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Series of Booklets - Carbon Pricing Instruments

CAPACITY BUILDING AND STRENGTHENING
(PUBLIC AND PRIVATE SECTOR)

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Gobierno de Chile



Gobierno de Chile

Abstract

The development and subsequent entry into force of Chile's first green taxes in 2017 constituted a significant regulatory, institutional, and technical challenge that required a major effort to build and consolidate capacities, both within the public sector (regulatory system) and for stakeholders subject to the tax (regulated parties). Achieving this demanded the formation of channels for dialogue and capacity building that disseminated information on the characteristics of the tax, garnered information for improving implementation and built instruction and consultation mechanisms to adjust the system in terms of coherence, applicability, and future expansion. This experience gives cause for optimism facing the technical challenges brought by adjustments to the green tax and the emissions offsetting mechanism specified in the new tax reform, as well as more complex carbon pricing instruments in the future.



Introduction

The implementation of green taxes in Chile in 2017 entailed significant efforts in institutional areas, including i) arrangements within public bodies; ii) preparation of regulations; iii) design and construction of measurement, reporting, and verification (MRV) systems, with applicable instructions and protocols; iv) dialogue with the private sector; v) incorporation of specialized human resources and capacity building both within the State apparatus and in affected sectors; and vi) the institution and subsequent expansion of an epistemic community around economic instruments as environmental management mechanisms.

This process permitted the collectivization of both the technical content of the new system and the regulatory conceptualization behind the tax. Within this framework, the implementation of adjustments to the green tax and incorporation of an offsetting system for pollutants covered under the regulation as a new management tool, specified in the 2020 Tax Modernization Law (Law 21,210) require: i) the expansion of institutional arrangements to cover newly emerging stakeholders (sector ministries and newly regulated sectors); ii) the strengthening of technical capacities to enhance sophistication and launch the new MRV system to address the tax and the implementation of offsets; iii) enhancement of both internal (regulator, oversight body, and public bodies involved) and external (both regulated parties and other stakeholders) communications to guarantee the correct implementation of the regulations.

Challenges in the Implementation of Green Tax Adjustments and Offsets

Strategy²

Green taxes and offsets form part of a range of economic measures designed to operate alongside existing regulatory mechanisms, introducing economic incentives for decision making, both amongst bodies subject to the tax and amongst those that are not, but have a capacity to reduce pollutant emissions. In Chile, a strategy was developed to address two challenges at once: supporting and complementing efforts to reduce local atmospheric pollution, and mitigating greenhouse gases at a reduced cost.

Formulation

Given the twofold nature of the tax, which covers both global and local negative externalities, emissions themselves are taxed. The tax is levied on each 'downstream.'³ Source, thus allowing the MRV system to be compatible with the possibility to transit to other mechanisms, like an Emissions Trading System (ETS) or the option of joint application of different carbon pricing mechanisms, sharing a single monitoring structure based on emission. Furthermore, the offsets recently approved in the national legislation will complement the green taxes, incorporating elements of flexibility and efficiency when options exist to reduce emissions at a lower cost than the tax rate, while also extending the scope of the environmental incentive, stimulating the implementation of mitigation projects in sectors that are not covered by the tax itself.

1 This document is an update and complementary text for the document 'Capacity building and strengthening for the implementation of green taxes in Chile' (2017), prepared by Rodrigo Pizarro, Francisco Pinto, and Sebastián Ainzúa. Update prepared by Francisco Pinto.

2 For more details on the strategy, see Green Tax Leaflet 1. Starting point for the deployment of carbon pricing mechanisms in Chile.

3 The green taxes are applied through midstream regulation, but can also be viewed as downstream because it is the emissions that are taxed, not the carbon content of the products or services

Challenges in the Implementation of Green Tax Adjustments and Offsets

The institutional architecture implemented for the original green taxes, as well as the open channels of communication, will allow necessary adjustments to the taxes' MRV system for the new legislation with fewer difficulties; however, a challenge arises centering on expanding the institutional arrangement to cover the new stakeholders that are being incorporated into the structure of the new carbon pricing mechanisms and the MRV system that will underpin the implementation of the offsets, including the articulation of markets for complementary services, such as validation and verification bodies for emissions reduction projects.

Development of institutional infrastructure

The system is based on institutional arrangements designed for the original green taxes, which are consistent with current regulations. The adjustments will enter into force in 2023⁴. This infrastructure determines the responsibilities, procedures, and flowcharts of inter-institutional relations⁵.

Current⁶ and future green tax regulations

Establishes definitions relating to the identification of taxable establishments; responsibilities and procedures to which regulated parties must adhere.

The future regulations (or a modification of the existing ones) will establish the new conditions for registering applicable establishments, and their procedures, in the Registry of Emissions and Transfers of Pollutants (RETC, its Spanish-language acronym), via the Registry of Sources and Processes (FPP, its Spanish-language acronym), replacing the Registry of Boilers and Turbines (RCT, its Spanish-language acronym). This will fall within the remit of the new Uniform Registry of Atmospheric Emissions (RUEA, its Spanish-language acronym) of the RETC (See Leaflet 2). The modification to the records was designed based on lessons learned by the RETC technical team during the implementation of the green taxes, moving towards a broader registry that can cover potential new sources/establishments.

Regulations for offsets

The Regulations are expected to be completed in 2021, for subsequent publication and dissemination in 2022, with all parties involved. The Regulations will establish the conditions and procedures for emissions reduction projects to be certified as valid green tax offset measures. The Ministry of the Environment is currently evaluating two options that may operate jointly: projects implemented under international programs/standards, and/or projects implemented under a domestic methodology that is under design. The Regulations will define procedures for registering, measuring, reporting, and verifying information, operation of the system for certification and trading reductions, and the constitution of external auditors as verification bodies authorized by the SMA. Chile already possesses experience in emissions reduction projects, both within the private sector for the development, implementation, and marketing of such projects, and in the public sector for their authorization, using international standards such as the Clean Development Mechanism (CDM) and the Verified Carbon Standard

⁴ For more details, see Leaflet 1 'Green Tax: Starting point for the deployment of carbon pricing mechanisms in Chile.'

⁵ For more details, see Leaflet 2. 'Institutional structure associated with carbon pricing instruments in Chile.'

⁶ Ministry of the Environment Supreme Decree 18/2016.

(VCS) (StratCarbon, 2019), representing an advantage for moving towards the development of new reduction projects, and potentially contributing to the development of new domestic standard that the Ministry of the Environment seeks to implement.

Protocols and guidance

The Ministry of the Environment and the SMA drew up a number of protocols and guidance documents that allowed the steps and mechanisms involved in applying the green tax to be organized and standardized. This permitted the system to be institutionalized and endowed with a body of regulations, while also generating tools and guiding the actions of the public and private sectors. Now, this work is being expanded with methodologies and processes to register sources and measure, report, and verify taxable emissions at the new sources that are coming under regulation under the new tax threshold.

New protocols and guidelines are also being prepared, for the measurement, reporting, and verification of pollutant emissions reductions in projects that can then be certified as green tax offsets.

Design and implementation of an emissions and emissions reduction MRV System⁷

Green Taxes

The original implementation of the taxes applicable to emissions at each source required the construction of a complex and robust MRV system to underpin and validate the information associated with applicable emissions. This, in turn, required the development of capacities both in the regulatory/oversight sector (for implementation, monitoring, verification, and administration) and in the regulated sector, to ensure the validity of the information submitted. The expansion of the emissions MRV system will be built on the original version, enhanced with new measurement methodologies that will be inserted into the reporting and verification platforms that the SMA currently operates.

It should be noted that for the operation of the green taxes implemented in 2017, both the Ministry of the Environment and the SMA have provided a range of consultation and training materials for recording establishments subject to the green tax and measuring, reporting, and verifying taxable emissions.

[RET C Uniform Public Service Registration System \(Ministry of the Environment\)](#)

[Green Tax MRV Protocols \(SMA\)](#)



⁷ For more details on the MRV system, see: Leaflet 3. Creation and Implementation of a Measurement, Reporting, and Verification (MRV) System.

Offsets

Furthermore, the design of the registration and MRV system for emissions reduction projects will be developed based on domestic and international experience associated with carbon markets, such as the Clean Development Mechanism (CDM) in which Chile has played an active role (StratCarbon, 2019) as well as other instruments, for example the offsets system in the Environmental Impact Assessment System (SEIA, its Spanish-language acronym) and Environmental Decontamination Plans (SMA, 2014).

Public sector capacity building

The core stakeholders in the process are the Ministry of the Environment and the SMA, which act as the axis of the system and are responsible for designing and implementing the economic systems and corresponding MRV systems. Public sector capacities and knowledge for the launch of the original green taxes were structured for the different stages in the process, through the preparation of application instructions and manuals for registration, measurement, reporting, and verification. The construction of these protocols required the development of technical capacities within the SMA and Ministry of the Environment, in a process in which the World Bank's Partnership for Market Readiness (PMR) played a key role, providing technical support for the preparation of instructions and resources for hiring key professionals in the different areas of the MRV system.

Registration of sources

The objectives of this stage are i) to establish a procedure for registering emissions sources, and ii) identifying establishments that may be taxable.

Preparation of the Boiler and Turbine Registration Manual

The Ministry of the Environment prepared a boiler and turbine registration manual that established the administrative procedure for mandatory registration of stationary sources rated at 5 MWT or more⁸. This regulation also stipulates information to be reported for annual specification of which establishments need to declare green tax emissions, via the Uniform Public Service System of the Pollutant Release and Transfer Register (VU-RETC, its Spanish-language acronym). This registry is now undergoing adjustments to meet the requirements established in the new Tax Modernization Law.

Subsequently, to expand the range of sources and improve available information, the Ministry of the Environment (2020) drew up the Manual of the Registry of Sources and Processes (RFP, its Spanish-language acronym), as part of a broader registry of emissions known as the Uniform Registration of Atmospheric Emissions (RUEA, its Spanish-language acronym).

The original Registry of Boilers and Turbines was prepared using existing human resources at the Ministry of the Environment; however, its subsequent sophistication to meet the expansion of the green taxes and to ensure compatibility with other types of mechanism was achieved with the incorporation of a team of five specialists, by means of the PMR (Precio al Carbono, 2019).

It should be noted that the Module Architect as Support Engineer subsequently joined the official team at the Ministry of the Environment, while the other three professionals continue to provide support in these tasks, albeit now contracted to related projects.

⁸ The difference between this record and the tax must be emphasized: The obligation to register all boilers and turbines rated at or above 5MWT does not mean that all of these units will be subject to the tax.

Emissions measurement

Emissions quantification or measurement for the original green taxes featured two core activities: i) preparation of instructions and guidance, and ii) analysis of the level of implementation of the instructions. The implementation of the modifications to the green tax was achieved by means of updating the instructions and guidance, with new measurement options and modules for the newly taxable economic sectors. Implementation in these sectors was subsequently evaluated.

Preparation of the Quantification Instructions and Guidance

The instructions and guidance were prepared by means of using the PMR project to provide specialized technical support for atmospheric pollutant measurements at the Technical Section of the SMA Oversight Division (which is responsible for this task, by law).

The SMA thus developed instructions for the quantification of emissions from stationary sources subject to the tax (Exempt Resolution 1,053, 2016), which were subsequently simplified to facilitate implementation, grouping similar options and reducing the number of options to select (Exempt Resolution 55, 2018). The new instructions establish different methodologies for quantifying NO_x, SO₂, PM, and CO₂ emissions, for facilities subject to the tax, and specify the administrative requirements necessary for correct implementation. Currently, they feature 7 + 1 methodologies, which are to be expanded to cover new sectors, such as the mining industry.

Given the prior existence of a range of regulatory texts, and the characteristics of different sectors, the SMA prepared a number of quantification options depending on the Environmental Regulation Standard (ICA, its Spanish-language acronym)⁹ that applies to each facility¹⁰. Indeed, the knowhow and experience obtained by the SMA in enforcing the emissions regulation for thermoelectric plants (Ministry of the Environment Supreme Decree 13/2011) and the emissions standard for total reduced sulfur compounds (TRS) (Supreme Decree 37/2013) contributed to the preparation of measurement/monitoring options for emissions subject to the green tax. Additionally, a guidance document was prepared to help regulated parties understand the quantification process in a simplified form.

Analysis of implementation levels

In order to ensure correct implementation of the instructions and to assess the usefulness of the guidance for the first green taxes, two visits were made to the 93 taxable establishments to prepare the application of the protocol and then to evaluate how it was implemented¹¹. The results were highly satisfactory: all taxable establishments reported (to the SMA) and applied the methodology for use in measuring their emissions. Direct communication was thus established between the key figures at the establishments (tasked with implementing the protocol) and the Technical Section at the SMA Oversight Division.

Emissions reporting

For the 2017 green taxes, capacity building originally comprised four stages: i) Incorporation of an IT team to collaborate on the architecture and development of the IT system; ii) Preparation

⁹ Environmental Regulation Standards (ICAs, their Spanish-language acronym) comprise the Environmental Resolutions, Prevention Plans, Decontamination Plans, Environmental Quality Standards, Emissions Regulations, Management Plans, and other oversight mechanisms operated by the SMA.

¹⁰ For more details, see Leaflet 3 'Creation and Implementation of a Measurement, Reporting, and Verification System'.

¹¹ Consultancy on 'Implementation of an M for application of the tax, scalable to other sectors and linkable to other jurisdictions' [Implementación de un sistema MRV para la aplicación del impuesto, escalable a otros sectores y linkeable a otras jurisdicciones]. In progress. Implemented by: DEUMAN-Esinfra. Study prepared with funding from the World Bank Group Partnership for Market Readiness (PMR).

of instructions and guidance for reporting emissions; iii) Evaluation and development of computer systems to underpin reporting, and iv) Assistance to public and private sector bodies in the implementation process.

Incorporation of an IT team

With the support of the PMR project, five IT specialists were hired to form a team designing and developing the system that underpins the reporting of emissions subject to the green tax, which was envisaged as a complementary system to the existing Thermolectric Plant System (SICTER, its Spanish-language acronym)¹², drawing together all establishments that are subject to the green taxes but not to the Ministry of the Environment's thermolectric plant regulations (Supreme Decree 13/2011). It should be noted that, once the reporting system had been implemented, both the system architect and the lead developer of the Green Tax System (SIV, its Spanish-language acronym) were directly hired by the SMA, thus institutionalizing technical knowledge in the public sector.

Preparation of instructions for emissions reporting

The SMA prepared emissions reporting instructions (Exempt Resolution 184/2016, and subsequently Exempt Resolution 55/2018) to regulate administrative duties for preparing a report containing necessary data and background information for calculating the tax to be levied on each emissions source. It establishes that all facilities subject to the tax must make a report, using the RETC Uniform Public Service System. However, the emissions reporting mechanism depends on the type of source and any applicable ICAs, and it may be processed either in SICTER (making use of the existing and operational platform used by the SMA) or in the SIV.

Evaluation and development of computer systems for reporting

As the tax incorporated sources that were not using SICTER to make reports, the SMA designed and implemented the SIV. For this purpose, the PMR project allowed a team of IT professionals to join the SMA Information Management Department, expanding and complementing the oversight body's capacities.

Meanwhile, in view of the need to safeguard the information provided by the establishments, the SMA subsequently prepared a security protocol based on information security standard ISO 27,001 and the recommendations contained in the technical guidance document 'Guidelines for Software Development for Digital Governance' [Lineamientos para Desarrollo de Software de Gobierno Digital] (SEGPRES, 2018), thus ensuring the protection, confidentiality, and integrity of information provided by the establishments. Furthermore, based on a specialist consultancy report that analyzed information security conditions in physical, logical, and professional factors involved in storing the registry system at the Ministry of the Environment, further supported by the SEGPRES Technical Guidelines, security improvements were implemented.

Emissions verification

Capacity building in this phase took three stages: i) Analysis regarding regulatory consistency; ii) Preparation of emissions verification instructions; and iii) On-site emissions verification process.

¹² The Thermolectric Plant Information System (SICTER, its Spanish-language acronym) was established under Ministry of the Environment Supreme Decree 13, which establishes emissions regulations for thermolectric plants.

Regulatory consistency

For the implementation of emissions verification, capacity building in the verification process began with an evaluation of the institutional conditions for implementing the national verification system in harmony with existing laws and regulations: the Organizational Law of the Superintendency of the Environment (LOSMA, its Spanish-language acronym: Law 20,417); Ministry of the Environment Supreme Decrees 38/2013, providing Regulations on Environmental Oversight Technical Bodies (ETFAs, their Spanish-language acronym), and 39/2013, providing Regulations on Environmental Certification Technical Bodies (ETCAs, their Spanish-language acronym).

Preparation of verification instructions

The SMA drew up a protocol establishing a general verification procedure, specifying the audit process that shall be applied to the establishments (SMA, 2018). In addition to the general protocol, a digital information verification protocol was prepared, describing the conditions for meeting quality assurance and quality control (QA/QC) standards in reported information. This protocol is currently applied to all establishments that use a Continuous Emissions Monitoring System (CEMS) under Ministry of the Environment Supreme Decree 13/2011, and work is ongoing to expand it to cover other establishments subject to the green tax.

Furthermore, verification guidelines for facilities subject to the green tax were prepared to form a reference document for persons in charge of facilities¹³. That will be obligated to respond to information requests in the audit process.

Emissions verification (V) process

In parallel with remote information verification processes, in 2020 the SMA Oversight Division began the first on-site oversight process to audit the veracity of information submitted by taxable establishments and correct implementation of measurement and reporting protocols. However, the outbreak of the COVID-19 health crisis entailed the postponement of the process until the emergency has abated.

Measurement, Reporting, and Verification of emissions reduction

Under the Tax Modernization Law, emissions reductions to be used as green tax offsets are to be certified by external auditors authorized by the SMA, in line with procedures and criteria specified by the Ministry of the Environment for such authorization to be granted. Furthermore, such reductions can only be certified following a measurement, reporting, and verification (MRV) system that is to be prepared by the SMA during 2021, to launch a training and awareness building process for regulated parties, project implementors, and potential verification bodies.

Private sector capacity building

The private sector capacity building process forms part of a general communication, participation, and consultation strategy with stakeholders, allowing the authorities to: survey information and understand concerns; resolve knowledge divides regarding the system; enhance social acceptability and reduce rejection; enhance the robustness of the mechanism and fine-tune it to the country's context, and establish the conditions to underpin a new public-private relationship to face the country's future sustainability challenges. Efforts have

¹³ SAs defined by the SMA; the person in charge of a facility is: The user of the Uniform Public Service System, comprising the most senior person at the facility, responsible for reports and declarations that must be made for that facility (Ministry of the Environment Exempt Resolution 1139/2014).

also been made to inform, train, and follow-up on correct implementation of the tax at the source level.

During the implementation process, the Ministry of the Environment and the SMA¹⁴ held training workshops to provide instruction on correct implementation and usage of the IT platforms. The workshops were held in regions with higher numbers of taxable establishments: Biobío, Antofagasta, and Valparaíso. These sessions addressed administrative and technical aspects of emissions quantification and reporting at establishments subject to the tax. Specifically:

- Register of taxable establishments kept in VU-RETC system (Ministry of the Environment);
- Green taxes and emissions quantification: General aspects (SMA);
- Exempt Resolution 184/2017. Instructions on emissions reporting;
- Green tax reporting system.

Subsequently, in 2018 the Ministry of the Environment and the SMA set out to present the results of the first year of implementation and simplified and updated MRV instructions¹⁵ by informing taxable establishments of the following areas:

- Green Tax MRV Results 2017;
- Exempt Resolution 55/2018. Updated MRV system instructions;
- Sampling-Measurement Module and Environmental Oversight Technical Bodies (ETFAs, their Spanish-language acronym);
- Green Tax System (SIV, its Spanish-language acronym).

Furthermore, the Ministry of the Environment in general, and the RETC in particular, have made available a number of tutorials and training and awareness building materials on the scope of the green tax¹⁶ and the functionalities of the RETC Uniform Public Service System, as well as the new RUEA¹⁷, which launched in 2020.

Meanwhile, in order to garner information on potential changes caused by the green tax in applicable establishments, a survey was implemented in July 2015¹⁸. A total of 93 establishments were sent the survey, of which 32 returned responses (34% of the total). The key results in terms of capacity strengthening include:

- 7 establishments (22% of those surveyed) stated that they had hired new professionals to meet the new regulations. Most reported the hiring of a professional tasked with undertaking the registration process and implementing the emissions quantification protocol established by the SMA.
- 32 establishments (100% of those surveyed) stated that they had used the establishment registration manuals (prepared by the Ministry of the Environment) and guidelines for measuring and reporting emissions (prepared by the SMA).
- 6 establishments (18% of those surveyed) stated that they had commissioned consultancy services to improve their operating processes.

¹⁴ Presentations available at: <https://portal.sma.gob.cl/index.php/portal-regulados/instructivos-y-guias/impuestos-verdes/>

¹⁵ Idem

¹⁶ Available at: <https://www.youtube.com/watch?v=aG5uptGELUM>

¹⁷ Available at: <https://ubiqq.com/mmachile/live>

¹⁸ The survey was hosted on the official website of the green tax liable emissions reporting system, operated by the Superintendency of the Environment.

Political Dialog

During the tax reform processing stage, the Ministry of the Environment maintained ongoing dialogue with potentially taxable sectors in an effort to build awareness and consensus regarding the reform, minimize rejection, and explain the scope of the system. This took the form of: high-level public meetings with public sector authorities and private sector representatives; a series of talks with invited representatives of potentially taxable companies and authorities from the Ministry of the Environment and the SMA; and bilateral talks between unions in specific sectors and the ministerial cabinet.

Dialogue with stakeholders and training sessions for the public sector

With the support of the PMR project¹⁹ and the Global Carbon Market (GCM) project spearheaded by GIZ²⁰ and financed by the German Federal Ministry of the Environment (BMU, its German-language acronym), a number of activities have been conducted with the goal of explaining the scope of carbon pricing mechanisms in general and the tax implemented in Chile in particular, discussing its contribution to combating climate change, disseminating international experiences and challenges involved in the process, and discussing opportunities for accelerating the decarbonization of the economy. Key activities included:

Webinars on Carbon Pricing Mechanisms and the Tax on CO₂²¹

These events addressed advances and challenges in carbon pricing mechanisms, together with the design and implementation of the carbon tax and its MRV system.

Workshop for Communicators (julio 2017)²²

Communicators at organizations, public sector institutions, and private sector companies were invited to a session organized by the PMR project to build awareness and report advances in the project.

Practical workshop on designing and implementing an emissions trading system – ETS (December 2017)

A technical team linked to the implementation of carbon pricing mechanisms in Chile (public and private sector) received training in Berlin (Germany) to learn about the details of the design and implementation of the European Union's ETS. Training performed by the Federal Ministry of the Environment (BMU, its German-language acronym) and the German Emissions Trading Authority (DEHSt, its German-language acronym).

Regional MRV Workshop (September 2019)²³

Workshop to exchange practical experiences between Latin America, the EU, and Germany regarding how to measure, report, and verify emissions of greenhouse gases (GHGs), for decision makers, members of the Pacific Alliance, and the Carbon Pricing for the Americas (CPA) platform.

19 For more information on this initiative, visit: <http://www.precioalcarbonochile.cl/sobre-el-proyecto/iniciativa-pmr>

20 For more information on this initiative, visit: <https://www.4echile.cl/proyectos/gcm/>

21 To view the webinars, see: <http://www.precioalcarbonochile.cl/talleres-eventos>

22 <http://www.precioalcarbonochile.cl/noticias/capacitar-para-comunicar>

23 Presentations available at: <https://www.4echile.cl/presentaciones-eventos/taller-regional-de-mrv/>

Series of Discussion Events: ‘A Coffee for Paris’ (August 2017 – July 2019)²⁴

Inspired by the Paris Agreement and its implications for domestic climate policy, a series of nine discussion events were held with the objective of promoting informed dialogue on how to achieve a fair transition towards a less carbon-intensive economy and more climate-resilient society. These events have served to build capacities, form a working network, move discussion forward, exchange diverse visions, and handle new ideas.

PMR Consultative Group of Experts (CGE)

The Consultative Group of Experts offered an opportunity to provide advice and represent different sectors of society. Its goal was to debate the design and implementation of carbon pricing instruments and auxiliary MRV system instruments, and recording emissions of greenhouse gases in Chile²⁵.

Future Challenges

For public policy, the core challenge of capacity building is to guide the process such that the climate change policy converges with the local pollution reduction policy. This entails moving towards institutional and instrumental procedures simultaneously, and answering the question: What will the State need to do in order to strengthen the system beyond the tax? From this perspective, at least the following challenges can be identified:

- Motivating ongoing technical and political dialogue at a broad and public level, discussing the advantages, difficulties, and opportunities that the implementation of carbon pricing instruments can bring to the country. This may bolster commitment and guide efforts amongst all stakeholders in the design, implementation, and evaluation of climate policy instruments.
- Continuing to create opportunities for training and technical interchange, not only between public and private bodies within the country but also with other countries or jurisdictions that have faced (or are facing) similar challenges. This helps reduce the chances of making mistakes in the design and implementation of public policy instruments.
- Preparing new MRV protocols that will meet the new conditions established for green taxes and offsets, taking account of current and potential regulatory mechanisms such as to take advantage of synergies, strengthening environmental and climate policy. These include environmental decontamination plans, the bill to create a Biodiversity and Protected Areas Service (SBAP, its Spanish-language acronym), and the Climate Change Framework Bill.
- Strengthening professional capacities within the Ministry of the Environment and the SMA: this implies training professionals to expand and adjust the MRV system, and eventually scale it to other future mechanisms, while ensuring its ongoing funding. The implementation of green taxes constituted a successful experience, but more

²⁴ Topics and presentations available at: <https://www.4echile.cl/presentaciones-eventos/dialogos-en-el-marco-del-acuerdo-de-paris-ciclo-de-tertulias/>

²⁵ To review the agendas and presentations of the CGE meetings, see: <http://www.precioalcarbonochile.cl/reuniones-grupo-consultivo-de-expertos>

professionals and technical capacities within the government are required in order to design and implement the offsets mechanism.

- Internal IT development: A structure designed based on the requirements of the MRV system must be consolidated, with qualified professionals and internally developed components. Additionally, ongoing progress is required in resolving information security issues.
- Preparing instruments to promote the creation of laboratories specializing in emissions quantification: This will permit enhancements in the quality of information provided, increases to the service's geographical coverage, and creation of a service that may be suitable for exporting in the future.
- Developing mechanisms to promote the creation of external auditing bodies to support the oversight tasks of the SMA.

Conclusion

The implementation of green taxes in 2017 brought the need to develop new technical instruments and capacity building both in the regulated and sectors and within the State apparatus. The challenges began with the specification of a strategy consistent with Chile's context and situation, before moving to the design of the instrument, and finally its implementation in a manner coherent with existing regulations and stakeholders' actual capacities.

The green tax brought with it opportunities to strengthen environmental oversight and public policy through the development of new instruments, knowledge, and professionals to enhance both information systems and internal procedures at the Ministry of the Environment, as the principal regulatory body, and the SMA, as the body endowed with environmental oversight and management tools. The most significant challenge now on the horizon will be to generate institutional and technical capacities to design and implement a new environmental management instrument: offsets.

Meanwhile, in socio-political terms, the implementation of green taxes has built awareness and societal acceptance of carbon pricing instruments, creating channels of communication with the private sector and civil society, creating a form of epistemic community around pollutant pricing mechanisms.

Strengthening awareness regarding carbon pricing mechanisms and the various available implementation options is highly relevant for understanding their role as a cost-efficient tool that complements environmental policy and favours compliance with Chile's commitment to achieving a low-carbon economy.

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