRE projects (Output 4-TC) and it supports the ownership transfer of the MRV system to the Government and the testing of the MRV system on real SSRE projects (Intermediate Outcome 4), then the GHG mitigation and sustainable development co-benefits of the SSRE projects can be measured and observed, and the demonstration of the benefits strengthen the SSRE market (Outcome Statement).

## 1.2 Focus of the Evaluation and Learning Exercise

In accordance with its Terms of Reference, this ELE seeks to address the following General ELE Questions (ELEQs):

- Has the project been achieving its results?
- Has the project started to trigger transformational change?
- What has been learnt from the project so far?

The ELE also sought to answer four additional questions that Mitigation Action Facility Technical Support Unit (TSU) and the project team requested, which are presented below:

- How has the project (FC Component) accommodated the advice that was provided to the TC Component as part of its final ELE?
- How did the significant delay in the implementation of the project FC Component impact its Theory of Change as well as practical circumstances of implementation (both positive and negative impacts)?
- To which extent has the project FC Component managed to adapt to the changing market conditions from the point of view of its offer (financial instruments) and technologies supported?
- What can / should be done to maintain the transformational change processes beyond the project lifetime (given that the project ends at the end of 2024)?

The General and additional ELEQs presented above were broken down and operationalised into Specific ELEQs that were considered when reviewing documents or interviewing stakeholders that provided the main source of evidence for this report. In Table 1, the General and Specific ELEQs are mapped against the Organisation for Economic Co-operation and Development's Development

Assistance Committee’s (OECD DAC) evaluation criteria<sup>2</sup>, widely used as international standards for the evaluation of development interventions. Reference to the relevant report section where each ELEQ / evaluation criterion is treated is also given. Finally, the specific ELEQs were broken down further into sub-questions, which are included in the official ELE Matrix, approved by the TSU, and reported in Annex B.

**Table 1. General and Specific ELE Questions and their link to the ELE report sections**

General ELE Question	Specific ELE Question	Evaluation criteria (relevant ELE Report section)
<b>Is the project achieving its planned results?</b>	To what extent does the project address an identified need (by National and Local governments, SSRE Providers, SSRE Users and Financial Institutions)?	Relevance (Section 3.1)
	To what extent has the project been achieving intended intermediate outcomes (and unintended ones)?	Effectiveness (Section 3.2)
	To what extent is the relationship between inputs and outputs timely and to expected quality standards?	Efficiency (Section 3.3)
<b>Is the project starting to trigger transformational change?</b>	What evidence is there that the project will likely contribute to the intended impact in the ToC (incl. transformational change)?	Impact (Section 3.4)
	What is the likelihood that the outcomes will be sustained after the end of the project funding period?	Sustainability (Section 3.5)
<b>What has been learnt from the project so far?</b>	What key lessons can be learnt to the benefit of this or other projects funded by the Mitigation Action Facility in achieving their results?	Learning (Section 5.1)

### 1.2.1 The ELE Transformational Change Measurement Framework

Some words need to be spent on the concept of transformational change, which is included in the General and Specific ELEQs. The enabling of transformational change is one of the key aims of the Mitigation Action Facility and, therefore, of its projects. The Mitigation Action Facility defines transformational change as *“Catalytic change in systems and behaviours resulting from disruptive climate actions that enable actors to shift to carbon-neutral pathways”*<sup>3</sup>. The Mitigation Action Facility Theory of Change (ToC) explains how transformational change is expected through its outputs and outcome. The ToC is broad, and transformational change can be achieved through projects in different ways. Figure 2 illustrates three dimensions that interact and reinforce each other to produce project-induced transformational change. Each project will work on different elements of the three dimensions to define its pathway to or “recipe” for transformational change. A more detailed explanation of the ELEs’ Transformational Change Measurement Framework (TCMF), summarised in Figure 2, is presented in Annex A.

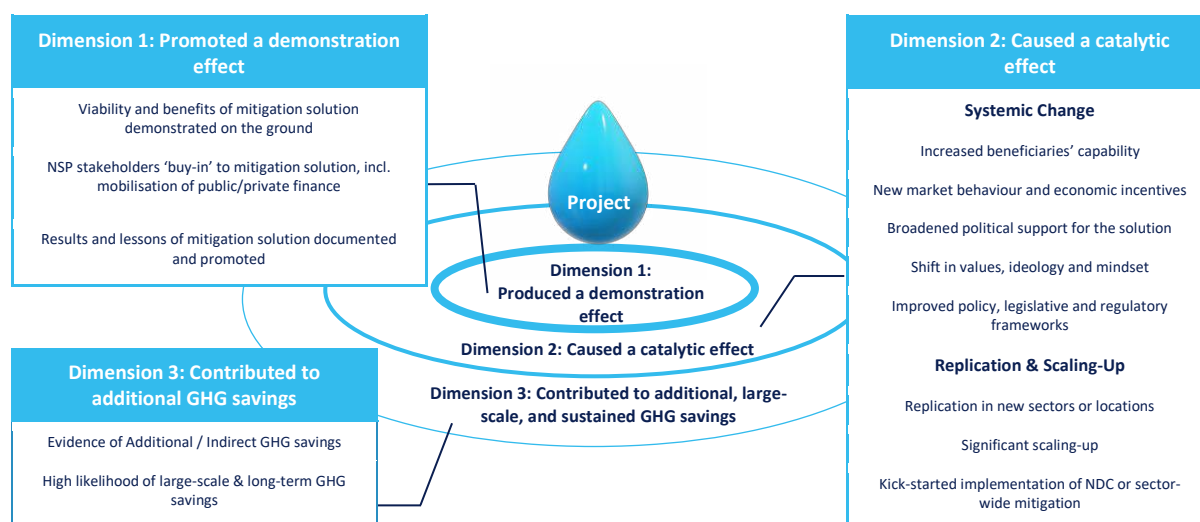
**The ELE used the TCMF to assess the project’s progress towards its impact in Section 3.4.** In particular, in the evidence gathered through the ELE, the evaluators have looked for “signals” of the

<sup>2</sup> Relevance, Effectiveness, Efficiency, Impact, Sustainability. The ELE team added a 6<sup>th</sup> criterion, namely Learning.

<sup>3</sup> [https://mitigation-action.org/wp-content/uploads/Mitigation-Action-Facility\\_TC-factsheet.pdf](https://mitigation-action.org/wp-content/uploads/Mitigation-Action-Facility_TC-factsheet.pdf)<https://www.nama-facility.org/concept-and-approach/transformational-change>

materialisation of the three dimensions and classified them as early, interim, and advanced signals according to the definitions in Table 2. Table 3 shows the minimum level of signals of each of the three transformational change dimensions that projects are expected to have achieved at their mid-line and end-line moments.

**Figure 2. ELE Transformational Change Measurement Framework**



**Table 2. Transformational change “signals” assessment by ELEs**

Signal level	Definitions
<b>No evidence</b>	Evidence suggests little to no progress is being made in line with the ToC causal pathways to Transformational Change.
<b>Early signals</b>	There is emerging evidence of the transformation related to the dimension, or the foundations for the transformation have been laid by the project. Still, no signals of the change are present.
<b>Interim signals</b>	Evidence shows some signals that the transformation related to the dimension is underway, and it is likely to continue.
<b>Advanced signals</b>	Evidence shows strong signals that the transformation related to the dimension is underway, and there is little doubt that it will continue.

**Table 3. Minimum expected signals of project-induced transformational change**

Dimension	Mid-point	End-point
<b>1: Promoted a demonstration effect</b>	Interim signals	Advanced signals
<b>2: Caused catalytic effect</b>	Early signals (of one or more of the types of possible changes)	Interim signals
<b>3: Contributed to additional GHG savings</b>	None	Early signals



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## 2 Methodological approach

The ELE entailed activities under four phases: Inception, fieldwork, analysis, and reporting.

**During the Inception Phase, the ELE team conducted a review of key project documentation, including the project Proposals (TC and FC Components), Annual and Semi-Annual Reports, the Amendment Requests, the report of the Final ELE for the TC Component, and other public documents (see the full list of documents reviewed in Annex C). Considering that a ToC diagram and a causal pathway map had already been produced during the Final ELE for the TC Component, the ELE team reviewed them. It assessed whether any changes or revisions were required, concluding that only a minor change was due to capture the contribution that the FC Component activities and outputs made to Outcome 2. Specifically, the project pipelines and financial instruments were found to improve SSRE supply conditions.** The updated version of the ToC has been submitted to the TSU, but it is not a public document. The ToC and the causal pathway map produced by the ELE of the TC were instrumental in helping this mid-term ELE of the FC Component to identify and focus its efforts.

The data from the document review, the ToC, and the ELE Terms of Reference served as a reference to **develop a tailored matrix for this ELE, including the ELEQs (Annex B) and hypotheses** to be tested during the fieldwork. At the same time, the ELE team worked on organising the fieldwork interviews. For that, **they applied a purposive sampling approach to the key informants according to their level of involvement with the project.** In this way, the ELE team grouped them into **three (3) general categories: (i) Project team**, i.e. members of the project partners and implementation organisation, the performance of whom is directly assessed by the ELE (in this case, KfW, MoE and CORFO); **(ii) Project stakeholders**, i.e. individuals who have actively supported one or more project activities (e.g. ASE, SEC); and **(iii) Third Parties**, which are a broad group that includes organisations or individuals who benefited from one or more project activities or offerings, as well as other organisations or individuals who did not benefit from project activities or offerings, but face similar conditions or challenges as those that benefitted from the programme. This approach helped the ELE team to test and triangulate the evidence and to assess its strength. Table 4 summarises the number of interviews and people interviewed by each sampling category. For a detailed list of the institutions and organisations interviewed, refer to Annex C.

**Table 4. Overview of the number of interviews and interviewees by sampling category**

	Project Team	Project Stakeholders	Third Parties	TOTAL
No. interviews	4	6	15	25
No. interviewees	27	7	19	53

**The Fieldwork Phase began with an ELE Kick-Off Workshop on 24th March 2023.** The workshop was conducted in a virtual setting and was attended by eight (8) participants from the project team (MoE, CORFO and KfW) and the ELE team. The workshop's purpose was to review, clarify and validate: (i) the purpose, scope, and expectations of the ELE and (ii) the project's ToC. During the workshop, after an introduction, a Q&A session on the ELE purpose and scope, and a discussion about the project team's expectations, the project team had the chance to present their understanding of the key elements of the project ToC. The presentation was followed by questions from the ELE team, including their point

of view on project ToC. **The key outcome of the Kick-Off Workshop was to revisit and re-validate the ToC diagram produced for the Final ELE of the TC Component and understand the current project team’s approach to the project, along with the activities, outputs, and outcomes achieved so far, setting a proper stage to start the interviews.**

The initial workshop was followed by **10 days of primary data collection using in-depth interviews with the project team and Key Informant Interviews (KIIs) with project stakeholders and third parties. The general ELE Interview Guides prepared during the inception phase were reviewed and tailored to the specific interviews according to the three interviewee groups.** The Guides followed the ELEQs, and the general structure was consistent among interviewees from the same sampling category. Still, the content and wording of the questions were tailored to capture key knowledge from specific informants, cover knowledge gaps, test hypotheses or triangulate specific information.

Further, an evaluation diary was used, where each evaluator noted down the main takeaways and questions daily. This allowed the three evaluators to exchange information on a real-time basis. **Following the intense period of interviews, although with a few key interviews left to be conducted, the ELE team prepared and executed an ELE Validation Workshop on 20th April,** in a hybrid meeting that saw Chilean Government officials (MoE, CORFO) participating in person, and KfW staff joining-in via videoconferencing. The main objectives of the Validation Workshop were to **review, discuss and validate the preliminary ELE findings, discuss a preliminary version of the contribution story (causal pathway map), and identify lessons learned.** The fruitful discussion on preliminary ELE findings allowed the ELE team to validate them in collaboration with the project team and identify and discuss recommendations as laid out in section 5.

The final part of the fieldwork moved the ELE team into the **Analysis Phase, whose steps are detailed in Table 5.**

**Table 5. Summary of the ELE analysis methodology**

Integrating Primary & Secondary Data	Evaluating Strength of Evidence	Draft Contribution Story
Tailor analytical tools	Assess the strength of evidence of common themes	Review and update contribution Stories for the different pathways presented in the report of the ELE of the TC Component, with the new data obtained through this ELE
Tidy up notes	Identify concurrent / alternative explanations in ToC causal pathways	Final QC / QA
Data mining and evidence mapping from interviews and docs along ELEQs	Agreement on the contribution of project vs context	
Extract positive and negative common themes for each ELEQ	Perform process tracing formal tests of causal pathways	
Consolidate and cross-check common themes	Develop figure with RAG rating of causal pathways	

Integrating Primary & Secondary Data	Evaluating Strength of Evidence	Draft Contribution Story
1st Quality Control (QC) / Quality Assurance (QA)		

Section 3 of this report uses the evidence and emerging themes discussed above to present the ELE team’s findings in terms of the performance of the project against the OECD DAC criteria (relevance, effectiveness, efficiency, impact, and sustainability) and (under the effectiveness criteria) its performance to achieve the ToC intermediate outcomes. Performance is summarised for each DAC criterion and/ or ToC intermediate outcome in the form of a RAG score: Green – good/ very good performance; Amber - some progress but problems also identified; Red - severe deficiencies in the performance. The same RAG rating was applied at the time of the ELE of the TC Component.

The ELE team cross-referenced each emerging theme with its sources to assess the strength of the evidence behind the emerging themes extracted from the interview notes or documents. Then, the team reviewed all the emerging themes again and rated the strength of the evidence behind each of them according to the scorecard in Table 6.

**Table 6. Scorecard for assessing the strength of evidence**

		Variety (number of types of sources (TS) reporting the evidence)		
		1 TS only	2 TSs	3 TSs
Quantity (number of sources reporting the evidence)	1 interview only	Single source		
	2 interviews	Weak evidence	Medium evidence	
	3+ interviews	Medium evidence	Strong evidence	Very strong evidence

**The final ELE phase is the Reporting Phase.** During this phase, the ELE team compiled this report, which has undergone internal quality assurance, and one round of comments from MoE, CORFO and KFW as members of the project team, the Mitigation Action Facility TSU, and its Board.

## 2.1 Limitations

**The Mid-Term ELE of the Chile SSRE FC Component was one of the first ELEs to be conducted with international experts flying into the country and having in-person interviews with stakeholders after COVID-19 travel restrictions were lifted.** Having an in-person visit was useful as this built trust with the project team and allowed the evaluators to read the interviewees’ body language. However, it was not possible to hold all interviews in person as many project beneficiaries were spread out across Chile, making it impossible to visit a good number of them within the available 10 days of fieldwork. Considering the importance of these beneficiaries’ contributions, the ELE team resorted to making some virtual interviews to connect with stakeholders outside of Chile’s capital, Santiago.

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**The ELE team tried to interview Chilean public and private financial institutions to get information and feedback about their take on SSRE but could not schedule a meeting.** As discussed in sections 3.2 and 3.3, the FC Component’s activities aimed at supporting financial institutions and implementing a guarantee scheme are scheduled to start in the second half of 2023 or in 2024. The ELE team reached out to financial institutions’ staff for interviews to hear their point of view about SSRE financing and the contributions of the proposed financial tools. The ELE team tried to contact bank staff suggested by the project partners and use personal contacts to secure meetings. Some of them did not reply, while others scheduled an interview but then asked to postpone it, and it was not possible to find an additional timeslot that suited them and the ELE team during the (already crowded) fieldwork period or in the following days. The ELE team found it more difficult to schedule a meeting with them than with other interviewees suggested by the project partners. The ELE team attributes this added difficulty to the fact that these financial institutions did not have a “formal” link with the project as other interviewees did, a claim that is based on the similar difficulties found by ELE teams when contacting and trying to arrange interviews with other stakeholders that have not directly linked to the project. The ELE team’s main reason to try and interview these third parties is to have input from a “control” group, that would better prove whether the project is responsible for the transformation or if other trends or drivers have a larger impact.

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## 3 Key Findings

In this section, the main findings of the ELE are presented following the ELE Questions in Table 1. At the beginning of each section, a RAG rating of the strength of the project’s contribution story to the ToC and the OECD DAC criteria is included, following the scale: Good / Very good = Green; Problems = Amber; Serious deficiencies = Red; Not enough info to rate = Grey.

### 3.1 Relevance of the project

<b>Relevance</b>	<b>1. To what extent does the project address an identified need (by National and Local governments, SSRE Providers, SSRE Users and Financial Institutions)?</b>
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**The Final ELE for the TC Component concluded that the Chile SSRE project had a high relevance for the Chilean Government, SSRE providers, and SSRE users (adopters).** The ELE team mentioned having seen a strong alignment of the project with the Government’s priorities and goals. It also confirmed that there were multiple opportunities for solutions of under 300 KW for commercial uses, and many of the existing technical and awareness barriers were already starting to be addressed by the TC Component.

**The same report also mentioned that the delays of the FC Component had prevented further impact and progress from the project.** For instance, the FC Component's delays did not allow for alternative financing options to be considered or pursued during the lifetime of the TC Component. Given that lack of financing was considered a barrier by many interviewees at that time, there was an expectation that the arrival of the FC Component could “unleash” SSRE adoption.

**Despite Chile’s recent political upheavals, commitment to sustainability and renewable energy remains high, with new goals and technological alternatives being adopted in recent months.** In early 2022, a new administration took office with a profound social agenda, seeking to improve inclusion, diversity and well-being, particularly after 2019’s social demonstrations and the COVID-19 pandemic. With regards to sustainability and climate change, the new administration’s efforts are building upon prior efforts: a 2022-2026 Energy Agenda was adopted to increase distributed generation to 500MW; Laws to regulate energy efficiency, energy storage and electromobility, and solid biofuels have been passed in recent years. Furthermore, a National Green Hydrogen Strategy was adopted in 2020.

**The ELE established progress in demonstrating SSRE technologies and consolidating markets around them. Still, most progress has occurred in the most populated areas and with PV SSRE solutions.** The MoE and the Superintendence for Electricity and Fuels (SEC, from its Spanish acronym) have revised existing or introduced new regulations related to SSRE solutions or their connection to traditional grids as the project and other sister government initiatives have advanced. Progress in technology demonstration and market consolidation has focused on PV solutions and has clustered around Santiago and other areas of high socioeconomic activity. Small hydro, wind power, biomass or heat pump solutions have plant-scale requirements or limitations and require more ex-ante studies or licences than PV solutions. This fact makes them less immediately attractive for SSRE providers

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compared to the more-established PV options. Less populated or less economically active areas find it more difficult to sustain local SSRE providers. This is particularly troublesome in remote areas, as high transport costs for people, goods, and equipment translate in more expensive technological assessments for users that are relatively less wealthy than urban ones.

**There is a growing commitment from Chilean enterprises to sustainability. Installing a PV SSRE solution is among the most popular actions; something the project has contributed to.** The interviews held by the ELE team with SSRE providers and users showed an increasing interest and commitment of Chilean enterprises to adopting technologies and practices that contribute to sustainability, although it is important to caution against some confirmation bias existing in this claim, given that our third-party interviewees were those that had benefitted in some way of the project's support to install their own SSRE solutions. Still, there seemed to be a broad consensus on the need for companies to "become greener". Based on the interviewee sample, enterprises see sustainability more as a value-added than a cost-saving feature, although they welcome the financial benefits. The financial support the MoE provided with FC Component's funding led many companies to adopt SSRE solutions, thereby reducing the expense they were already considering for the changeover.

**Despite the growing favourable track record of PV initiatives, financial institutions still consider SSRE projects with traditional creditworthiness assessments that focus on the financial capabilities of borrowers, rather than the benefits of the project itself. Financial products offered also follow traditional construction or consumption loans.** Interviewees stated that BancoEstado, a public-sector Bank, is the only financial institution with a dedicated line to support SSRE developments. This was enabled by BancoEstado signing an agreement with the "*Agencia de Sostenibilidad Energética*" (ASE) to leverage its technical expertise for reviewing and validating the projects to be financed. An interviewee mentioned that another bank was starting to create dedicated SSRE financing, in which projects designed and implemented by some "registered" or "certified" providers could get preferential treatment. Still, the main options for SSRE providers and potential users to finance SSRE projects are the traditional "construction" (with long tenors and low-interest rates) or consumption loans (with shorter tenors and higher rates). SSRE users able to incorporate SSRE in large construction projects can benefit from the former. For established companies and facilities, it is likely that a "consumption loan" is the only available option.

**The guarantee/coverage schemes being considered as Subcomponent 4 of the Project's FC Component may not introduce significant enough changes to drive up adoption of SSRE technologies, particularly for smaller companies.** Interviewees mentioned that many of the larger companies had already implemented SSRE solutions in their facilities, and that they had internal funds or financial products that they could tap into with relative ease. The group of potential users that would benefit from alternative financial instruments to increase SSRE adoption are smaller companies. In fact, for them loans are more expensive (higher interest rates) and "distract" a proportionately larger share of resources (than larger companies) to apply and get the loan. However, many interviewees mentioned the preference of small and medium enterprises for leasing schemes, as these do not reduce their credit limits as traditional loans do. For many interviewees, financing for SSRE should be considered differently than traditional loan schemes, considering that the savings achieved from the SSRE option recoup the investments made in their design, installation and maintenance. This "savings-pay-for-investment" scheme, similar to the Energy Services Company (ESCO) business model, has been at catalyser of the conversion of large companies to SSRE in Chile.

According to interviewees, it could be used more to promote SSRE adoption by smaller companies if a regulatory reform was introduced. Interviewees mentioned that Chile does not currently have full ESCO schemes, as Chilean regulations do not allow the suppliers to operate as utility companies. Instead, the ESCO-like companies operate through private supply contracts, which have less enforcement means to recover credits from non-paying customers. Those same interviewees pointed to Brazil or Germany as countries that have a dedicated regulatory framework for ESCOs, which has allowed them to invest more and have a broader user base.

**Recent local and global upheaval may have temporarily reduced the priority of Chilean public and private sectors’ environmental agendas. Still, with life returning to more regular ways, sustainability is regaining its priority status. Rising international energy prices are just starting to impact Chile’s energy bills, which could fuel further interest in SSRE.** Besides the social and economic upheaval, high logistics costs and inflation in 2022 and 2023 meant that SSRE installations took more time or costed more, making them a “worse deal”- or even a “no-deal”- than expected. Energy prices coming from the electric grid are set by the government, and only in early 2023 they started to rise in response to the international energy prices. This increase is expected to add to the interest of companies to generate part of the energy they use.

**Based on these considerations, the ELE team has assigned a RAG rating of green to the relevance of the Chile SSRE project.** It has already contributed to reducing gaps in adopting SSRE solutions in wealthier and more populated areas across Chile. It could still make more contributions to companies of all sizes, regions, and sectors that still need additional support, helping meet and exceed Chile’s NDC commitments.

### 3.2 Effectiveness of the project

<b>Effectiveness</b>	<b>2. To what extent has the project been achieving intended intermediate outcomes (and unintended ones)?</b>
	Intermediate Outcome 1: increased awareness of SSRE project benefits and possibilities
	Intermediate Outcome 2: The interest in and ability to offer a wider range of SSRE technologies by private SSRE implementers is increased
	Intermediate Outcome 3: SSRE end-users and providers apply for financing subsidies of (pre-) feasibility studies
	Intermediate Outcome 4: A functioning M&E system for SSRE is in place

**The TC Component’s ELE gave a green RAG rate to Intermediate Outcomes 1, 2 and 4, acknowledging that significant progress was made on regulations, technical capabilities and broad awareness of the technologies and their uses, which was crucial to supporting wide and quick SSRE adoption. However, the project itself had limited hands-on experience in adopting those technologies.** In relation to Intermediate Outcome 1, the ELE team considered that extensive work had been carried out to raise awareness of SSRE solutions. Evidence of the project’s contribution to Intermediate Outcome 1 was found across multiple national stakeholders. For Intermediate Outcome 2, the TC Component ELE team highlighted the prolific work of the TC Component in developing support tools and technical studies, as well as in delivering training, good practice guidance, site visits and international study tours to Europe, all of which had created a technical base for SSRE adoption.

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Intermediate Outcome 4's green RAG rating rested on the high level of satisfaction of the MoE with the M&E system developed by the GIZ as implementation organisation and transferred to the Ministry's staff.

The Focus of this ELE were the activities, outputs and outcomes of the Chile SSRE FC Component. No TC Component's activities or outputs were reviewed, but **all intermediate outcomes were re-evaluated to determine whether the FC Component implementation has introduced elements that could justify changing the rating given in the earlier ELE.**

### **3.2.1 Intermediate Outcome 1: Increased awareness of SSRE project benefits and possibilities**

**According to one interviewee, close to 17,000 registered SSRE installations in Chile generate close to 17 MW. Between 2014 and 2019, registrations of SSRE solutions roughly doubled every year. That trend slowed down since 2020 due to the pandemic and possible curbing of the demand.** Interest started to be driven by public sector efforts but, in recent years, the private sector has driven the implementation of SSRE solutions, particularly PV generators. PV installations had roughly doubled every year between 2014 and 2019. This slowed down in 2020 and 2021 due to the pandemic, but the expectation of the authorities is that installations will pick up again, perhaps even reaching the same levels seen pre-2020.

**The increasing number of installations and the more consolidated SSRE markets with more visible providers, and an increased number of installations and beneficiaries, have contributed to raising awareness and knowledge of SSRE solutions.** Third-party ELE interviewees, which included both SSRE providers and SSRE users, mentioned that they had seen significant progress in the types of inquiries they receive about SSRE (PV) solutions: people calling them to get information on installations and options were employing more technical terms and requesting more details, reflecting their increased knowledge about these technologies.

**The FC Component and other sister SSRE initiatives have incentivised the preparation of about 1,300 SSRE projects.** Public sector interviewees mentioned that around 1,300 project proposals were submitted to calls for projects for SSRE incentives. The project, under its Subcomponent (SC) 2's "*Ponle Energía a Tu Empresa*" (Energise your enterprise) initiative, attracted ca. 600 proposals between its two calls). The sister "*Ponle Energía a tu Pyme*" (Energise your SME) initiative, which was carried out with public funding outside the Chile SSRE project, received ca. 700 submissions. Many of those submissions were not selected for support, but still, the sheer number of proposals serves to demonstrate that there was increased interest and capability for users and providers to pursue SSRE projects.

Because of this new evidence that highlights the growing interest of private sector stakeholders in SSRE solutions, the ELE team has considered that **Intermediate Outcome 1 should maintain the green RAG status it had been given during the ELE of the TC Component.**



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### 3.2.2 Intermediate Outcome 2: The interest in and ability to offer a wider range of SSRE technologies by private SSRE implementers is increased

**Despite the provision of guidelines for different types of SSRE technologies and having held open calls to provide financial incentives for different SSRE technologies, PV solutions have attracted most of the attention (and funds) for implementation.** The TC Component of the Chile SSRE project worked with the government, SSRE providers, and even some users to develop guides, price indices, and case studies for different types of SSRE technologies, with these documents being published on public websites like the 4e website (<https://4echile.cl/proyectos/nama/>). However, the majority of new SSRE projects within and outside the Chile SSRE project have been opting for PV solutions.

**PV solutions have features that make them easier to pursue than other SSRE technologies.** PV solutions do not require high upfront investments in studies or licences like mini-hydro, geothermal, or wind generation facilities. They can adapt to different scales of generation with relative ease, serving clients whose consumption would be too small for efficient biomass, geothermal or other SSRE solutions. PV installations can also flexibly support additional power as required, with the only constraint to it being the area available for the PV panels. Their installation requires no or small additional costs and has little to no operational risk, as the installation is made on existing rooftops with no disruption to operations. Without external support to mitigate the higher design or implementations cost or risks from other SSRE options, they may not be seriously considered by public and private potential users.

**PV solutions do not require separate funding for pre-investment studies, but other SSRE solutions do.** Predominance of PV solutions mean little demand for pre-investment funding. Providers of these solutions usually include the cost of the design within the final price. Considering that most of the private sector's interest has focused on this type of solutions, it resulted in small demand for the FC Component's SC 1 (pre-investment studies). However, the funds in that subcomponent could contribute to facilitating the implementation of other technologies.

**The SSRE solutions and maintenance are not evenly offered across all Chilean regions.** During the interviews, the ELE team learned that finding a provider, getting a good deal, or even finding support for PV solutions in Santiago or other high-socioeconomic activity areas was fairly easy, adding to the appeal of the SSRE solutions. But local SSRE suppliers and maintainers are scarce in other regions with smaller populations or economies, and getting an SSRE provider to visit the site, design, and install a solution (even a PV one) can be expensive and risky if the technology installed cannot be operated or serviced properly.

**Not all SSRE solutions can be used for any type of conditions: the environmental, operational, or logistic conditions of a place may lead to some SSRE solutions being more effective for them, even if they are not the least expensive.** The diverse conditions of different areas may lead to some SSRE options being more appropriate than others. However, if these technologies have higher pre-investment or investment requirements, potential adopters may not consider them. Having some type

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of public sector-funded advice or studies, such as the “*Explorador Solar*”<sup>4</sup> for PV, could help reduce the potential adopters’ opportunity cost to explore a wider range of SSRE technologies.

**It is not enough to install a given technology: it must be adequately operated and maintained for the long run.** Multiple interviewees referred to Chile’s bad experience with solar water heating systems in residential buildings: construction companies sourced and installed them in compliance with public policies but failed to nurture providers’ capabilities to maintain and service them. The result was that many of those systems do not operate today. Ensuring that SSRE solutions get adequate support can be as or more important for SSRE users than installation costs or risks if they are to commit to that. The almost maintenance-free condition of PV panels adds to its preference over technologies, such as wind, mini-hydro and geothermal SSRE, all of which require larger development periods, special permits in some cases, and have higher running costs to consider.

**The high level of adoption of PV technologies and the consolidation of their market make the Chile SSRE project eligible to keep the green RAG rating that Intermediate Outcome 2 was given at the end of the TC Component ELE.** However, the challenges other SSRE technologies face deserve a closer analysis and consideration for future efforts under or beyond the project’s lifetime. There could be a desire or drive to promote other SSRE technologies just to meet the project’s expected implementation of “multiple” SSRE technologies. However, this could lead to problems such as calls for projects with very low participation rates, subsequent issues with solutions not working properly, or dissatisfied users who consider that the projects caused too much disruption or did not deliver enough benefits for the commitment made by them. The best option would be developing a set of decision-support tools and/or financial incentives to help other SSRE technologies develop for the sectors, locations, or contexts where they are the most appropriate.

### **3.2.3 Intermediate Outcome 3: SSRE end-users and providers apply for financing subsidies of (pre-) feasibility studies**

**The “*Ponle Energía a tu Empresa*” programme allowed companies interested in SSRE (PV) solutions to prioritise and execute investments they had been considering for some time before the calls.** The “*Ponle Energía a tu Empresa*” programme is the way through which SC 2 – *Feasibility Studies* of the FC Component has been executed. At the time of this ELE, the MoE, as its implementer, had issued two calls for projects, one in 2021 and one in 2023. Projects submitted under these calls were assessed under nationally-defined guidelines and conditions (which differed between the first and second calls). Projects selected for implementation benefited from a partial reimbursement of the cost of their SSRE solution as budgeted in the proposal submitted. Most of the beneficiaries interviewed for this ELE, which corresponded to the first call, mentioned that they had previously considered one or more types of sustainability interventions in their businesses and that the opening of the call (with its promise of financial support) had made them prioritise and pursue SSRE solutions.

**Financing may not be such a strong determinant or enabler for SSRE adoption.** Across the project Proposal, the Annual Reports, the ELE of the TC Component, and even many interviews for this ELE, there seemed to be a great expectation that new or improved financial instruments could increase

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<sup>4</sup> The Explorador Solar is a web-based service in which prospective PV users and installers can learn what are the solar irradiation levels and other meteorological indicators about their locations and use that information as inputs to estimate PV generation potential. It is available at <https://solar.minenergia.cl/inicio>.

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the adoption of SSRE technologies. However, most of the Third Parties interviewed for this ELE, from providers and users, mentioned that they had used no financing for the implementation. In those cases where financing was mentioned, a preference was implied for leasing schemes that do not affect the leaser's borrowing envelope: a leasing is an off-balance operation that does not add to the leaser's (i.e. the borrower's) total liabilities. Perhaps the only case in which a clear relationship between financing and increased SSRE adoption was established in the interviews was when it applied to SSRE providers, as having increased access to financing beyond their traditionally established "borrowing constraints" would enable them to increase the number of simultaneous SSRE implementations they could undertake.

**There is ample evidence in Chile and abroad of the benefits of ESCO-type schemes, providing new technologies at no extra cost (and even some savings) to the user.** Under ESCO schemes, private investors, with support or coordination from the SSRE Provider, create an investment vehicle that buys and installs the SSRE equipment and get their payback from replacing the traditional electric utility bill with an ESCO bill. The bill that the user gets usually has a discount from the traditional electric bill. Still, the payment is enough to cover the investors' capital and interest and any additional energy that needs to be obtained from the grid. The ELE team learned that this type of arrangement is used in Chile. Still, it lacks the strength it may have in other countries because, in Chile, the ESCO scheme is just "another contract between private parties", a condition that may not provide enough confidence to potential investors that they will be able to get timely payments, a benefit that some utility companies have to enforce late or no payments by users. A tailored regulatory framework could improve opportunities for SSRE adoption with non-traditional financing sources.

**The guarantee scheme and the support to financial institutions were still being defined at the time of this ELE but could benefit from a clearer focus on what the Chile SSRE project wants to achieve with them.** At the time of this ELE, *SC 3 – Support to Financial Institutions* and *SC 4 – Guarantee Scheme* of the FC Component were not yet operational, making it impossible to evaluate their effectiveness. The ELE team tried, however, to gauge to what extent those SCs served a need of the prospective clients and/or how they would contribute to large-scale adoption of SSRE, paying particular attention to SSRE technologies, regions or types of organisations that depend on the incentive or the financial tool to do the switch. Interviewees did not seem too confident that a guarantee scheme like the one proposed could make a great difference in encouraging SSRE adoption by smaller or more resource-constrained companies, with options like ESCO schemes seen as more viable or appropriate solutions. None of the users interviewed used financing and did not seem to be interested in loans, but rather in leasing schemes. Some SSRE providers mentioned that, for most users, changing from grid energy to SSRE solutions is not a priority and will seldom make the change without incentives (subsidies), such as the one provided by "*Ponle Energía a tu Empresa*" scheme. Other interviewees mentioned that the guarantee scheme considered would likely add to the paperwork and time required to apply and get a loan, which would discourage small enterprises. Finally, some interviewees mentioned that guarantee schemes do not create demand, but rather help existing demand to become actual transactions. Therefore, and based on the expectations of the interviewees, a guarantee/coverage scheme alone would likely not help incentivise SSRE adoption by small enterprises or installations of non-PV SSRE technologies.

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Concerning SC 3, the ELE team reached out to financial institution staff to learn about their needs and concerns and their expectations about the project's support, but we were unable to make the interview during the fieldwork period or in the days after it (see Section 2.1).

**The ELE team decided to keep the amber RAG rating assigned to Intermediate Outcome 3 by the TC Component ELE.** "*Ponle Energía a tu Empresa*" has effectively mobilised SSRE providers and users to adopt these solutions. However, there are still some question marks hanging over the contribution that guarantees or the support to financial institutions will drive SSRE adoption to increase.

### **3.2.4 Intermediate Outcome 4: A functioning M&E system for SSRE is in place**

**The Chilean Government scheduled the first formal use of the M&E system developed by the TC Component in 2024. It is considering to use data from "*Ponle Energía a tu Empresa*" programme for the exercise.** The MoE required all applicants of the programme's 2021 and 2023 calls for projects to provide the information required to measure the GHG reductions achieved with their respective solutions. The information of those selected as beneficiaries will be used as model inputs to estimate overall savings.

**At the time of the ELE, it was unclear how GHG reduction benefits from the Chile SSRE project's Subcomponents 3 and 4 or the contributions from other public or private SSRE support projects would be collected, reported and verified.** Since the Chile SSRE project's SCs 3 (support to financial institutions) and 4 (guarantee scheme) are expected to start execution during 2023 and 2024, it does not seem likely that there will be GHG savings to report before the end of the project (December 2024). However, with over 17,000 registered SSRE implementations at SEC, the GHG emissions savings in Chile linked to SSRE adoption go beyond those directly supported by the Chile SSRE project. If the M&E system's rollout goes according to plans, the final ELE for the FC Component will be able to assess the effectiveness of the M&E system and, to some extent, of the SSRE implementations supported by the project or public and private SSRE projects.

**SSRE systems, particularly those that rely on IT management systems, provide information about the energy generated and/or consumed that can later be easily used to estimate GHG emissions reductions.** SSRE users mentioned that their SSRE (mostly PV) systems come with dashboards or logs that provide energy generation and use statistics. Even though the MoE will not use this data for its M&E system, the fact that SSRE users can easily generate data or reports to calculate or validate the GHG emissions savings is very important. This also means that the effort to collect and process data of SSRE generation and benefits from the ca. 17,000 registered SSRE installations may be easier and could resort to self-reporting rather than large-scale (and expensive) surveys.

**Due to the fact that a first formal application of the M&E system has not been made and there are some questions to be answered in relation to the inclusion of SSRE adoption from other FC Subcomponents or other SSRE implementations, the ELE team decided to change Intermediate Outcome 4 to a rating of grey, which means that there is currently not enough data or evidence to gauge the effectiveness of the M&E system.**

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### 3.2.5 How did external factors impact the project's effectiveness?

**The Chile SSRE project's Theory of Change has remained valid despite its long preparation and execution periods.** Most stakeholders interviewed in this ELE agreed that the context for SSRE has significantly improved over the last 10 years. Some of that progress resulted from the Chile SSRE project, with other contributions from other sources. Public-sector programmes, a strengthened global climate effort and institutional framework, and the growing interest and commitment of the private sector to sustainability helped raise awareness of the technologies, attract investment, and build markets. Although outside efforts have helped drive the effort, the same interviewees mentioned that there is room for improvement, for example by targeting efforts to specific regions, SSRE technologies, or smaller, less affluent or more vulnerable stakeholders.

**The project's execution was also affected by Chile's social unrest, the economic slowdown resulting from COVID-19 lockdown measures, and 2021 and 2022's global supply chain disruptions.** Chile's social unrest and the economic slump resulting from lockdown measures adopted during the COVID-19 pandemic meant that many public and private enterprises were forced to review and reallocate funds they had earmarked for sustainability investments for social causes or raw company survival. For the beneficiaries of the 2021 "*Ponle Energía a tu Empresa*" call, supply chain disruptions meant that the projects took longer and costed more than expected, reducing the estimated savings from the transition to SSREs. A few of these beneficiaries openly expressed not wanting to participate in future calls as they considered the incentives' administrative requirements or costs to be too high for the actual benefit obtained. Still, none of the interviewees considered their projects to have been a failure, remaining interested in and committed to the technologies. Many even mentioned that they looked forward to scaling up their installations or implementing SSREs in other facilities or companies.

## 3.3 The efficiency of the project

### Efficiency

3. To what extent is the relationship between inputs and outputs timely and to expected quality standards?

**The report of the final ELE for the TC Component concluded that GIZ's support and advisory service was perceived as very professional and efficient. The project's outputs (services and products) were highly valued in timeliness, coordination, relevance, and quality.** All interactions between GIZ as the implementation organisation of the TC Component and the Mitigation Action Facility TSU were reported as well coordinated and planned through a high-level steering committee that involved the MoE and other stakeholders.

**However, the same report raised the concern that the change of Chile SSRE project leadership from GIZ to KfW could cause disruptions and discontinuities in the earlier efforts if a proper handover was not carried out.** Furthermore, it was pointed out that, because of the short overlap between the two components, the TC Component would not be able to cover any outstanding requests for assistance as of late 2020, which already in the initial project proposal was perceived as a risk for the success of the project.

**In terms of the FC Component's governance, the TC Component ELE reported potential coordination challenges and conflicting expectations regarding the delivery timeframe of each implementation**

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**party's sub-components (MoE and CORFO).** For instance, while the MoE wanted to advance quickly to provide the project subsidies (SC 2) in 2020, CORFO could not proceed so fast with its SCs 3 and 4 then.

**The results of the first call for subsidies made in 2021 by the MoE (SC 2) showed a high demand for implementing PV projects.** Out of the 290 applications, the 41 awarded projects represented 4 MW of installed capacity, 3.6 MW (90%) were for PV and 0.4 MW (10%) for solar thermal and air source heat pumps. In terms selected technologies, 36 awarded projects were for on-grid PV (with 2 of them having backup battery energy storage systems), 2 off-grid PV, 2 air source heat pumps, and 1 solar thermal. The agricultural sector had the largest share of projects (16) followed by industry (8), services (7), commerce (5) and tourism (4). Regarding the size of the companies who were the beneficiaries of the call, 12 were large, 5 medium, 12 small, and 12 micro enterprises. The strong interest in PV technology in these calls was one of the main signs that the “playing field” between SSRE solutions was not even due to differences in requirements and implementation risks, among others.

**Seeking to compensate for PV's strengths and maturity, the second call for subsidies in 2022-2023 increased incentives for other SSRE technologies in terms of premium co-financing and some flexibilities compared to the requirements of the initial call.** According to the preliminary results of the second call informed by the MoE, 60% of the 150 applications are hybrid SSRE PV projects with battery storage. The demonstrative impact of deploying storage technologies is very much in line with the recently published Storage and Electromobility Law 21,505 promulgated in November 2022.

**Calls for subsidies have been well received by the market, and, in general, beneficiaries are OK with the documentation required to participate in the Calls. However, they seemed less happy with the delays in the evaluation of proposals and the payment of the incentive at the end.** From an efficiency perspective, several beneficiaries mentioned that, in general terms, the interactions with the MoE took months, and those long times, compounded by the high inflation and logistics costs of 2021 and 2022, resulted in diminished or no financial benefit from the programme. The ELE Team understands that these comments include an important element of subjectivity, but also considers important to learn and understand that incentive schemes, particularly ones that seek to be used as demonstration to encourage further adoption of a practice or technology, should not end with the beneficiaries feeling let down. The dissatisfaction of early adopters may discourage companies less committed to sustainability, and SSRE in particular, to adopt the technology.

**The absence of the TC Component to support the execution of the FC Component has manifested through delays in reviewing the incentives requests under SC 2 and in preparing and executing SCs 3 and 4.** According to the MoE, there were not enough human resources (nor the possibility to use funding available from the project to increase human resources) to support the co-financing calls, and internal units had to adapt their normal workload to assist, causing delays in the process of evaluation, revision and payments of the subsidies. Both the MoE and CORFO were keen on highlighting the fact that their operations and investment budgets are set by Chile's Central Government, which means that (i) they compete with other Governmental agencies for budget allocations, and (ii) they follow yearly cycles and constraints that are not easy to depart from if there are no other sources (like TC Component funding) to leverage.

**Linking back to other technologies, a relevant finding from the present ELE is that PV seems to be mature enough not to require financial support for pre-investment studies, but other technologies**

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**could still benefit from this support.** Further demonstrative effects could help other SSRE technologies gain traction and start being implemented more regularly. Supporting their weak or nascent supply chains is still challenging in the country and for the Chile SSRE project.

**Regarding the project's expectations to reduce financial barriers and support the private banking sector to create green financial instruments, none of the results of SC 3 and SC 4 are available yet, so it is not possible to measure their efficiency other than from a design perspective.** As mentioned before (section 3.2.3), the need for a guarantee fund is unclear as financial institutions (other than Banco Estado) offer non-specific financial products to support SSRE projects. In this sense, as long as commercial banks do not offer financing tools adequate for the characteristics of SSRE projects, including project or technology-specific interest rates and tenors, the positive effect of a guarantee fund could be quite limited.

**Due to the fact that only one of the four Subcomponents of the FC Component is active and achieving its expected results and that there are question marks over the other three, starting with the delays but which also include their lack of alignment with what currently seems to be the most significant challenges or barriers for larger scale SSRE adoption, the ELE team decided to assign an amber RAG rating to the Efficiency dimension.**

### 3.4 Impact of the project

<b>Impact</b>	4. What evidence is there that the project will likely contribute to the intended impact in the ToC (incl. transformational change)?
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The report for the ELE of the TC Component assigned an amber rating to the Impact dimension of the Chile SSRE project. This considered the evidence of strong progress made by the TC Component in creating and consolidating capabilities but highlighted the missed opportunities and limitations resulting from not having the FC Component executed in parallel. The project was designed for the concurrent execution of the two components to exploit complementarities and synergies. The TC Component started early and made great strides in building technical capacity and introducing and updating regulations. However, it could only achieve so much without the financial incentives to be brought about by the FC Component. In addition, the lack of clarity on when the FC Component would begin prevented the TC Component to seek alternative sources of funding during its implementation, at least to bridge the time gap until the start of the FC Component. What finally happened was that a significant part of the implementation effort, with its learning and market-building contributions, was postponed until the FC Component finally began.

The current ELE found in Chile a large base of installed SSRE solutions, an empowered and consolidated SSRE supplier base, and a corporate base that is now more aware and knowledgeable of SSRE opportunities. This can be considered advanced signals for Dimension 1 of the Transformational Change Measurement Framework (see section 1.2.1 and Annex A). In the interviews with the different types of stakeholders, the ELE team found strong evidence of SSRE technologies, mostly PV solutions, being well-known and understood by corporate users, with high confidence in the systems' ability to deliver their benefits, despite higher costs or delays that may have affected the sector in recent times. There was also a general perception that the SSRE supply base had improved, although the need to keep training and upskilling it was mentioned. The increasing

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goals associated with SSRE, and the commitment of Chile to renewable energies, as demonstrated by the renewable energy laws and policies adopted in recent years, add to that positive perception. The success seen so far needs to be seen under the light that most adoptions have focused on PV solutions. As mentioned in Section 3.2.2, a strategic discussion needs to take place within the project Steering Committee, i.e. among the project partners and the implementation organisation, to determine whether having low adoption of non-PV SSRE technologies should be a cause for concern. In other words, should the project maximise the amount of GHG emissions reductions by focusing on the “low hanging fruit” of PV SSRE installations, should it maximise the widening of the SSRE market to other technologies, or both? Subsequently, if there is agreement that the project must support other SSRE technologies, a decision must be taken on which technologies and for which conditions or contexts they should receive further support.

**Despite the delays in its start, the FC Component, through the “*Ponle Energía a tu Empresa*” initiative, has contributed to organisations adopting SSRE solutions that they would not have without such support, and its positive results are getting the attention of other companies.** As discussed in section 3.2, the financial incentive’s calls led many companies to advance decisions to adopt SSRE systems that they may have pondered but had not confirmed or committed to. Some beneficiaries of the first call mentioned that their projects and companies had been subsequently featured in promotional material for the second call and other governmental work. A few other beneficiaries mentioned that nearby companies had contacted them to learn about their experience before embarking on similar projects.

**A stronger SSRE provider base and market have also been crucial in the perceived success of the financial incentives and provide important lessons for regions, technologies, or groups of organisations for whom adopting SSRE solutions is desirable but not necessary.** Most of the beneficiaries of the “*Ponle Energía a tu Empresa*” financial incentive mentioned that without the SSRE providers’ support to prepare and submit the applications, they may not have participated in the call. As discussed in section 3.2.2, the features of PV technologies make it easier for their providers to lead adoption efforts, but other SSRE technologies require more investment in studies or licences. A similar problem affects locations whose small populations or economic activity cannot support a local provider base, which are more likely to benefit from further support or incentives to adopt SSRE solutions than other locations with stronger local markets.

**Local governments have taken notice of the “*Ponle Energía a tu Empresa*” initiative’s success and are designing similar schemes to direct regional funds to encourage SSRE adoption.** The ELE team was informed that the National Government would not continue supporting the financial incentive scheme after the Chile SSRE project FC Component ends. Still, they mentioned that the government of the Coquimbo Region were working on preparing versions of the programme to encourage further adoption of SSRE in their jurisdictions and that other regional governments were also considering similar actions.

**The Chilean National Government is committed to scaling-up renewable energy generation. Apart from its larger green hydrogen and biofuel efforts, it intends to scale up the Chile SSRE project-created guarantee fund with an additional US\$ 20 million. However, the assignment and use of these funds should be reviewed and further considered to get maximum SSRE adoption.** The National Government is pushing on with many important renewable energy efforts, with a high



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interest in green hydrogen and less visible, but still very relevant, policies on renewable energies like distributed power and biofuels. It also mentioned that it would contribute the equivalent of US\$ 20 million to strengthen the guarantee fund. It will be important to ensure that those resources are provided under terms that allow enough flexibility to be used under other financial tools. This could be beneficial if the guarantees do not have enough traction or if future reviews of the Chile SSRE project decide to refocus efforts on other instruments or activities to better tackle today's SSRE adoption challenges.

**Based on the evidence found of the commitment of public and private stakeholders to adopting SSRE and the potential scaling up and replication of the SSRE incentives, the ELE team considers that Dimension 2 of the TCFM shows interim signals.** The ELE did not find advanced signals because the SSRE market strength in Chile is not homogeneously high, and there are margins of improvement in fostering the adoption of non-PV SSRE technologies by certain Chilean regions or types of companies. It is, perhaps, in these niches where the project's efforts on producing a catalytic effect should now focus.

**There is an already strong installed SSRE base, which is expected to grow, with increasing involvement of private investors and ESCO schemes.** One of the SSRE providers pointed out that SSRE promises savings and benefits that organisations truly desire but rarely pursue if it involves risks or credit constraints. The ELE interviews found that most of the beneficiaries of the "*Ponle energía a tu Empresa*" were so confident and committed to sustainability and SSRE that they did not use financing to implement the solutions. It was also discussed that in Chile, but more strongly in other countries, the ESCO scheme encourages adoption as the users can get the latest technologies and the (social, marketing, and financial) co-benefits of SSRE technologies without investing their own money.

**Based on the strength of the PV technologies and market, with the reportedly 17,000 registered installations, while considering the evidence for the longer-term commitment from the public and private sector to SSRE, the ELE team considers that Dimension 3 of the TCMF already shows interim signals of being able to deliver additional, sustained, and large scale GHG reductions.**

**Following the instructions from the TCMF in Annex A, the ELE team assessed the evidence to assign a value to the Core Mandatory Indicator M3 and compare it with what the indicator's self-assessment given by the project team<sup>5</sup>.** The project team has given a score of 1 for the year 2022 to the M3 indicator. Their reasoning was the limited implementation of the FC Component, particularly its SCs 1, 3 and 4. **Nonetheless, based on the evidence described above, the ELE team assigns a rating of 3 to the project's M3 indicator at its mid-term, i.e. the sought transformation is judged likely.** In fact, despite the different challenges described in the previous sections for the project in terms of promoting non-PV SSRE technologies, increasing geographical coverage and adoption by smaller enterprises, there is a strong base for SSRE to continue growing, given the current levels of interest of the private sector and public-sector support.

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<sup>5</sup> The Core Mandatory Indicator M3 reads: "Degree to which the supported activities are likely to catalyse impacts beyond the projects (potential for scaling-up, replication and transformation)". The project team is asked to self-assess it using the following 0 to 4 scale: 0 = Transformation judged unlikely; 1 = No evidence yet available; 2 = Some early evidence suggests transformation likely; 3 = Tentative evidence of change – transformation judged likely; 4 = Clear evidence of change – transformation judged very likely.

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The ELE team considers that the Impact Dimension of the Chile SSRE project is eligible for a green RAG Rating, as it surpasses the level of signals that were expected. In any case, the ELE team emphasises that getting this rating does not mean the project does not face any challenges. In this particular case, the main challenge comes from how successful the proposed guarantee scheme and the support to financial institutions end up being in promoting or speeding-up SSRE adoption, particularly in those technologies, regions and types of organisations whose conditions or priorities do not tend to encourage the process.

### 3.5 Sustainability of the project

#### Sustainability

5. What is the likelihood that the outcomes will be sustained after the end of the project funding period?

The ELE report for the TC Component of the Chile SSRE project concluded that there were concrete, yet manageable, risks to the sustainability of the project's intermediate outcomes. The team that conducted that ELE found a strong alignment between the project's objectives and the government's climate agenda. However, they noted that a proper joint effort would depend on the ability of the Chile SSRE project to adapt the FC Component to the rapidly evolving developments and the economic impact of COVID-19.

That report also mentioned that the MoE displayed strong ownership of the project. Nonetheless, the evaluators identified a potential challenge in the handover process between the TC and FC Components, which could fail if GIZ was not adequately involved. Finally, the TC Component's ELE report expressed concerns about the ambiguity of the project's leadership during the FC Component's execution.

The strong alignment between the project's objectives and the national and local governments' climate agendas remains, proven by the Energy Agenda and the goals proposed about distributed generation. The market for PV solutions may be robust in core Chilean regions, but it would benefit from financing tools to help create local conditions for wider SSRE adoption. These may include guarantees but should not be limited to them: actions like the Coquimbo regional government's decision to create their versions of the "Ponle Energía a tu Empresa" could help tackle more directly local constraints and challenges for the adoption of SSRE solutions. Without a portfolio of technical and financial support, non-PV SSRE technologies, less affluent or populated areas and small and medium-sized enterprises could be discouraged from implementing SSRE systems due to their higher investment and risks that the private sector, on its own, may not assume.

On the other hand, there is a clear trend towards using renewable energies, with a strong focus on PV systems. This implies that an increase in the number of projects related to this technology is expected. The PV systems market is mature and robust at the national level, translating into greater knowledge and supply of products in this sector. However, it is recognised that there are still opportunities for improvement by SSRE providers in topics like geographical coverage, financing and even training of installation technicians to serve a larger number of projects, or by regulatory agencies in relation to ESCO-scheme regulation, other permit, and licensing requirements, that could contribute to more and higher-quality projects.

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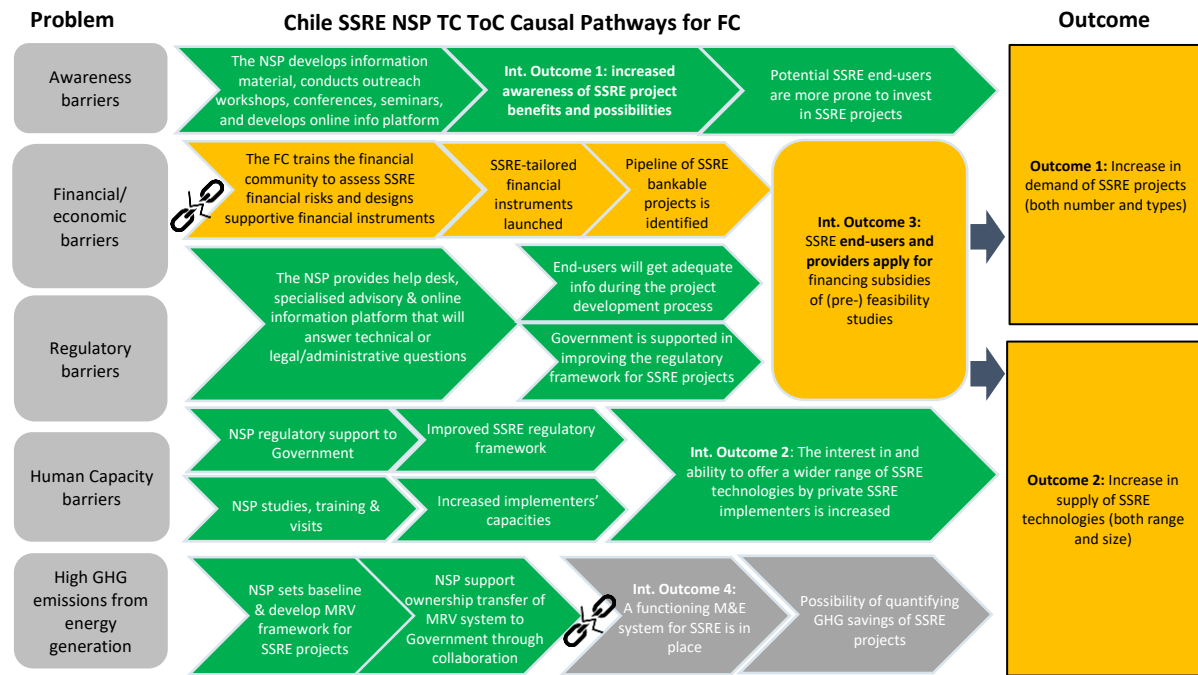
**Implementing the guarantee fund, which CORFO will manage, is still pending and is expected to remain in place for many years.** Additionally, the Chilean government plans to allocate US\$ 20 million to scale up this fund, ensuring its sustainability beyond the end of the project. Also, an exit strategy for the programme was reportedly submitted at the end of 2022 by CORFO and KfW to TSU and is currently awaiting feedback from the latter. The ELE team did not get to review or consider that proposal, which should be reviewed in detail in the final ELE for the FC Component, along with the final objective and scope of the guarantee fund as implemented under the Chile SSRE project.

**Based on these considerations, the ELE team has assigned a RAG rating of green to the sustainability of the Chile SSRE project.** The government shows a strong commitment to continue promoting SSRE technologies. In addition, the pending implementation of the guarantee fund provides long-term prospects for project continuity. Finally, there is evidence of a mature market for PV that is expected to continue to strengthen up, and there are still opportunities to contribute to other technologies in the early stages of development.

## 4 Conclusions

Now that the evidence collected and analysed by the ELE has been explored, this section goes back to the project’s Theory of Change to test to what extent the original causal pathways and assumptions behind them (see Section 1.1) have held.

**Figure 3. Overview of project causal pathways assessment at mid-term**



**Figure 3 presents an overview of the project’s progress along its ToC causal pathways towards its intended outcomes.** The RAG rating uses the same scale as the previous section (i.e. Good / Very Good = Green; Problems = Amber; Serious deficiencies = Red; Not enough info to rate = Grey), and the colours of the Intermediate Outcomes’ shapes are the same colours used in Section 3.2 to rate the project’s achievements for each Intermediate Outcome. This will be read as an assessment of the project’s situation, i.e. at mid-term.

**The Causal Pathway supporting Intermediate Outcome 1 shows all stages in green, capturing that potential SSRE users are now more inclined to invest in the technology.** The ELE of the TC Component had assigned a grey colour to that last step as the delays in the FC Component had prevented the work at the time from gauging the willingness of potential SSRE users to commit to the new technologies. The evidence collected during this ELE is that there is a general awareness of the opportunities and potential of SSRE adoption and that, given the right conditions or incentives, organisations would make the change, as evidenced by companies that hurried to prepared and submit proposals to get the incentives of the “*Ponle Energía a Tu Empresa*” scheme.

**The Causal Pathway supporting Intermediate Outcome 2 maintains the green rating across the chain that it had received at the ELE for the TC Component, but it does it with some comments for the remainder of the Chile SSRE project and beyond.** The ELE team found ample evidence for SSRE providers and users carrying out projects to implement SSRE solutions. But in contrast to the last link

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of the causal pathway that expected *many* SSRE technologies to have been implemented, most of these implementations correspond to PV solutions. Furthermore, SSRE adoptions seem to be spatially constrained to areas close to Chile's main population and economic centres able to maintain local SSRE markets. The strength of one technology over others is not a sign of problems, and even less so when SEC reportedly has ca. 17,000 registered SSRE solutions. But it should trigger some analysis and discussion on whether further effort should be made to promote other SSRE technologies and how to pursue that effort.

**The Causal Pathway supporting the Intermediate Outcome 3 passes from the red given by the previous ELE to an amber colour in this ELE. This acknowledges the effectiveness of the "Ponle Energía a tu Empresa" programme to incentivise the adoption of SSRE. Yet, it also considers the concerns about other FC Subcomponents, which are still delayed.** According to the project beneficiaries interviewed, the "Ponle Energía a tu Empresa" financial incentive was a key decision-driver for many companies to participate and implement SSRE. However, SC 2, to which the financial incentive belongs, is one of four FC SCs and represents a little over 11% of the FC Component's budget. SCs 3 and 4, representing 83% of the FC Component's funds, are expected to start execution in 2023 or early 2024. Although some general aspects were presented to the ELE team, it is very challenging to measure effectiveness or impact only on expectations. This is made more difficult when many interviewees did not seem too convinced that activities in those SCs would make any significant contributions to the challenges the Chile SSRE project currently face, which seem to lie in promoting non-PV SSRE solutions and encouraging adoption in less central areas and by smaller enterprises.

**Finally, the Causal Pathway supporting Intermediate Outcome 4 was slightly revised by this ELE: the link containing the Intermediate Outcome 4 itself was changed from green to grey in this ELE.** At the ELE of the TC Component, that specific link had received a green rating due to the reported success and satisfaction of the Chilean Government with the M&E system developed for the project. The methodology has been embraced by the MoE, which has required all "Ponle Energía a tu Empresa" participants to submit technical data that can be used as input to the M&E system to estimate the GHG emission savings. The MoE will carry out the first formal application of the M&E system in 2024 using that information. However, at the time of this ELE, it is unclear whether or how CORFO would collect and report GHG savings information from their SCs 3 and 4 to contribute to the overall M&E GHG savings report. Because of these uncertainties, the ELE team decided to change the former green rating to a grey rating, reflecting that more information is needed, particularly from applying the M&E system in 2024, to determine its contribution to the overall Chile SSRE project.

**Process tracing was applied as an additional test to check the validity of the project ToC and assess the strength of the evidence collected by the ELE.** The results of the process tracing tests did not contradict the findings presented in the body of the report. In summary, process tracing confirmed that, at this point, the project has effectively contributed to the adoption of SSRE by companies that had considered the switch but had neither allocated funds nor assigned a date for the changeover. In contrast to the positive elements, the ELE found that delays persist in the execution of the FC Component, with three of its four Subcomponents, representing 89% of the total FC Component's funds, still not in execution.

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## 5 Lessons and recommendations

### 5.1 Key lessons

The evidence gathered during the ELE, along with the key findings presented in Section 3 and the conclusions in Section 4, have been used by the ELE team to draw the lessons below.

#### 5.1.1 Lessons for the project team to achieve the goal of the project

- 1. The rapid progress of one of many technologies within a project should trigger analysis and discussion on whether a project's strategy, activities and funds should be updated to maximise impact.** Some particular features of PV solutions led them and their markets to progress far quicker than other SSRE technologies, to the extent that core Chilean regions could adopt PV solutions without financial support. Other SSRE technologies that need pre-investment studies and licenses or have higher implementation costs and risks are unlikely to be implemented if support stops. It appears to be time to assess what the best use of the remaining funds of the Chile SSRE project is and towards which technologies they should be invested.
- 2. Effective communication of project activities and SSRE champions engaged in them are key to ensuring proper participation and engagement of the final beneficiaries.** The interviews made by the ELE team with "*Ponle Energía a tu Empresa*" beneficiaries found that around two-thirds of them had learned about the project through providers or by chance. However, several of them also mentioned that for the second call for projects or for other private SSRE technology implementations they had been contacted by prospective adopters located nearby to learn about the solutions they installed. Besides relying on SSRE providers to disseminate calls made under the Chile SSRE FC Component, the MoE and CORFO could use the beneficiaries of previous calls as local "SSRE champions" or "success cases" to support wider dissemination of new calls or initiatives, leveraging their local connections and increased proximity with other potential adopters.

#### 5.1.2 Lessons for the political project partners and other key project stakeholders for supporting the success of the project

- 1. The introduction of new financial instruments for sectoral transformation will likely require some technical staff support.** "*Ponle Energía a tu Empresa*" beneficiaries complained that the proposal reviews were too slow. The MoE argued that it could not avoid those delays after receiving more applications than they were expecting and evaluating them with the existing staff, as they had no additional funds to hire technical staff to support that review work. The Chile SSRE project could have some resources left to open another "*Ponle Energía a tu Empresa*" call for projects in 2023-2024 but may not be able to if the implementation organisations cannot hire extra technical support. Similar problems may be encountered by CORFO, or the Financial Institutions involved in the guarantee fund.

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### 5.1.3 Lessons for the Mitigation Action Facility for the review, approval, and management of future interventions

- 1. Financial instruments considered in projects should be flexible to allow for changes to be made to them as these projects evolve and contexts change.** In the case of the Chile SSRE project, having the FC Component being executed without the support of the TC Component has led to delays that have left some beneficiaries frustrated and could prevent project partners from conducting new calls or from reviewing and reassigning funds to other priorities.
- 2. Increased flexibility to adapt the activities, tools, and outputs to the evolving sectoral and project needs should start with the general agreements between the Mitigation Action Facility and the Government of the beneficiary country. Increased flexibility in those framework agreements could lead to shorter and easier negotiation and signing processes.** The ELE of the TC Component mentioned that not having had the FC Component running concurrently meant that the TC Component had to compromise. This ELE has found that the FC Component has also been compromised for not having the TC Component's resources to support it. External elements like TC and FC Components not happening at the same time, administration changes, and even the progress made of some SSRE technologies, forced some conditions onto the project components, leading them to compromise instead of adapting and maximising their impact. Some interviews suggested that the rigidity originated in the general framework agreements, which set the conditions for the separate agreements and the rest of the project. A general framework agreement that is less detailed would not only allow the project to better adapt to changing conditions but could also facilitate and speed up its signature, as a more general agreement would require less detail (and time) for the negotiation and signature.
- 3. There needs to be stronger incentives and support to encourage project teams to review, analyse, and adopt actions based on their own ELEs, or those from other (similar) projects.** The local project partners of the Chile SSRE project claimed they never received the final version of the TC Component's ELE report. The report included key lessons and recommendations for the continuation of the project, and it would have been an important document for those closely involved in its planning and implementation. They also mentioned having only recently learned about knowledge and experience exchange spaces facilitated by the Mitigation Action Facility between different projects, and they lamented not participating in them. This raises some questions on how effective the Mitigation Action Facility's Knowledge and Learning Hub is in its current form and whether additional communications, requirements or incentives may be needed for the important learning process loop to be closed.

### 5.1.4 Lessons for improving other or future projects' design and implementation

- 1. Sectoral transformation projects involving multiple technologies within a solution portfolio or of national scope need to consider that different technologies and regions will respond at different speeds, and constant monitoring, adjustments and targeted interventions may be required to achieve the final impact.** In Chile, there has been a clear preference for PV

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systems, reflected in the low number of financing applications for other technologies. But in the country's more remote regions, even the development of PV SSRE systems is limited. Lacking adequate local support or value chains for those SSRE technologies implies higher installation and shipping costs and difficulties in keeping them operational. The case of Chile shows that promoting a “portfolio” of solutions is more difficult than pushing one technology due to the differences in their characteristics or requirements. It also shows that there needs to be additional monitoring and decision-making spaces within projects to analyse what is causing technologies and locations to respond differently, if that difference should be considered a failure, and whether targeted or tailored actions should be taken to reduce imbalances.

- 2. Technological providers are key stakeholders and allies in promoting new technologies, particularly ones not crucial to companies' operations.** Throughout the interviews, it was noted that the SSRE providers played an important role in marketing the “*Ponle Energía a tu Empresa*”. They have usually been the ones who prepared and submitted most of the requested documentation rather than the beneficiaries. This highlights the importance of considering and even recruiting technology providers as allies to encourage the changeover to cleaner technology, particularly those technologies that seek to replace existing equipment or services that are not central to gaining or maintaining a competitive edge by the end-users, like energy efficiency or SSRE initiatives.
- 3. Financial incentives need to be developed to work as incentives and not as additional requirements or administrative procedures.** Beneficiaries of the “*Ponle Energía a tu Empresa*” financial incentives complained about the scheme in two aspects: (i) the payment of the incentive after the implementation took too long and getting it was too demanding, and (ii) inflation and supply chain disruptions during the SSRE implementations of first call's beneficiaries meant that some of the “benefit” they had expected was lost in the higher equipment and transport costs and the delays. Payment schemes that consider paying part of the incentive closer to the commissioning of the SSRE systems and leave a smaller amount to be paid after full paperwork compliance is ensured could reduce complaints. Moreover, it could be important that some of these incentives, particularly those for first movers like those deciding to pursue non-PV SSRE solutions early on, include inflation adjustments to compensate for price changes or other external costs or risks. The objective of these incentives is for the early implementers to be compensated for their commitment and for the higher risk (or costs) of early technology adoption.

## 5.2 Recommendations

### 5.2.1 Recommendations to the project team to achieve the goal of the project

- 1. Review the project vis a vis its current challenges and needs and propose changes to strategies, actions, and tools seeking to maximise the project's impact.** The project team and its Steering Committee should conduct a formal review of the status of progress and maturity of the different SSRE technologies and regional needs and, from that, develop a strategy to target SSRE technologies to the regional conditions or needs, but also to their ability to



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maximise the contribution of the remaining FC Component funds to the overall impact of the project.

- 2. Prioritise the preparation and submission of any additional amendment requests required to formalise strategy, activity, or tool changes that may need approval by the Mitigation Action Facility.** If the strategy that results from the review above implies changes to the project's activities or tools, the Implementing Organisation should make it a priority to prepare and submit a request to the Mitigation Action Facility to get their clearance. Any delays in this submission could mean that the limited project's remaining time would be further reduced.
- 3. Increase communication and dissemination efforts of incentives to adopt SSREs.** Many beneficiaries of the "*Ponle Energía a tu Empresa*" expressed being fine if asked to serve as SSRE champions for new calls or additional transformation efforts.

### **5.2.2 Recommendations to the political project partners and other key project stakeholders for supporting the success of the project**

- 1. Estimate and secure any additional funding required to adequately execute the remaining funds of the FC Component.** Determine technical support needs for the execution of the remaining FC Component funding according to their subcomponents (and also any changes to them in response to other recommendations), determine clear funding sources to cover them, identify any gaps, and seek and secure funding to cover them in such a way that the impact of the Chile SSRE project is maximised.

### **5.2.3 Recommendations to the Mitigation Action Facility for the review, approval, and management of future interventions**

- 1. With high priority, the Mitigation Action Facility should review and respond to any amendment request to the FC Component resulting from the project team's review of the priorities and needs of the project.** The Chile SSRE project has 1.5 years remaining. Annual public sector budgets, along with long project preparation and execution times, particularly for non-PV SSRE solutions, means there is not much effective time for execution. Responding swiftly to any amendment request that results from the project team's review of this ELE can be important to maximise the project's impact.
- 2. The Mitigation Action Facility should strengthen its existing knowledge and learning hub with communication campaigns and incentives to get project partners to review and react to ELE Reports and engage in knowledge exchange sessions.** Although ELE Reports are published in the "*Knowledge and Learning Hub*" section of the Mitigation Action Facility's website, additional communication efforts and incentives may be required for the project partners to access, review, and learn from other experiences. A similar opportunity is perceived by the ELE team around knowledge exchange sessions, from which no data seems to have been shared by the aforementioned *hub*. TSU could perhaps create an ELE Lessons and Recommendations newsletter that would share important findings with all project partners, taking those newsletters as an opportunity to inform about knowledge exchange

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sessions. It could also introduce incentives to get project teams to “learn” more and participate in community of practice-like engagements.

- 3. FC Components should be able to be adapted to the evolving conditions of the project, the sector, and the surrounding context, particularly if a long time has passed since the project was prepared and approved.** Interviewees highlighted that the current FC Component’s instruments were proposed almost a decade earlier for the conditions existing at the time and were expected to be executed in parallel to the TC Component. However, most of the FC still needs to be executed, and this without the TC Component to serve emerging needs for technical assistance. Allowing projects to better adapt to the conditions they face during execution could increase their performance across all dimensions (relevance, effectiveness, efficiency, impact, sustainability, and learning), as they could better pivot to tackle the crucial barriers or challenges faced, and also could make better use of external sources than just waiting for a delayed FC Component to pick up the work previously done.

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# Annex A Capturing project-induced transformational change

## Introduction

This is a brief guidance developed by AMBERO/OPM outlining a framework to consistently evaluate Mitigation Action Facility-funded projects' progress towards bringing about transformational change.

Transformational change is embedded in the Mitigation Action Facility's goals, and Theory of Change (ToC), and projects are the main way through which the Mitigation Action Facility will achieve this transformational change. Therefore, the projects must aim to achieve this level of change, and the Evaluation and Learning Exercises (ELEs) of such projects should evaluate their progress.

In a way, key elements of transformational change are already monitored through the project's Mandatory Core Indicators M1-M5, part of the Mitigation Action Facility M&E Framework<sup>6</sup>. However, they only cover partial elements of transformational change. Therefore, clearer guidance is needed in identifying the signals or evidence of project-induced transformational change.

This brief document clarifies how transformational change is expected in projects. It guides project and ELE teams in characterising the elements and evidence of project-induced transformational change.

## Breaking down project-induced transformational change

The Mitigation Action Facility defines transformational change as "*Catalytic change in systems and behaviours resulting from disruptive climate actions that enable actors to shift to carbon-neutral pathways*"<sup>7</sup>.

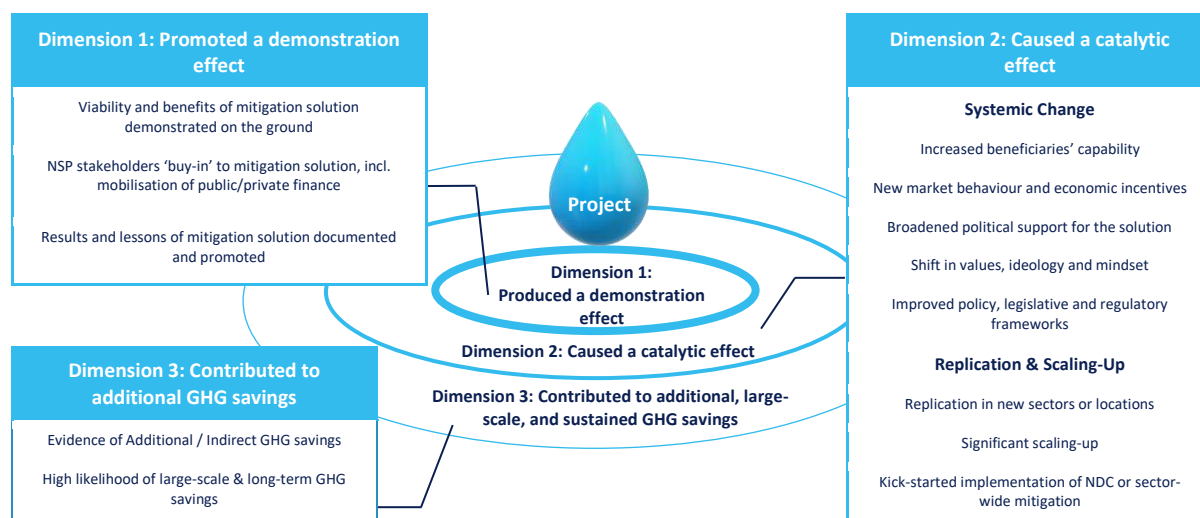
The Mitigation Action Facility's ToC explains how transformational change is expected through its outputs and outcome. The ToC is broad, and there are different ways transformational change can be achieved through the projects, simplified into the three *dimensions* summarised in the figure below.

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<sup>6</sup> <https://mitigation-action.org/our-approach/monitoring-evaluation-learning/>

<sup>7</sup> [https://mitigation-action.org/wp-content/uploads/Mitigation-Action-Facility\\_transformational\\_change-factsheet.pdf](https://mitigation-action.org/wp-content/uploads/Mitigation-Action-Facility_transformational_change-factsheet.pdf).

**Figure 4. Dimensions of project-induced transformational change**



Three dimensions interact and reinforce each other to produce project-induced transformational change (Figure 4). These are described below, indicating what is expected to be achieved at the project's mid- and end-point (see Table 8 and Table 9 for more details on scoring criteria).

- **Dimension 1: Promoted a demonstration effect.** The most direct way in which a project can contribute to transformational change is to produce a demonstration effect which will imply that:
  - The project has **demonstrated** or proven the viability and benefits of a particular **mitigation 'solution'** (e.g. **models, practices or technologies**) through implementation on the ground (e.g. using pilot projects), thereby directly contributing to GHG emissions savings;
  - There is **evidence of buy-in by key project stakeholders**, e.g. by mobilising additional public/private finance along with the project Financial Cooperation Component;
  - The demonstrated **results and lessons of the mitigation solution have been documented** (e.g. in knowledge or communication products) **and promoted externally to a wider audience.**

*By mid-line, projects are expected to show interim signals of achieving this demonstration effect, which should have become clear evidence (i.e. advanced signals) by the end-line.*

- **Dimension 2: Caused a catalytic effect.** To amplify the impact of the mitigation solution demonstrated (Dimension 1), the project needs to cause a virtuous catalytic effect in the operating country or region. This can take the form of one or more of the following catalytic changes:
  - **Replication and/or significant scaling-up** of the project's demonstrated solution in other sectors or locations or the project itself. This could include kick-starting sector-wide mitigation or the NDC; and/or
  - As a result of the project improving enablers and/or eliminating barriers to the uptake of the mitigation solution, it will result in wider '**systemic**' change, which could be supported by one or more of the following: a) Increased beneficiaries' capability; b) new market behaviour and economic incentives; c) improved policy, legislative and

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regulatory frameworks; d) broadened political support for the solution; e) shift in values, ideology and mindset.

*By mid-line, projects are expected to have produced some early signals of one or more of these changes (or that they are likely in the near future), which should have been strengthened into interim signals by the end of the project.*

- **Dimension 3: Contributed to additional GHG savings.** As a result of contributing to Dimension 1 and Dimension 2, the project will indirectly influence *additional, large-scale and sustained GHG savings*<sup>8</sup>.

*Projects are not expected to have achieved this during the project's lifetime. Yet, by the end of the project, there should be early signals of additional (i.e. indirect) GHG savings and evidence that these will become large-scale and sustained GHG savings in the future.*

### **Box 1: Connection between transformational change Measurement Framework and Knowledge Management and Learning Strategy**

One of the key objectives of the Knowledge Management and Learning Strategy (KMLS) is to ensure that learning from successes and failures is taken into account, changes are implemented accordingly, and innovative approaches are replicated. There is, therefore, an important connection between the ELEs and this strategy, and the learning documented through the ELEs is expected to be used by the Mitigation Action Facility in its function of 'Knowledge and Learning Hub' for the international climate finance community explained in the strategy. In particular, project-specific learning should be proactively shared and discussed with other projects (at least with those funded by the Mitigation Action Facility). The KMLS also expects to engage with and influence international debates on climate finance and transformational change. The Mitigation Action Facility will use and synthesise learning on supporting transformational change, documented through the ELEs, to inform this engagement.

## **Measuring project-induced transformational change**

The transformational change dimensions come directly from the Mitigation Action Facility ToC. As the projects are expected to be aligned with the overall Mitigation Action Facility ToC, it should be possible to map the dimensions of transformational change in the project ToCs. All projects must monitor their progress using their Monitoring and Evaluation (M&E) Plans, including Mandatory Core Indicators and project-specific indicators.

The ELE teams will evaluate and learn from the projects' progress in supporting transformational change, including reviewing progress against the indicators and milestones in their M&E Plans. In addition, this can be complemented (and verified) with more qualitative ELE questions and data sources. Table 1 below guides ELE teams regarding criteria and evidence for assessing the project-induced transformational change. This includes the three dimensions and the scoring for the Core Mandatory Indicator M3, which can be seen as the summation of results for the three dimensions.

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<sup>8</sup> Additional = the GHG savings achieved are in addition to those achieved by the direct implementation of the project.  
Large-scale = the additional GHG savings will have a significant impact on overall GHG savings in the geography/sector.  
Sustained = there is no chance of the GHG savings being reversed.

**Table 7. Guidance for ELE teams for measuring project-induced transformational change**

Transformational change dimension	Element within transformational change dimension	Alignment with OECD DAC Criteria / ELE report section	Where should it feature in project ToC and M&E Plans	How to measure success	Expectations at mid-line and final ELE
1: Promoted demonstration effect	a Viability and benefits of mitigation solution demonstrated on the ground	Effectiveness	<ul style="list-style-type: none"> <li>Milestones set for outputs and/or Intermediate Outcomes (if used) should represent the scale of uptake needed to demonstrate the solution is viable (meaning it has been shown to work in practice at a large scale in diverse contexts and provide the expected economic, social and climate benefits)</li> <li>Also aligns with M1: Reduced Direct GHG emissions and M2: Number of people directly benefiting</li> </ul>	<p><i>Quant:</i> Achievement of project milestones for the adoption of the mitigation solution by target users and resulting direct GHG emission savings</p> <p><i>Qual:</i> Feedback from target users that viability and benefits have been demonstrated.</p>	<ul style="list-style-type: none"> <li>Mid-line: Interim Signals</li> <li>End-line: Advanced Signals</li> </ul>
1: Promoted demonstration effect	a Results of mitigation solution documented and promoted	Effectiveness	<ul style="list-style-type: none"> <li>Milestones set for outputs on producing knowledge and learning documents and engaging with wider stakeholders to share this insight.</li> <li>Seek alignment with the KMLS.</li> </ul>	<p><i>Quant:</i> Achievement of project milestones for knowledge and communication products/activities</p> <p><i>Qual:</i> Feedback from other stakeholders (e.g. other funders) on their awareness and understanding of the project and solution.</p>	<ul style="list-style-type: none"> <li>Mid-line: Interim Signals</li> <li>End-line: Advanced Signals</li> </ul>
1: Promoted demonstration effect	a Project stakeholders 'buy-in' to mitigation solution	Effectiveness	<ul style="list-style-type: none"> <li>Milestones set for outputs and/or Intermediate Outcomes for the volume of finance expected to be mobilised and/or other examples of 'buy-in' (e.g. policy statement).</li> <li>Also aligns with M4-5: Public and Private finance mobilised</li> </ul>	<p><i>Quant:</i> Achievement of project milestones for public and private finance mobilised</p> <p><i>Qual:</i> Feedback from government and other stakeholders that they are convinced of the viability and benefits of the solution</p>	<ul style="list-style-type: none"> <li>Mid-line: Interim Signals</li> <li>End-line: Advanced Signals</li> </ul>

Transformational change dimension	Element within transformational change dimension	Alignment with OECD DAC Criteria / ELE report section	Where should it feature in project ToC and M&E Plans	How to measure success	Expectations at mid-line and final ELE
2: Caused a catalytic effect	<p><b>Systemic change underway to enable widespread adoption of mitigation solutions:</b></p> <ul style="list-style-type: none"> <li>• Improved policy, legislative and regulatory frameworks</li> <li>• New market behaviour and incentives</li> <li>• Increased institutional capacity and management practices</li> <li>• Shifts in values, ideology and mindset</li> <li>• Broadened political support for the solution</li> </ul>	Effectiveness	<ul style="list-style-type: none"> <li>• Milestones set for outcomes should indicate specifically what needs to change to enable widespread uptake of the mitigation solution.</li> </ul>	<p><i>Qual:</i> Evidence of contribution to achieving expected systemic change and unexpected changes.</p>	<ul style="list-style-type: none"> <li>• Mid-line: Early Signals</li> <li>• End-line: Interim Signals</li> </ul>
2: Caused a catalytic effect	<p><b>Replication and scaling-up of mitigation solution and/or project</b></p> <ul style="list-style-type: none"> <li>• Replication in new sectors of the mitigation solution and/or project itself</li> <li>• Significant* scaling-up of the mitigation solution and/or project itself</li> <li>• Kick-starting and influencing sector-wide mitigation</li> </ul> <p><i>* Significant compared to the size of the project and the overall target user group. For example, if the project promoted the installation of 2,000 Solar PV systems (representing approximately 2% of all target users), significant replication would imply that it has reached around 20% of target users. However, there is no</i></p>	Effectiveness Sustainability	<ul style="list-style-type: none"> <li>• Milestones set for outcomes for replication/ scaling-up by others of project activities.</li> </ul>	<p><i>Quant:</i> Volume of scaling-up (e.g. # of new geographies/ beneficiaries or \$ of new funding)</p> <p><i>Qual:</i> Feedback from other funders and programmes on the influence of the project in their decision to scale up activities and/or invest in the project's sector.</p>	<ul style="list-style-type: none"> <li>• Mid-line: Early Signals</li> <li>• End-line: Interim Signals</li> </ul>

Transformational change dimension	Element within transformational change dimension	Alignment with OECD DAC Criteria / ELE report section	Where should it feature in project ToC and M&E Plans	How to measure success	Expectations at mid-line and final ELE
	<i>quantitative target to meet, and a rationale can be provided to justify it meeting these criteria.</i>				
3: Indirectly contributes to additional, large-scale and sustained GHG savings	<b>As a result of the changes from dimensions 1 and 2, there is evidence of additional and potentially large-scale and sustained GHG emissions savings</b>	Impact	<ul style="list-style-type: none"> <li>Milestones set for Impact should represent the scale of GHG emissions savings required for sector decarbonisation.</li> <li>Also aligns with M1: Reduced Indirect GHG emissions and</li> </ul>	<p><i>Quant:</i> Achievement of project milestones for indirect additional GHG emissions savings</p> <p><i>Qual:</i> Given progress for dimensions 1 and 2, an assessment of the likelihood that this will result in additional GHG savings. This is informed by feedback from wider stakeholders in the sector.</p>	<ul style="list-style-type: none"> <li>Mid-line: No signals</li> <li>End-line: Early Signals</li> </ul>
Overall Transformational Change potential	<b>M3: Degree to which the supported activities are likely to catalyse impacts beyond the projects (potential for scaling-up, replication and transformation)</b>	Impact		<i>Mixed:</i> Based on whether the expected minimum level of signals for each transformational change dimension is found, the ELE gives: 1) a RAG rate to the 'Impact' evaluation criterion; and 2) a rate from 0 to 4 to the M3 indicator.	



## Guidance for describing and scoring progress towards transformational change in ELE reports

Although transformational change is ultimately related to the project’s Impact, **evaluating progress towards it cuts across different parts of the ELE report related to Evaluation Questions on Effectiveness, Sustainability and Impact (see table above)**. In particular, the Effectiveness and Sustainability sections of the ELE report will describe key aspects of dimensions 1 and 2 (which relate to the projects’ outputs, intermediate outcomes and outcomes). Therefore, the Impact section will provide an analytical synthesis of the three transformational change dimensions referring to the previously described evidence and assign an overall score to the project’s transformational change potential. ELE reports’ authors should avoid duplications across the sections and cross-reference to other relevant parts of the report if some of the evidence has already been discussed.

Each dimension should be described and assessed according to the following “signal levels”:

**Table 8. Transformational change “signals” assessment by ELEs**

Signal level	Definitions
No evidence	Evidence suggests little to no progress is being made in line with the ToC causal pathways to Transformational Change.
Early signals	There is emerging evidence of the transformation related to the dimension, or the foundations for the transformation have been laid by the project. Still, no signals of the change are present.
Interim signals	Evidence shows some signals that the transformation related to the dimension is underway, and it is likely to continue.
Advanced signals	Evidence shows strong signals that the transformation related to the dimension is underway, and there is little doubt that it will continue.

ELEs expect projects to have achieved at least the “signal levels” in Table 9 by the project’s mid-point and end-point for each dimension.

**Table 9. Minimum expected signals of project-induced transformational change**

Dimension	Mid-point	End-point
1: Promoted a demonstration effect	Interim signals	Advanced signals
2: Caused catalytic effect	Early signals (of one or more of the types of possible changes)	Interim signals
3: Contributed to additional GHG savings	None	Early signals

**Within the relevant dimension’s sub-sections, these signal levels should be presented and justified by referring to the evidence provided throughout the report** (e.g. in the Effectiveness and

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Sustainability sections). Below are some guiding questions to support this (aligned to measures presented in Table 7).

For presenting the evidence on **Dimension 1**, the report could provide a narrative answering the following questions:

- Is the project aligned with the expected direct GHG savings per M1 and the number of beneficiaries reached per M2?
- Have the key project stakeholders (i.e. those closest to the project implementation) shown concrete evidence of buy-in/adoption of the project's mitigation solution? Is this demonstrated by public and private sector actors investing resources into it, as per M4 and M5?
- Is the project documenting the key results and lessons from demonstrating the validity of the mitigation solution and sharing these with wider stakeholders?
- Do the answers to the above questions constitute interim/advanced signals of Dimension 1 for the mid-line and end-line ELEs, respectively?

Similarly, for **Dimension 2**, the narrative could present evidence around the following questions:

- Has the project contributed to improving/removing systemic enablers/barriers to the widespread uptake of its demonstrated mitigation solution? What wider effects might this produce?
- What is the evidence that the project's mitigation solution will be scaled-up and/or replicated in new sectors and/or locations?
- Is there evidence that the project has informed or kick-started the implementation of the NDC or sector-wide mitigation?
- Do the answers to the above questions constitute early/interim signals of Dimension 2 for the mid-line and end-line ELEs, respectively?

Concerning **Dimension 3**, as no signals are expected at mid-term, the following questions are suggested for the analysis in Final ELEs only:

- Is the project in line with the expected indirect GHG savings per M1?
- What is the evidence that the project's mitigation solution will generate additional and large-scale GHG savings in the long term?
- Do the answers to the above questions constitute early signals of Dimension 3?

**Finally, the assessment would conclude by providing an overall rating of transformational change potential.** This aligns with M3: "Degree to which the supported activities are likely to catalyse impacts beyond the projects (potential for scaling-up, replication and transformation)".

The project will likely have provided a self-score for M3 within their routine M&E reporting. Therefore, the ELE teams can discuss their rationale for this score with the project teams and then provide their independent judgement.

To do this, the ELE authors should look back on whether the expected minimum level of signals for each transformational change dimension (Table 9) was found by the ELE and, on that basis, rate from 0 to 4 the M3 indicator using the scale recommended in the Mitigation Action Facility M&E Framework:

- 0 = Transformation judged unlikely;
- 1 = No evidence yet available;
- 2 = Some early evidence suggests transformation likely;
- 3 = Tentative evidence of change – transformation judged likely;
- 4 = Clear evidence of change – transformation judged very likely.

Based on that score, a Red-Amber-Green (RAG) rating will be assigned to the Impact evaluation criterion. The RAG rating can follow the guidelines in the matrix below (Table 10) while leaving some flexibility to account for the project-specific trajectories of progress.

**Table 10. Indicative project’s Impact RAG rating based on its M3 indicator score**

M3 score	0	1	2	3	4
Mid-term ELE					
Final ELE					

*Legend: 0 = Transformation judged unlikely; 1 = No evidence yet available; 2 = Some early evidence suggests transformation likely; 3 = Tentative evidence of change – transformation judged likely; 4 = Clear evidence of change – transformation judged very likely.*

## Annex B Evaluation and Learning Exercise Matrix

This evaluation and learning exercise matrix is based on the Theoretical Framework provided (version April 2022). It is a working tool that allows the evaluators to focus on a feasible target and assemble information for each question that can be synthesised in the final report, hence creating an integrative overview of the project at large.

ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
<b>1 RELEVANCE</b>					
<b>1</b>	To what extent does the project address an identified need (by cities, national government, SSRE developers, SME SSRE users)?	<ul style="list-style-type: none"> <li>The project design responds to the beneficiaries' needs and strategic priorities at adoption. Still, it continues to respond to priorities given the evolving challenges and priorities in the Chilean energy market context.</li> <li>Project is aligned with the needs of energy authorities, SMEs, and energy project developers.</li> </ul>	<ul style="list-style-type: none"> <li>The FC of the project is building upon the capabilities developed under the project's TC Component to facilitate the large-scale design and implementation of SSRE solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries (government, SMEs, SSRE project developers)</li> <li>Financial institutions</li> <li>Project team</li> <li>Independent verifiers (Industry associations, non-project consultants working in the energy sector, Development Partners, academics)</li> </ul>	<ul style="list-style-type: none"> <li>In-depth interviews</li> <li>Semi-structured key informant interviews (KIIs)</li> <li>Project proposal</li> <li>Context analysis</li> <li>Document reviews (incl. project products) and progress reports</li> <li>National plans and strategies</li> </ul>
<b>1.1 (Proposed by ELE team)</b>	How has the relevance of the project been influenced (positively and/or negatively) by external changes during its implementation?	<ul style="list-style-type: none"> <li>The project's goals and specific objectives, and needs are still valid.</li> <li>Several assumptions and causal pathways outlined in the TOC remain valid after adaptations and refinements</li> </ul>	<ul style="list-style-type: none"> <li>Chile SSRE project's efforts are long-term national priorities that are not affected by short-term context changes (e.g. local and general elections, changes in personnel, COVID-19)</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> <li>Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>Progress reports</li> <li>Semi-structured KIIs</li> <li>Document reviews</li> <li>Data from the project monitoring system</li> </ul>
<b>2 EFFECTIVENESS</b>					
<b>2</b>	To what extent has the project achieved its	<ul style="list-style-type: none"> <li>The degree to which there is evidence of the expected results</li> </ul>	<ul style="list-style-type: none"> <li>Project's TC Component deliverables and contributions have created</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> </ul>	<ul style="list-style-type: none"> <li>Project proposal</li> </ul>

ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
	intended short- and medium-term outcomes, and why?	<p>/ Intermediate Outcomes in the ToC:</p> <ul style="list-style-type: none"> <li>○ Public and private finance for SSRE leveraged</li> <li>○ Strong pipeline of SSRE projects created and maintained.</li> <li>○ A growing number of private sector stakeholders are interested in implementing SSRE solutions.</li> <li>○ Demand for financing or subsidies for SSRE feasibility or design studies.</li> <li>○ Number of Financial Institutions with dynamic SSRE financing portfolios.</li> <li>○ Functioning MRV (Measurement, Reporting and Verification) system for SSRE is in place</li> </ul> <ul style="list-style-type: none"> <li>▪ The strength of the project contribution to the realisation of those outcomes (see the link between outputs and outcomes)</li> <li>▪ For each of the outcomes, consider the major constraints and opportunities experienced (success and hindering factors)</li> <li>▪ Has the project-developed M&amp;E framework been implemented and used?</li> </ul>	<p>a strong foundation for SSRE rollout.</p> <ul style="list-style-type: none"> <li>▪ Project FC Component activities are promoting increasing demand and supply of SSRE projects.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Document reviews (incl. project products) and progress reports</li> <li>▪ In-depth interviews</li> <li>▪ Data from the project monitoring system / logframe</li> <li>▪ Semi-structured KIIs</li> </ul>

ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
2.1 (Proposed by ELE team)	The assumptions and tools developed for the project based on the Theory of Change have proven valid and effective in delivering the desired outcomes.	<ul style="list-style-type: none"> <li>The level of project contribution to achieving the results compared to exogenous factors.</li> <li>Several assumptions and causal pathways outlined in the TOC remain valid after adaptations and refinements</li> </ul>	<ul style="list-style-type: none"> <li>The Theory of Change upon which the project was prepared reliably describes the main challenges and processes required for sectoral transformation.</li> <li>The project is the main cause of achieving the intended and unintended outcomes.</li> <li>Have the changes made to the project tools via the amendments improved the project's effectiveness?</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> <li>Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>Document reviews (incl. project products) and progress reports</li> <li>In-depth interviews</li> <li>Semi-structured KIIs</li> <li>Literature review</li> </ul>
<b>3 EFFICIENCY</b>					
3	To what extent is the relationship between inputs and outputs timely and to expected quality standards?	<ul style="list-style-type: none"> <li>Timeliness of the delivery of outputs and outcomes (incl. budget spending)</li> <li>If there are delays in the implementation, what have caused them (endogenous or exogenous factors), and how seriously have they impacted the project implementation?</li> <li>The effectiveness of the measures adopted to reduce the delays</li> <li>The level of satisfaction of the project direct beneficiaries</li> </ul>	<ul style="list-style-type: none"> <li>The project's FC activities run smoothly, on time, and within budget.</li> <li>Coordination with other projects of the Chilean government focusing on RE and using synergies with further projects (by development cooperation and the Chilean government) within the renewable energy sector will add to the efficiency of the project. Cooperation with industry associations will support efficient information dissemination</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> </ul>	<ul style="list-style-type: none"> <li>Project proposal</li> <li>Document reviews (incl. project products) and progress reports</li> <li>In-depth interviews</li> <li>Data from the project monitoring system</li> <li>Semi-structured KIIs</li> </ul>

ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
			<p>and stakeholder identification.</p> <ul style="list-style-type: none"> <li>The project's TC Component created strong technical, institutional and regulatory foundations to facilitate and promote large-scale replication of SSRE initiatives</li> </ul>		
3.1	Structure & Steering: Has the project been managed, coordinated, and implemented effectively?	<ul style="list-style-type: none"> <li>The chosen implementation mechanism is conducive to achieving the expected outcomes</li> <li>The Financial Component is directly and actively contributing to achieving the planned outputs</li> <li>Communication and visibility are implemented according to an integrated approach</li> <li>FC and TC interact synergistically</li> <li>Stakeholders are participating and collaborating actively in the intervention</li> <li>Changes to the governance structure through the amendments to the project have delivered the desired benefits.</li> <li>There was an adequate handover between GIZ and KfW between the end of the TC and the start of the FC.</li> </ul>	<ul style="list-style-type: none"> <li>The SSRE project team has the right governance structure to effectively coordinate with key stakeholders</li> <li>Key stakeholders fully own and commit to their role in the project</li> <li>If there are unexpected delays, the project team will identify the causing factors and eliminate/mitigate them</li> <li>Direct beneficiaries are highly satisfied with the project's support</li> <li>Appropriate project risk mitigation actions are in place.</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> </ul>	<ul style="list-style-type: none"> <li>Document reviews (incl. project products) and progress reports</li> <li>In-depth interviews</li> <li>Semi-structured KIIs</li> </ul>
<b>4 IMPACT</b>					
4	What evidence is there that the project is likely	<ul style="list-style-type: none"> <li>The strength of the evidence that key outcomes are going to be</li> </ul>	<ul style="list-style-type: none"> <li>The project shows interim signals of producing a</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> </ul>	<ul style="list-style-type: none"> <li>Project proposal</li> </ul>

ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
	to contribute to the intended impact in the ToC (incl. transformational change) and any unintended or unexpected ones?	<p>achieved and the robustness of the causal links/pathways to the intended impact (namely, long-term urban development model transformation in Colombia and GHG emissions reduction and co-benefits)</p> <ul style="list-style-type: none"> <li>The "level of signals" of project-induced transformational change according to the Transformational Change Framework included in the ELE FW.</li> </ul>	<p>demonstrational effect (Dimension 1).</p> <ul style="list-style-type: none"> <li>The project is showing early signals of causing a catalytic effect in terms of systemic change, replication or scale-up and wider NAMA or NDC implementation (Dimension2)</li> <li>The project has a reasonable plan to contribute to additional, large-scale, and sustained GHG emission savings (Dimension 3)</li> </ul>	<ul style="list-style-type: none"> <li>TSU</li> <li>Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>Document reviews (incl. project products) and progress reports</li> <li>In-depth interviews</li> <li>Data from the project monitoring system</li> <li>Semi-structured KIIs</li> </ul>
<b>5 SUSTAINABILITY</b>					
5	How likely will the outcomes be sustained after the end of the project funding period?	<ul style="list-style-type: none"> <li>The extent of the evidence supporting the project sustainability (e.g. evidence of self-sustaining institutional structures and political and financial commitment of key stakeholders)</li> <li>There is little or no risk of backsliding or reversing</li> </ul>	<ul style="list-style-type: none"> <li>Project (FC Component) activities are helping strengthen the SSRE sector in Chile. The capacities built will stay and serve other private or public-related initiatives beyond the scope and duration of this project.</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> <li>Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>Project proposal</li> <li>Document reviews (incl. project products) and progress reports</li> <li>In-depth interviews</li> <li>Data from the project monitoring system</li> <li>Semi-structured KIIs</li> </ul>
<b>6 LEARNING</b>					
6	What key lessons can be learnt to benefit the Financial Component or	<ul style="list-style-type: none"> <li>The project has encouraged or facilitated the creation of institutional or governance structures that can draw lessons</li> </ul>	<ul style="list-style-type: none"> <li>Lessons from this project are constantly being drawn and used to improve its execution.</li> </ul>	<ul style="list-style-type: none"> <li>Direct beneficiaries</li> <li>Project team</li> <li>TSU</li> <li>Independent verifiers</li> </ul>	<ul style="list-style-type: none"> <li>Document reviews (incl. project products) and progress reports</li> </ul>



ELEQ No.	Evaluation Question	Evaluation criteria	Original hypotheses	Who can answer this question	Source of information Data gaps
	other projects in achieving their results?	<p>from FC Component work to further promote SSRE project development.</p> <ul style="list-style-type: none"> <li>▪ The project’s generation of important lessons for 1) itself, 2) future project applicants, and 3) the Mitigation Action Facility.</li> <li>▪ Lessons and recommendations from 2020’s Technical Component Final ELE have been used to improve/strengthen this project.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The project used the lessons and recommendations from the Technical Component’s ELE to learn and improve.</li> <li>▪ The project generated important lessons for future project applicants and the Mitigation Action Facility.</li> <li>▪ The project has held formal knowledge exchange work with other projects or government or industrial programmes.</li> </ul>		<ul style="list-style-type: none"> <li>▪ In-depth interviews</li> <li>▪ Semi-structured KIIs</li> <li>▪ Literature review</li> </ul>

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## Annex C List of ELE sources

### A.1 Internal documents

1. Chile SSRE Mitigation Action Facility project – Proposal 2017.
2. Chile SSRE Mitigation Action Facility project – Amendment Request 1 2019.
3. Chile SSRE Mitigation Action Facility project – Annual Report 2020.
4. Chile SSRE Mitigation Action Facility project – Semi-Annual Report 2021.
5. Chile SSRE Mitigation Action Facility project – Annual Report 2021.
6. Chile SSRE Mitigation Action Facility ELE of the TC Component 2021.
7. Chile SSRE Mitigation Action Facility project – Semi-Annual Report 2022.
8. Chile SSRE Mitigation Action Facility project – Annual Report 2022.
9. Chile SSRE Mitigation Action Facility project – Amendment Request 2 2022.

### A.2 Public documents

1. NAMA Facility, 2017, “Self-Supply Renewable Energy (SSRE) NAMA in Chile”, Factsheet, [https://mitigation-action.org/wp-content/uploads/Self-Supply-Renewable-Energy-SSRE\\_Factsheet.pdf](https://mitigation-action.org/wp-content/uploads/Self-Supply-Renewable-Energy-SSRE_Factsheet.pdf).
2. NAMA Facility, 2021, “Final Report of the Technical Component of the NAMA Support Project Self-Supply Renewable Energy in Chile, Factsheet, [https://mitigation-action.org/wp-content/uploads/NSP\\_SSRE\\_Chile\\_End\\_of\\_TC\\_Report\\_final\\_submission-Report.pdf](https://mitigation-action.org/wp-content/uploads/NSP_SSRE_Chile_End_of_TC_Report_final_submission-Report.pdf).
3. NAMA Facility, 2021, “Final Evaluation and Learning Exercise (ELE) Report & Management Response”, Factsheet, <https://mitigation-action.org/wp-content/uploads/Chile-SSRE-Final-Evaluation-and-Learning-Exercise-Report.pdf>.

### A.3 List of organisations interviewed

Institution	Position
<b>Project team</b>	
Ministry of Energy	Sustainable Energy Division
Ministry of Energy	Head of Productive Sectors Unit
Ministry of Energy	Government Regulation Analyst
Ministry of Energy	Sustainable Energy Division
Ministry of Energy	Renewable Energy Division
Ministry of Energy	Analyst of the Productive Sectors Unit
Ministry of Energy	Sustainable Energy Division

Institution	Position
Ministry of Energy	Head of Sustainable Energy Division
Ministry of Energy	Evaluation and Technical Review
Ministry of Energy	Management and Budget
Ministry of Energy	Legal Department
Ministry of Energy	Head of Legal Department
Ministry of Energy	Sustainable Energy Division
Ministry of Energy	Head of Regulatory Support Unit
KfW	Staff Member
KfW	Staff Member
CORFO	Studies and Designs Unit
CORFO	Head of Studies and Design Unit
CORFO	Commercial Unit
<b>Project stakeholder</b>	
Agencia de Sostenibilidad Energética	Head of Renewable Energies
Agencia de Sostenibilidad Energética	Leader in Energy Efficiency and Renewable Energies
SEC	Head of the Technical Department of Electrical Inspection
SEC	Head of Renewable Energies
CORFO	Technology Capabilities Manager
ASE/CORFO/Banco Estado	Support for CORFO
Mitigation Action Facility	TSU
Mitigation Action Facility	TSU
<b>Third-party</b>	
Solcor	Sales Director
Mangata	Manager
Covisa	Projects and Maintenance Assistant Manager
Covisa	Administration and Finance Assistant Manager
Covisa	CEO
Inversiones Farías	Innovation Leader
Hotelera Domus	CEO
Instituto Arcos	General Manager
Instituto Arcos	Architect
Instituto Arcos	Logistics Supervisor
Instituto Arcos	Sustainability advisor
Flux Solar	Manager
ASITEL	Operations Manager
ACESOL	Executive Director
Atacama BioNatural Products	CEO and co-founder
EkoSun	Founding Partner
Opción Solar	Development Manager
Commercial Ramos	Sustainability Advisor
Molymet	Innovation & Design Manager
Molymet	Control and Management Engineer
Frigosorno	Deputy Manager