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Series of Booklets - Carbon Pricing Instruments

INSTITUTIONAL STRUCTURE OF CARBON
PRICING INSTRUMENTS IN CHILE

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Abstract

The implementation of the first green taxes in Chile brought with it a number of technical and institutional challenges, requiring the design and launch of a system for registering applicable establishments, as well as protocols, procedures, and systems for measuring, reporting, and verifying (MRV) taxable emissions. The recent tax reform modified two essential elements of the green tax on emissions from stationary sources, the tax application threshold, and the incorporation of offsets as a mechanism for compensating all or part of the sum payable. This represents a new challenge of environmental, institutional structures, first because new establishments - some of them in new industrial sectors - are subject to the tax and need the implementation of an MRV system to operationalize it, and secondly because offsets, as a new environmental management instrument, require a design that renders them coherent with other instruments already in place and efficient mechanisms to ensure that they operate correctly. Furthermore, the Climate Change Framework Bill currently under debate in Congress proposes emissions standards for greenhouse gases, a surplus transfer system, and the use of domestic and international emission reduction or sequestration certificates for compliance, bringing a significant challenge for existing institutional structures.



Introduction

In 2014, Chile implemented a tax reform that introduced the country's first green taxes, coming into force in 2017 as a starting point for environmental management pricing mechanisms (See Booklet 1)². The tax is calculated based on emissions at each source, imposing severe challenges in emissions measurement, reporting, and verification (MRV) at every site. Designing an MRV system requires the creation and deployment of a robust and coherent institutional infrastructure capable of functioning correctly from its launch date, with a potential to transition towards more complex environmental oversight instruments.

The Tax Modernization Law that passed in January 2020 (Law 21,210) incorporated two innovations to the green taxes on stationary sources, which are due to come into force in 2023, requiring institutional adjustments. First, the replacement of the technical threshold (50 MWt) with an emissions threshold (25,000 tons of CO₂ or 100 tons of PM per year), which will result in some establishments ceasing to be subject to the tax, and, more significantly for the institutional structures at hand, will render new establishments subject to the tax, operating in industries that were not previously covered. Secondly, the incorporation of an emissions offsetting mechanism as a new environmental oversight mechanism³, complementary to the tax, which will require a full institutional design in order to function correctly: from the regulations under which offsets are implemented, to protocols and procedures to authorize the auditing companies that certify their validity, to data platforms to store the information.

Furthermore, the Climate Change Framework Bill currently under debate in Congress proposes emissions standards for greenhouse gases (GHGs) and Short-Lived Climate Pollutants (SLCPs), and the use of GHG emission reduction or sequestration and surplus certificates, which can be used to achieve compliance with the standards. It also puts forward the use of certificates of emissions reduction or absorption linked to projects implemented in other countries, within the framework for cooperation specified in Article 6 of the Paris Agreement.

Thus, as progress was achieved building the institutional scaffolding for the implementation of the first green taxes, the newly passed innovations require the consolidation of institutional infrastructure, defined as the suits of agreements, procedures, arrangements, workflows, and relationships between institutions – both public agencies and in the private sector – as required for the tax amendments to operate correctly, for the offsets to be instituted, and to allow for the potential to use reduction certificates to compensate the requirements of the GHG standard proposed in the Climate Change Framework Bill.

In summary, a carbon tax came into effect in 2017, in 2023 it will be modified with a new application threshold, the incorporation of an offsets system based on domestic carbon reduction projects to cover all or part of the tax, and in the future, international offsets may be accepted, under the emission standards passed in the Climate Change Bill, specifically Articles 13 and 14. Therefore, the institutional structure consolidated for the original green taxes must now be expanded to meet the new technical conditions, and for the implementation and validation of offsets.

¹ This document is an update and complementary text for the document 'Institutional Infrastructure for Chile's Green Taxes' (2017), prepared by Rodrigo Pizarro, Francisco Pinto, and Sebastián Ainzúa. Update prepared by Francisco Pinto.

² The first iteration of the tax was raised on emissions of local (PM, NO_x, SO_x) and global (CO₂) pollutants from stationary sources featuring boilers and/or turbines, with a total thermal power rating of 50 MW or more at a given location. For more details on how the taxes on local pollutants were calculated, see Pizarro, Rodrigo (2016). Law 20,780, Article 8: Green taxes on stationary sources. Technical note, Environmental Economics and Information Division, Ministry of the Environment. Santiago, Chile.

³ Offsets will only apply for effective reductions in the same pollutant (Law 21,210).

Stages of the Green Tax Amendment and Offset Implementation Process in Chile⁴

The green taxes and offsets under the new conditions established in the Tax Modernization Law will come into force on January 1, 2023. However, their full implementation requires the preparation of new regulations and adjustments to protocols and records used to determine taxes payable and applicable offsets. These documents, together with established practices and agreements, form the foundations of the amended institutional infrastructure. The principal milestones in designing, implementing, and consolidating this process were the following (see Figure 2).

Law 21,210 (Ministry of the Treasury, February 2020)

Approval of the bill to amend green taxes. Article 16 of the law imposes a tax on emissions of particulate matter (PM), nitrogen oxides (NOX), sulfur dioxide (SO₂), and carbon dioxide (CO₂) released by single facilities or groups of facilities that emit over 100 tons of particulate matter (PM) or 25,000 tons of carbon dioxide (CO₂) per year.

Internal Taxation Service Circular (to be defined)

To issue instructions on declaration and payment of taxes on pollutant compounds released by stationary sources, as stipulated in Law 21,210, Article 16⁵.

Registry of Sources and Processes (Ministry of the Environment, 2020)

Replaces the Registry of Boilers and Turbines that operated via the Uniform Public Service System (VU, for its initials in Spanish) of the Pollutant Release and Transfer Register (RETC, for its initials in Spanish) operated by the Ministry of the Environment (MMA) to register all establishments subject to the green taxes⁶. The new Registry of Sources and Processes specifies the administrative process applicable to stationary sources at establishments that release emissions. The procedure operates via the RETC VU system⁷. This registry also establishes the information required by the various sector systems linked to regulations on pollutant emissions. The information obtained serves as the basis for all sector systems, including those required by the Superintendency of the Environment (SMA, for its initials in Spanish), MMA, and the Ministry of Health (MINSAL, for its initials in Spanish), such as; the System of Thermoelectric Plants (SICTER, for its initials in Spanish), Green Tax System (SIV, for its initials in Spanish), and Electronic Form (F138). Establishments are entered into the registry only once, although it should be noted that the current green tax regulations (Ministry of the Environment Supreme Decree 18/2016) states that all taxable bodies must update their information in the event of any changes in the content items stipulated in Article 5, such as source type, operating hours, and load capacity.

4. A detailed description of the characteristics of the green taxes implemented in 2017 is available here: <https://www.4echile.cl/material-de-difusion/folletos-impuestos-verdes/>

5. Will replace Circular 47 (SII, July 2016).

6. For more details on how the Uniform Public Service System works, see: <http://vu.mma.gob.cl/index.php?c=home>

7. For more details on how the Uniform Public Service System works, see: <http://vu.mma.gob.cl/index.php?c=home>

Exempt Resolution 55: Approving instructions for measurement, reporting, and verification of emissions from stationary sources subject to taxation under Law 20,780, Article 8 (Superintendency of the Environment, January 2020)⁸

This is linked to the law that instituted green taxes. Establishes different methodologies for quantifying NO_x, SO₂, PM, and CO₂ emissions, for facilities subject to the tax (Title I), and specifies the administrative requirements necessary for reporting (Title II) and verification (Title III). The instructions will be amended to update their link to Law 21,210 and this to expand the emissions measurement, reporting, and verification protocols to new establishments (and their sources) that will be subject to the amended green taxes.

Green tax bylaw. Ministry of the Environment Supreme Decree (under development)

These regulations establish the definitions for the specification of facilities subject to green taxes, obligations and procedures for identifying applicable taxpaying bodies, and necessary administrative procedures for applying the tax⁹.

Offsets bylaw. Ministry of the Environment Supreme Decree (under development)

This will establish the new mechanisms: i) Project eligibility criteria; ii) Procedures, time frames, and requirements; iii) Certification standard; iv) Requirements for external auditors to become able to certify carbon reduction projects, authorized by the SMA; v) Homologation of international certifications, and vi) conditions applicable to the registration platform for applicable pollutant reduction projects.

Publication of annual list of taxable establishments. Ministry of the Environment Exempt Resolution (under development)

The resolution issued each year to determine the list of facilities subject to the tax, and districts declared as saturated or latent to calculate the tax. This will be an indicative list of information declared by each establishment¹⁰.

Emissions Reporting System – Operative platform (Superintendency of the Environment, 2017)

The SMA developed a platform for reporting emissions subject to taxation, which covered the establishments that were subject to reporting systems¹¹ and those subject to the green tax under Law 20,780, Article 8. The system is now to be extended to include further establishments, and probably new industrial sectors.

Exempt Resolution 659

Establishes technical provisions for the implementation of Law 20,780, Article 8 (National Energy Commission, January 2018). Regulations establishing procedures, time frames, and conditions for the suitable application of Law 20,780, Article 8 in the electricity sector.

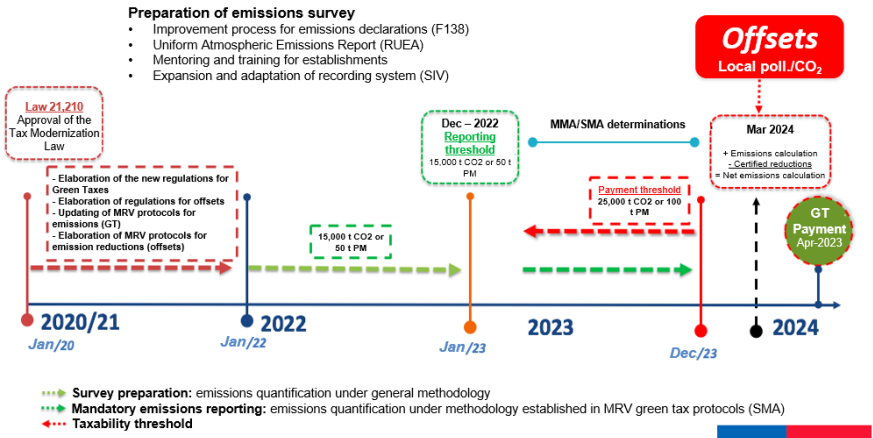
⁸ Replaces Exempt Resolution 1053 (SMA, 2016).

⁹ Will replace Supreme Decree 18 (MMA, 2016).

¹⁰ Example resolutions include Exempt Resolution 1,333 (MMA, 2016) and Exempt Resolution 1,578 (MMA, 2019).

¹¹ In 2011 the Ministry of the Environment published Supreme Decree 13, which established the emissions standard for thermoelectric plants. The implementation of this regulation requires emissions reporting from sources specified in Article 1 as "power plants that feature boilers or turbines with a thermal power rating of 50 MWT (megawatts thermal, as calculated from the upper limit of the fuel's energy value) or more".

Figure 1: Stages of the Green Tax and offset implementation process under the Tax Modernization Law (Law 21,210)



Principal Institutions Involved in Carbon Pricing Mechanisms¹²

Ministry of the Treasury:

This is the agency that defines the country's economic policy and, in particular, fiscal policy. Introducing environmental taxes affects both the form and the quantity of state revenue and creates economic incentives for households and businesses.

The decision to add these mechanisms to the country's fiscal policy is also in line with the Green Growth Strategy promoted by the Organisation for Economic Co-Operation and Development (OECD), of which Chile is a member state (Government of Chile, 2013). However, it should be made clear that the funds generated through these taxes cannot be earmarked for specific purposes, such as compensation for pollution in the health sector or subsidies for technological change¹³.

Ministry of the Environment (MMA):

The Ministry is the country's top regulatory body for environmental issues. It plays a dual role in the field of carbon pricing instruments. First, it is tasked with designing, implementing,

¹² Adapted from the Green Tax Regulations, Supreme Decree 18/2016. Available online: http://www.rtc.cl/wp-content/uploads/2016/12/DS_N18_2016_MMA.pdf

¹³ The Chilean Constitution prohibits the earmarking of taxes. Instead, all revenue must be placed in a national fund, from which it is distributed to meet the country's various needs. In this regard, offsets play a role in the distribution of direct financing for mitigation.

and evaluating environmental public policies, plans, and programs, and promoting sustainable development in line the country's applicable international commitments.

Meanwhile, in terms of tax administration, the Ministry is in charge of managing both the Registry of Boilers and Turbines, for the purpose of preparing an annual record of facilities subject to green taxes, and the coming registry of items including green tax offset projects.

Superintendency of the Environment (SMA):

In general terms, the SMA is Chile's lead environmental oversight body. It has been tasked with drawing up guidelines (protocols) that establish the standards that must be followed by liable facilities in monitoring, reporting, and verifying emissions, both for green taxes and for offset projects, in which case it is in charge of ensuring that all reductions are in addition to initiatives imposed under decontamination plans, emissions standards, environmental classification resolutions (RCAs), and other legal obligations.

Specifically, the Superintendency stipulates minimum operating requirements, quality control specifications, and assurance mechanisms for emissions monitoring or estimation systems used for emissions declarations, the registry of taxable emissions at establishments stipulated by the regulatory body, and verification of information. It is also the body tasked with authorizing external auditors to certify emissions reductions associated with specific projects.

The SMA uses this information to consolidate annual emissions information for all applicable establishments. It is also responsible for compiling all information necessary for calculating the tax payable, including discounts for offsets.

Internal Taxation Service (SII):

This is the agency responsible for calculating the tax payable for each taxable facility. Information provided by the SMA is used for this purpose.

General Treasury of the Republic:

Institution tasked with collecting the tax in April of each year, accrued during the previous year, based on information provided by the SII.

National Energy Commission (CNE, for its initials in Spanish):

This is the agency tasked with setting technical provisions for the application of the final section of Article 8 of the Tax Reform Law (Law 20,780), which stipulates that in the electricity sector, the tax "must not be included when calculating the marginal cost of power at any given time when it applies to the system's marginal generation unit. However, for units with a total unit cost, calculated as the variable cost including transmission plus the unit tax cost, that is greater than or equal to the marginal cost, the difference between the value of power input at marginal cost and said at total unit cost must be paid by the power companies that source electricity from the system, prorated against such withdrawals". These provisions are currently established under CNE Exempt Resolution 659, described above. The new Tax Modernization Law, Law 21,210, requires the CNE to prepare a Resolution in reference to the new legislation.

Steps in the Process of Calculating Collection of Green Taxes and Offsets

Step 1. Identification of establishments subject to taxation

Prior to the entry into force of the first green taxes on stationary sources (2017) the Ministry of the Environment prepared a Registry of Boilers and Turbines, kept in the RETC Uniform Service System. All individuals and legal bodies that own one or more boilers and/or turbines with a rated thermal power level of 5 MWt or more are obliged to register (Ministry of the Environment, 2016). The Ministry of the Environment uses this information to draw up a list of facilities liable for taxation each year, for information purposes.

Next, given that most establishments are subject to more than one regulatory obligation linked to their emissions, and with the goal of organizing and perfecting the emissions reporting system, the Ministry of the Environment prepared the Registry of Sources and Processes (stored in the RETC). This registers all establishments subject to compliance with Ministry of Health Supreme Decree 138/2005, which 'Establishes the Obligation to Declare Emissions'. This registry is used to prepare the Uniform Atmospheric Emission Report (RUEA, for its initials in Spanish), which contains information such as the emissions of establishments governed under the Emissions Standard for Thermoelectric Plants (Ministry of the Environment Supreme Decree 13/2011 - Thermoelectric Plant Information System – SICTER, for its initials in Spanish) and the Green Taxes System – SIV, covering all establishments subject to green taxes, including those not subject to SICTER reporting requirements.

The significance of the RUEA derives from the fact that the new threshold for determining what establishments are to pay green taxes is based on their annual emissions, not on their technical characteristics, thus requiring consolidated reports on all sources, processes, and emissions. The improved information quality also allows further enhancement and expansion of the economic instruments applied to environmental policy. The Ministry of the Environment will use the RUEA to issue an instruction in 2023, by means of an Exempt Resolution, to inform affected establishments. The new Green Tax Regulations are therefore to indicate the specific steps to be taken in advance by establishments for their records in the registry, the operability of the RUEA, and the determination of which establishments are subject to the tax.

Step 2. Emissions quantification

All boilers and turbines that belong to a facility subject to the tax are currently obliged to use a pollutant emission monitoring or estimation system. Monitoring is the direct quantification of emission concentrations, by sampling or measurement¹⁴. Meanwhile, estimation is conducted by means of indirect emission quantification mechanisms, based on emission factors and activity levels.

The guidelines on quantifying emissions stipulates that facilities may select a methodology for each emissions source, regulated parameter, and fuel type, depending on the applicable

14 Applicable bodies must use the Ministry's Uniform Public Service System to report information to determine whether or not they are subject to the tax; this information includes Source type; Power and rated thermal power of the source (MWt); and Rated fuel consumption.

15 Los sujetos obligados deben informar al Ministerio (mediante el Sistema de Ventanilla Única) una serie de antecedentes relevantes para identificar si se encuentran afectos, entre los que se encuentran: Tipo de fuente; Potencia y la potencia térmica nominal de la fuente (MWt); Consumo nominal de combustible; entre otros.

environmental regulation standard. Seven methodological options for emissions quantification have been established, divided into three groups:

- Two options for emissions quantification with continuous emissions monitoring systems (CEMS) and alternative methods;
- Two options for emissions quantification by sampling and measurement with reference methods;
- Three options for emissions quantification by emission factors.

Additionally, when an establishment subject to the tax is unable to apply any of these options, it may propose an alternative quantification methodology; this methodology must be internationally accepted and supported with the necessary technical background information for it to be evaluated.

As the pollutants covered under the green taxes remained unchanged in the Tax Modernization Law, the applicable methodologies for measuring or estimating emissions will remain valid. The suit of methods may be expanded as establishments in new industry sectors join the system. Just as Supreme Decree 13/2011 plays a significant role in regulatory consistency for the electricity sector, the same is likely to apply for the mining sector with Ministry of the Environment Supreme Decree 28/2013, on emissions from copper smelters and arsenic emission sources, and for raw material transformation processes with Ministry of the Environment Supreme Decree 29/2013, which provides emissions standards for incineration, co-incineration, and co-processing.

Step 3. Emissions reporting

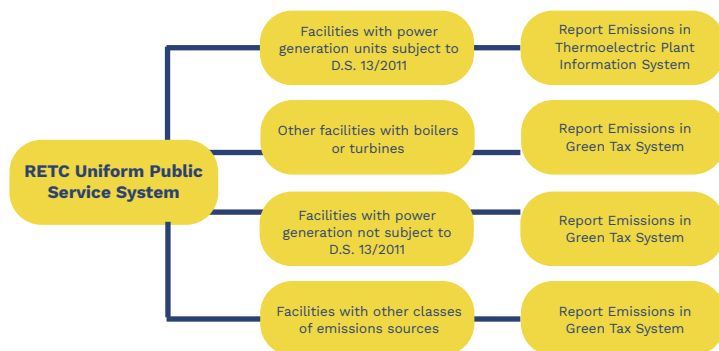
Taxable bodies currently submit an emissions monitoring or estimation report, in accordance with the general guidelines stipulated by the SMA. Reporting takes place on a quarterly basis. Thermoelectric power plants, which are subject to Supreme Decree 13, will continue to use the Thermoelectric Plant Information System (SICTER) for reporting. Meanwhile, power plants not covered under that decree and other establishments subject to the tax must use the Green Tax System (SIV) for reporting.

Under the 2020 Tax Modernization Law, all establishments that report to SICTER or the SIV and that meet the taxable threshold (25,000 tons of CO₂ or 100 tons of PM per year) must continue reporting in the same way. The SIV will also receive reports from establishments that, under procedures to be determined in the new regulations, surpass the threshold¹⁶.



¹⁶ Reference emissions will be gauged using information available in the RUEA, although precisely how this is accomplished will be determined in the applicable regulations.

Figure 2: Emissions declaration mechanisms, by type of establishment and applicable regulations



Source: Prepared for this document

Step 4. Emissions consolidation

As part of its role in applying the taxes established under current legislation, the SMA is tasked with consolidating the emissions declared by each facility subject to the tax in March of each year and then providing the Internal Taxation Service with all information necessary for calculating the sum payable. This information includes:

- Identification of the applicable establishment and the rated power (in thermal megawatts) of the sources that it operates;
- Emissions of PM, NO_x, SO₂, and CO₂ in tons;
- District and applicable air quality coefficient¹⁷;
- Population of the district, in accordance with official projections published by the National Institute of Statistics (INE, for its initials in Spanish) for the year in question;
- List of districts that have been declared as saturated or latent for the purposes of applying the air quality coefficient.

The SMA also submits an individual report to the National Energy Commission (CNE) and the National Electricity Coordinator (CEN, for its initials in Spanish), containing the consolidated and hour-by-hour emissions released at all power plants subject to their coordination, for use in establishing an individual annual prorating for the tax¹⁸.

Step 5. Registration and validation of offsets

The regulations that are to stipulate the details of how the emission offsets will be implemented are currently under discussion, with the Ministry of the Environment as lead agency. However,

¹⁷ Only applicable for local pollutants.

¹⁸ Process defined by the CNE under two exempt resolutions: ER 659/2017 and ER 52/2018. Available at <https://www.cne.cl/nuestros-servicios/resolucion-exenta-impuesto-emisiones>

under the 2020 Tax Modernization Law, it is known that establishments subject to green taxes may offset any percentage of their taxable emissions, by means of additional, measurable, verifiable, and permanent reductions for the same taxable pollutants¹⁹. In practice this means developing (or homologating) a complete MRV system. It must also be verified that the reductions in question are additional to any reductions required under other environmental oversight mechanisms.

Reduction projects must submit a request to the Ministry of the Environment, which is to issue an exempt resolution with its judgment on the case within no more than 60 working days from the date of receiving all information and documentation necessary to verify compliance with the applicable requirements to evaluate whether the project is admissible. Accreditation of emissions reductions are to be certified by an external auditor authorized by the SMA.

Once the SMA has received verification that the emissions reduction project has been implemented, it will calculate the net emissions (taxable emissions, minus offsets), and will remit this information to the SII for calculating and collecting the tax.

Step 6. Tax calculation and payment

The Internal Taxation Service uses the information provided by the SMA to calculate the taxes payable, in the manner and time frame established. Payment must then be made to the General Treasury of the Republic in April of the calendar year following the year in which the emissions in question were released, in Chilean currency, at the current exchange rate on the date of payment, in accordance with the tax issued by the SII.

Step 7. Payment prorating by the National Electricity Coordinator

The law establishes that when the total unit cost for power companies (calculated as the variable cost including transmission plus the unit tax cost) is greater than or equal to the marginal cost, the difference between the value of power input at marginal cost and at a said total unit cost must be paid by the power companies that source electricity from the system. Therefore, by June of each year, the Coordinator must release a Compensation Balance, containing the amounts for compensation of each power generation company for the previous year²⁰.

Inter-Institutional Relationships

The process of building institutional links involved the participation of a group of representatives of the Ministry of Finance, the Ministry of Energy, the Ministry of the Environment, and certain related services, as well as the National Energy Commission, the National Electricity Coordinator, and the Superintendency of the Environment. In this framework, the process for implementing green taxes places a challenge on the entire state apparatus²¹. Subsequently, a year

19 It should be noted that reductions in local pollutants must take place in the same districts where the emissions take place (or an adjacent district if otherwise inapplicable), while the law does not require CO₂ reductions to take place exclusively within Chilean territory. CO₂ emissions cannot be offset with reductions in other GHGs under the green tax framework.

20 For details on the formula for calculating compensation, see: National Energy Commission (2018). Exempt Resolution. Establishing technical provisions for the implementation of Law 20,780, Article 8. Available online: <https://www.cne.cl/nuestros-servicios/resolucion-exenta-impuesto-emisiones/>

21 An inter-ministerial technical-regulatory team was established, with regular meetings during the stage of drawing up procedural rules (Ministry of the Treasury, 2015).

after the mechanism came into force, and with the objective of evaluating the entire operating process of the new system, these institutions were joined by bodies tasked with collecting taxes - the Internal Taxation Service and General Treasury of the Republic, respectively - thus creating a full institutional framework associated with the operation of the tax, facilitating the implementation of adjustments to the green tax system and the implementation of offsets.

The Role of **Internacional Cooperation**²²

As a member of the Partnership for Market Readiness, spearheaded by the World Bank, Chile has received resources for:

1. A feasibility study for one or more tools for setting carbon prices in the energy sector, including regulatory, institutional, and economic analysis necessary for implementation.
2. Design and implementation of an MRV and registration system to underpin the operation of green taxes, and
3. Communication and participation strategy for different stakeholders relating to the tools under evaluation.

With these objectives, the PMR collaborated in the implementation of green taxes and the design of MRV protocols. It has facilitated both local and international discussion opportunities, and dialogue with companies subject to green taxes, so as to raise awareness of the regulations and guidelines for implementing them.

The Global Carbon Market (GCM) project, spearheaded by German Corporation for International Cooperation (GIZ, Deutsche Gesellschaft für Internationale Zusammenarbeit), has undertaken a number of activities and prepared a series of products that complement the actions of PMR. It has thus contributed to the strengthening of technical capacities in both the public and private sectors, and has published a series of technical documents that facilitate discussion and dissemination of policies relating to carbon pricing mechanisms.

²² Ministry of the Environment (2016). Chile's Third National Communication to the United Nations Framework Convention on Climate Change. Available online: <http://portal.mma.gob.cl/wp-content/doc/TCN-2016b1.pdf>

Conclusion

The implementation of a green tax system for stationary sources of emissions, which entered into force in 2017, has allowed a number of Chilean institutions to work together to create a new technical mechanism, develop working relationships between ministries and agencies, forge new public-private relationships, and lay robust foundations of knowledge and information for implementing the tax, thus enhancing environmental management and consolidating a more complex and comprehensive institutional framework.

The consolidation of this institutional structure not only forms the basis for implementing the modifications established in the new tax reform, but also can be expanded to cover a greater scope, helping meet the challenge of instituting a new environmental oversight mechanism, in this case offsets, and laying the foundations for the implementation of further systems, such as those proposed in the Climate Change Framework Bill.



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