

## Just Energy Transition in Coal Regions

March 2024

### CASE STUDY

# Progress achieved in the retirement of coal facilities in Chile and the definition of a Just Energy Transition Strategy

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#### Key Takeaways

- The approach defined to address the energy transition must be tailored to the challenges and needs of the affected areas.
- Affected areas with a strong economic reliance on coal generation facilities must be prioritized in a just energy transition.
- Shutting down coal facilities in the energy transition creates the challenge to create jobs which are of equivalent or greater quality in the affected regions.
- It is necessary to gain the support of the key stakeholders to advance towards a faster energy transition.
- It is important to develop processes which will allow for the review and adjustment of the policy and actions defined in order to accommodate for new challenges and needs that emerge as the energy transition evolves.
- Complexity increases as too many actions or stakeholders are involved in the process to face the energy transition. There is a coordination challenge amongst involved stakeholders and ensuring there are enough resources to execute the defined actions. Prioritizing concrete actions could lead to tangible progress.

# 1. Background on retirement of coal facilities in Chile

In 2019, there were 28 coal power units distributed amongst six locations in Chile. Each unit was co-located with other units in a coal generation facility where infrastructure was shared. Three of the four owners of these coal facilities were foreign companies which included: Enel (Italian), AES Andes (USA) and Engie (France). The total coal installed capacity in Chile reached 5525 MW in 2019. However, today only 20 of 28 continue to operate. The majority of the units still operating have a lifetime of less than 15 years and the newest unit started operations in 2019.

Recently Chile committed to achieve carbon neutrality by 2050. The commitment was made in the National Energy Policy and the Long-Term Climate Change Strategy as part of the Climate Change Law which passed in the year 2022. The Long-Term Climate Change Strategy was defined as part of the Climate Change Law and defines the initiatives that Chile has committed to in order to address climate change challenges and transition to a carbon neutral economy. Within the Climate Change Law emissions goals and budgets are defined for each sector. Specifically in the energy sector the following four goals are defined:

- By 2025, 65% of the coal units will be retired or reconverted.
- By 2030, 80% of the electricity produced in the country must be renewable. The electricity system must be ready to achieve this goal.
- Work and initiatives will be conducted to ensure that coal facilities can be retired or reconverted during the first couple of years of the next decade.
- By 2050, 100% of the electricity produced must come from zero emissions sources.

The policies to retire or reconvert coal units in Chile has been supported by three different government administrations which have been in power since the policies were first introduced.

In January 2018, the Ministry of Energy and the companies which own coal generation facilities agreed to the following:

- Not to develop new coal generation facilities unless the carbon emissions are captured.
- Establish a working group led by the Ministry of Energy with key stakeholders in the public, private, academic and non-government organization sector to review the social, environmental, economic, workforce and technical implications of a gradual retirement of coal generation facilities.

In June 2018, the Chilean government established the “Energy Decarbonization Working Group”. The objective of the working group was to conduct a multidisciplinary analysis of the impacts of retiring the coal generation facilities in Chile. The working group included stakeholders from non-government organizations (NGOs), the community, public sector, universities, industry association, local government, and international organizations. Monthly working sessions were held until January 2019 when the results of the working group were presented.

After the working Group concluded, bilateral agreements were signed between the Ministry of Energy and each of the companies which owned the coal facilities. The owners and operators of coal generation facilities made the following voluntary commitments:

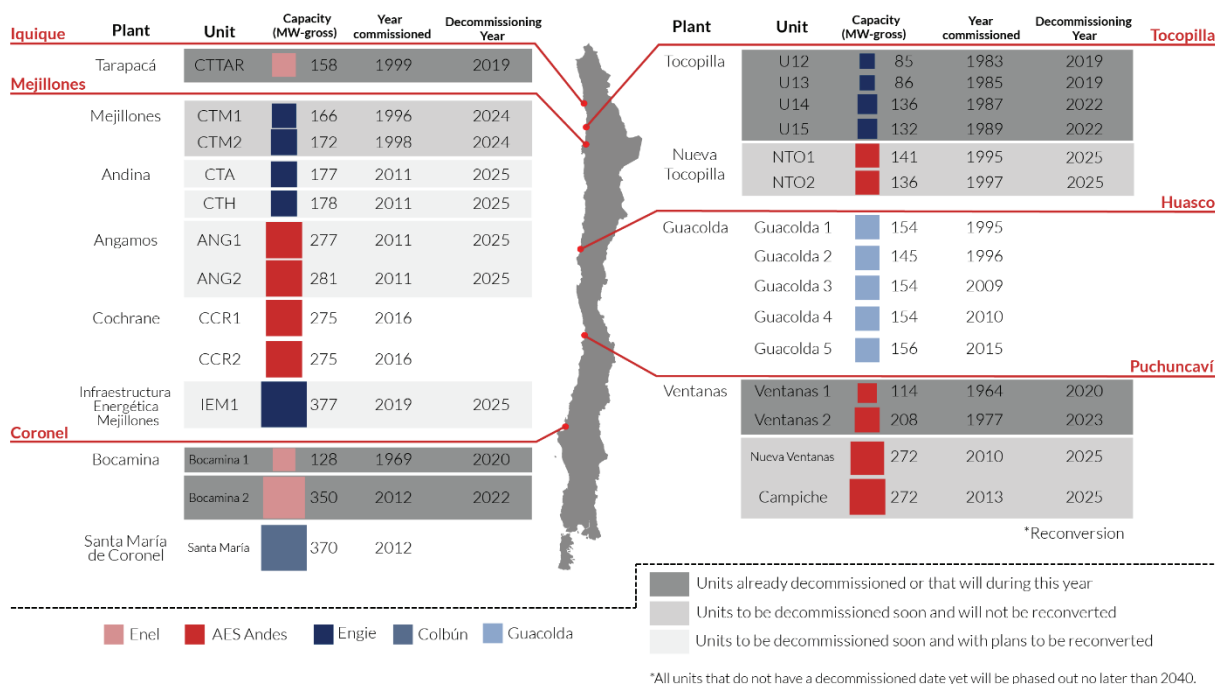
1. Not to develop new coal projects without carbon capture.
2. Retire all coal facilities by 2040 at the latest.
3. Create a new working group every five years with the Ministry of Energy to evaluate the effects of retiring more coal generation facilities.
4. Retire eight units which represent 1047 MW of capacity by 2024 (19% of total capacity).

The voluntary agreement signed between the coal facility owners and Ministry of Energy was published in the Ministry of Energy’s N° 50/2020 decree.

The working group agreed to define the “Strategic Reserve Condition” (SRC) for coal generation units. Under such condition, the unit that is retired can remain available as a strategic reserve for a period of 5 years in case of system scarcity. The facilities which opt for the SRC condition should be remunerated based on the available capacity.

Post the initial agreement, the companies on a voluntary basis decided to expand their retirement commitments. Between 2019 and 2023, the intention to retire or reconvert an additional 12 units was announced by the companies. In summary, by the end of 2025, if the electricity system conditions are favorable, 20 out of the 28 coal facilities in Chile will be retired or reconverted. The capacity committed for retirement represents 71% of the coal units in the country. At the moment, none of the facilities have opted for the SRC state, however, five units have presented their intention to reconvert the facility.

**Figure 1. Attributes and retirement date for coal facilities in Chile.**



Source: Inodú.

Chile has made significant progress in the integration of renewable energy. In 2017, 61% of the electricity generated was produced by coal and gas generation facilities. Hydroelectric facilities generated 25% of Chile's electricity, while solar and wind only generated 8%. Today, in the last 12 months 31% of the total energy was solar and wind. During some hours of the day the solar and wind generation accounted for 71% of the system's generation (see **Appendix 1**).

The energy systems transition has been enabled by several factors including regulatory changes, favorable conditions for solar and wind generation in some regions of the country, cost reduction in renewable technologies, renewable energy requirements in long term energy contracts, amongst others. The policy to retire and convert coal facilities has remained consistent across three different government administrations and has been enabled by the collaboration and commitment of multiple stakeholders, including the owners of the coal facilities.

## Economic and workforce challenges associated with the shutdown of coal facilities

Chile does not produce coal, however, coal generation has been an important part of Chile's energy mix. The coal that is consumed by Chile's coal generation facilities is imported by ships. Therefore, besides the jobs created by coal generation facilities in the energy and industrial sector, there are also jobs at ports from the handling of coal.

All coal generation facilities are located in coastal areas which have primarily industrial activity. There are two types of coastal areas where the facilities are located: areas with high industrial activities and areas with high economic dependence to the coal generation facility.

In areas with ports and high industrial activity, in principle, closing coal generation facilities wouldn't significantly impact the community. However, the areas with high economic dependence to the coal generation facility do not have many work alternatives to working at the facility. Therefore, shutting down the coal generation facility could significantly impact the local economy and demographics if other job sources are not developed in the region.

## **2. Actions to approach the energy transition challenges with justice: The strategy to bring justice to Chilean energy transition**

The challenges created by the retirement of coal generation facilities has led to development of policy to ensure a just energy transition. The policy aims at ensuring that the transition to carbon neutrality of Chile considers a just social and environmental development which promotes the creation of jobs which improve the quality of lives of people.

The “Just Energy Transition Strategy” was published in December 2021, establishes the framework for the just transition of the energy sector, starting with the shutdown of coal facilities followed by other transformations which will establish the future of the energy sector<sup>1</sup>.

The strategy emerged as a response to the commitments made in the Updated National Determined Contribution (NDC) in Chile in April 2020, which considered the impact of shutting down the coal facilities in the involved workforce.

The strategy considered a broad participation process in which workshops were created for: unions, local citizens, and the broader population. The feedback received at the workshops was provided to a working group with representatives from all sectors and responsible to develop the strategy. The strategy was reviewed by various Ministries including Energy, Labor, Environment and Economy. Additionally, the strategy was reviewed by the Gender and Climate Change working group which was responsible to incorporate a gender viewpoint. Further, international human rights and corporate organizations such as the UNHCHR ILO, UNICEF, OCDE incorporated their comments. Finally, the strategy was part of a public consultation process, which resulted in the reception of several observations and their incorporation into the strategy.

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<sup>1</sup> Available at: <https://energia.gob.cl/mini-sitio/estrategia-de-transicion-justa-en-energia>

A translated version of this strategy (from Spanish to English) has been included at the end of the report.

The Just Energy Transition Strategy considers a plan with 4 pillars, 8 initiatives and 32 actions:

1. One pillar with focus on the people
  - a. Promote employment and the development of the population which will be negatively affected by the shutdown of coal facilities. Support the development of new sources of employment or new business activities within or outside the energy sector.
  - b. Improve social wellbeing of the affected people, workforce, and community. Including the most vulnerable and those impacted by the shutdown or reconversion of coal facilities.
2. Economic development and productivity support
  - a. Promote new investments into the areas affected by the shutdown or reconversion of coal facilities.
  - b. Promote the research, development and innovation focused on the creation of new services or productive endeavors in the areas affected by the shutdown or reconversion of coal facilities.
3. Environmental development and territorial focus
  - a. Strengthening of the regulatory framework aimed to increase the feasibility of projects for new uses of the spaces or infrastructure associated to the coal facilities.
  - b. Development of new uses for the spaces or infrastructure associated to the coal facilities and development plans which are aligned with the desires of the affected areas.
4. Governance with focus on participation and public/private involvement
  - a. Design of a governance framework which enables the execution and management of the initiatives defined for each area. Additionally, a broad social diffusion must be encouraged when the initiatives are implemented.
  - b. Facilitate and articulate the financial support for sector policies and private initiatives which allow for a coordinated and coherent set of actions which lead to a just and sustainable transition from the shutdown and/or reconversion of coal facilities.

The implementation of the Just Energy Transition Strategy will create relevant coordination challenges for a diverse set of stakeholders. To execute the 32 actions defined in the Just Energy Transition Strategy, 47 interest groups were identified which included organizations within the public sector, private sector, NGO sector and the broader population. Ten interest groups have the responsibility to lead the execution of the defined actions. Four Ministries will lead a total of 26 actions. Plus 16 interest groups should be involved in at least 5 actions simultaneously. The unions must collaborate in 25 actions. Finally, 27 actions require the coordination of more than three interest groups. Therefore, a challenge will be to create and maintain the communication interfaces and the participation of the involved stakeholders (see **Appendix 2** for a broader vision of the interaction between objectives, initiatives and involved stakeholders).

The Just Energy Transition Strategy is the general framework which should be implemented in the affected areas through the local action plans in the districts where the coal generation facilities are located.

In 2022, the Ministry of the Environment expanded the concept of just ecological transition to just socioecological transition which includes developing decent jobs. The Ministry of Energy incorporates the new definition adopted by the Ministry of Environment to the Just Energy Transition concept. The Just Socioecological Transition (JST) is defined as the process to empower Chilean society through participation and transformation. The transformation is focused on evolving the economic model from reliance on extraction centered industries, which are impacted by the climate crisis and are related to ecological vulnerability, to an economic model focused on innovation and sustainability. Additionally, the Ministry of Environment hopes that such an economic model will lead to a reduction of income inequality, enhance environmental and social justice, decent labor, and the maximization of the population wellbeing by re-establishing the ecological balance.

The socioecological transition was defined as a concept which involves all economic sectors, not only energy, therefore an interministerial coordination is required, for which an Interministerial Committee for the Just Socioecological Transition (ICJST) was created. The ICJST has the primary objective of advising the President of Chile in the areas where policy could be developed, or institutions can be transformed to advance in the just socioecological transition. The ICJST includes the Ministry of Environment who leads the committee, Ministry of Energy, Ministry of Social Development, Ministry of Energy, Ministry of Labor, Ministry of Economy, Ministry of Mining, Ministry of Health and the Ministry of Women & Equality in Gender and Education<sup>2</sup>.

An Office of Just Socioecological Transition was created as part of the Ministry of Environment, whose goal is to lead the local operations of the JST. To facilitate the implementation of the strategy at the local level, local action plans for the JST were defined through the revision and updating of an existing mechanism call the Programs for the Social and Environmental Recovery (PSER or PRAS by its acronym in Spanish).

Starting in 2022, the Ministry of Environment leads the implementation of the Just Socioecological Transition and definition of local action plans. The Ministry of Energy and other members of the ICJST, will continue to collaborate through their plans and programs to achieve the goals defined in the JST.

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<sup>2</sup> Interministerial Committee for the Just Socioecological Transition (ICJST) defined in Decreto Supremo N° 57 of 2022 by Ministry of the Environment.

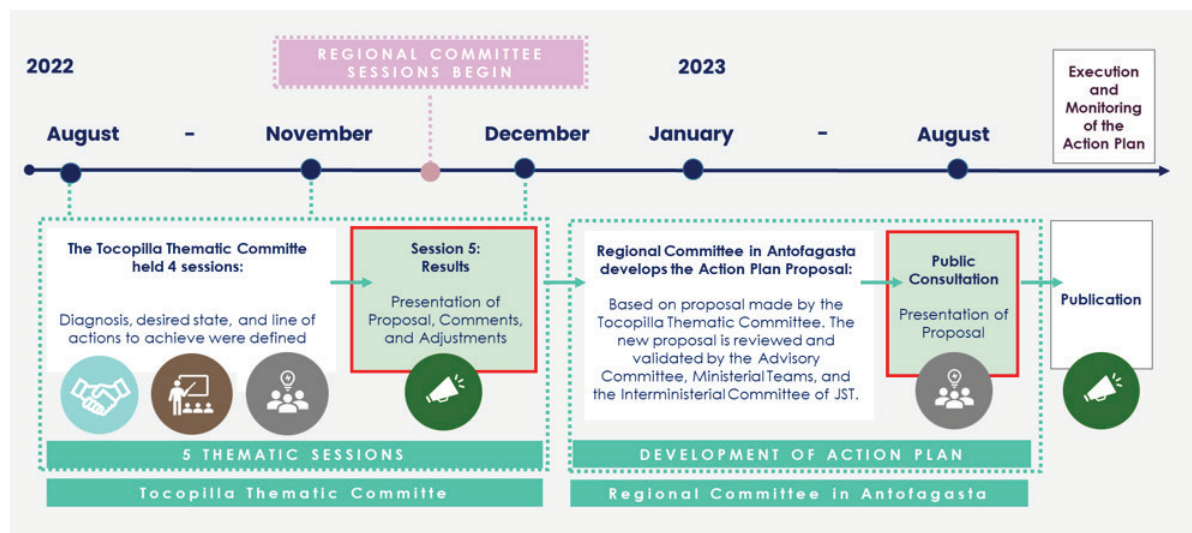
### 3. Just Energy transition challenges in a zone with high dependency of coal power generation: Case study for the initial definition of the Just Socioecological Transition Plan for Tocopilla

After the publication of the Just Energy Transition Strategy, the Ministry of Energy began the process to develop local action plans for the strategy with the province of Tocopilla. Tocopilla has experienced the retirement of coal generation facilities and historically the economic activity in the region has been highly dependent on the coal generation facilities.

Between August and December 2022, a participation process was developed which considered monthly activities and incorporated representatives from the community, the municipality, the regional government, the owners of the thermoelectric facilities, other local companies, unions, regional authorities, and NGOs.

The participation process considered the Just Energy Transition Strategy. The following four topics were of interest to the participants, Local sustainable development, Environment, Health and Human Capital. UNICEF was involved in the participation process to bring in the observations and contributions from adolescents and children in the region. The outputs produced by the participation process were presented to a Regional Committee in Antofagasta which worked between December 2022 and August 2023 to review and contribute to the proposals made by the working group in Tocopilla. The initiatives proposed in Tocopilla were complemented and organized by the Regional Committee into the following areas: Energy, Environment, Social and Economic Development. The final proposal was reviewed by the ICJST, which was published for public comments on August of 2023. Following the public comment period, the final version will be published and the implementation of the proposal will be led by the Ministry of the Environment.

**Figure 2.** Process to develop Just Socioecological Transition Plan in Tocopilla.



Source: Ministry of Energy

The Just Socioecological Transition Plan of Tocopilla further defines local actions associated to the topics presented in the National Just Energy Transition Strategy. Some of the actions are aligned with the National Just Energy Transition Strategy, however, some of the actions cover new areas not included in this Strategy. The local plan covers 115 actions for which the participation of 58 interest groups will be required. Similar to the national strategy, the number of interest groups involved in implementing the Just Socioecological Transition Plan of Tocopilla will pose challenges on the coordination of the involved stakeholders and complexity in the execution of the proposed actions.

In the environmental realm, 17 actions were defined: to strengthen the process used to determine the state of the soil at the facilities, to increase information transparency around air quality and to assess the water quality and state of sediments. Additionally, there are actions which are related to environmental education and 3 actions related to public participation.

The local plan proposes 10 actions to improve infrastructure and health services, 7 actions related to community health training and 13 actions related to education specifically associated to social development. These proposed actions place focus on people during the transition.

There were 31 organizations identified to lead the 115 actions. The Ministry of Energy is responsible for leading 14 actions, the Ministry of the Environment 7 actions, the Ministry of Economy 11 actions, the Ministry of Education 7 actions, Ministry of Health 12 actions, the Energy Regional Office 6 actions, the Environment Regional Office 10 actions, the municipality of Tocopilla 23 actions, Engie 7 actions, amongst others.

In 103 proposed actions the need for more than three stakeholders to interact will be required. The Municipality of Tocopilla, is responsible for leading 23 actions, however it will have to participate in 66 actions. The regional government leads only 1 action but it will be required to participate in 69 actions. The Regional Office of Health will participate in 29 actions, in which it leads 3. The Regional Office of Energy aside from leading 6 actions has to participate in 16 others. The Regional Office of the Environment leads 10 actions and has to contribute to 12 others. The Regional Office of Education has to contribute to 18 actions. Institutions like SERCOTEC and CORFO participate in 23 and 24 actions respectively.

## 4. Main challenges and lessons learned

The implementation of the Just Energy Transition Strategy will generate coordination challenges between stakeholders in the public sector, private sector and community. However, through effective communication and participation, the stakeholders could be mobilized to implement the Just Energy Transition Strategy in the areas of interest. Specifically, in Tocopilla, regulatory, governance and management challenges exist. The following challenges and lessons are identified:

- The Just Socioecological Transition Plan of Tocopilla contains 115 actions which involve 58 stakeholders. In the plan there are actions which address the existing local needs, however, these needs will evolve in time, especially as the coal facilities are shutdown. Therefore, to ensure the effectiveness of the strategy over time, the actions which could evolve considering changing needs and challenges should be identified. Approximately 54 actions could have low impact to the needs and challenges that the region will face once the coal facilities are shutdown. Hence, it is important to simplify and focus the local strategy, considering the challenges in management and in obtaining resources to execute actions. Additionally, a process and timeframes should be defined to review and update the plan.
- The actions defined have a broader scope beyond the energy sector, which require the involvement of the broader population plus local (regional offices and municipality), regional, public, and private organizations. Therefore, it is important to provide the organizations with the necessary resources so they can manage and execute the defined actions. Hence, there will be a need to define the necessary management structure including assigning the responsibilities adequately so the actions can be managed, implemented, and monitored in the regions of interest. These actions will have to be coordinated with other national stakeholders specially the ICJST.
- It is important to strengthen the Office of Just Socioecological Transition's capacity to support the implementation of local strategies, considering the establishment of the ICJST. The Office of Just Socioecological Transition and the Regional Office of the Environment in Antofagasta will have to lead the Just Socioecological Transition Plan of Tocopilla, which involves coordinating the actions of the involved parties.
- Currently, districts with high levels of electricity generation receive a discount on their electricity rates. Therefore, when the coal generation facilities are shutdown, the rates for the surrounding community will rise, creating a challenge. It is desirable to continue to keep the existing regulation in place to align with the 2023-2030 action plan to protect rates and energy poverty<sup>3</sup> and avoid significant rises in rates for the regulated clients<sup>4</sup> where the coal generation facilities will be shutdown. The discounted rates are defined in the rate equity law (Ley 20938<sup>5</sup>) for communities which are nearby generation facilities.

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<sup>3</sup> [https://energia.gob.cl/sites/default/files/documentos/plan\\_proteccion\\_tarifaria\\_pobreza\\_energetica\\_abril\\_2023.pdf](https://energia.gob.cl/sites/default/files/documentos/plan_proteccion_tarifaria_pobreza_energetica_abril_2023.pdf)

<sup>4</sup> Regulated clients in Chile are electricity consumers with an assigned capacity of less than 500 kW and are supplied by distribution companies.

<sup>5</sup> The objective of the rate equity law is to adjust electricity rates based on location considering if the location is affected by the impact of local generation. The shutdown of coal units will have an impact on the electricity rates of the affected communities.

- In the Just Energy Transition Strategy, the objective to look out for the wellbeing of the direct and indirect workforce of the generation facilities is defined. However, this same objective is not clearly articulated in the Just Socioecological Transition Plan of Tocopilla. The Ministry of Energy has committed to provide information to the stakeholders in the affected zones in order improve the public policy definition process.
- The Just Energy Transition Strategy and Just Socioecological Transition Plan of Tocopilla set the objective of promoting investment into and developing the areas affected by the shutdown of coal generation facilities. There is a risk, that the actions defined will not be able to attract similar work quality to the areas where the facilities will be retired. Therefore, there are challenges to define public policies and adequate financial incentives to maintain public support to the economic transformation of the affected regions.
- It is desirable to incentivize that the companies which own the coal facilities to conduct extra shutdown and dismantling activities which were not committed as part of the environmental permit (environmental qualification resolution) or in other activities defined in the local action plan.
- The option exists for units to become a strategic reserve to protect against a scarcity scenario. However, currently none of the units have opted to become a strategic reserve. As the retirement process evolves, in the short to medium term it could be beneficial to keep certain units as strategic reserve in order to improve the adaptability and resilience during the energy transition.

### **Further recommendations**

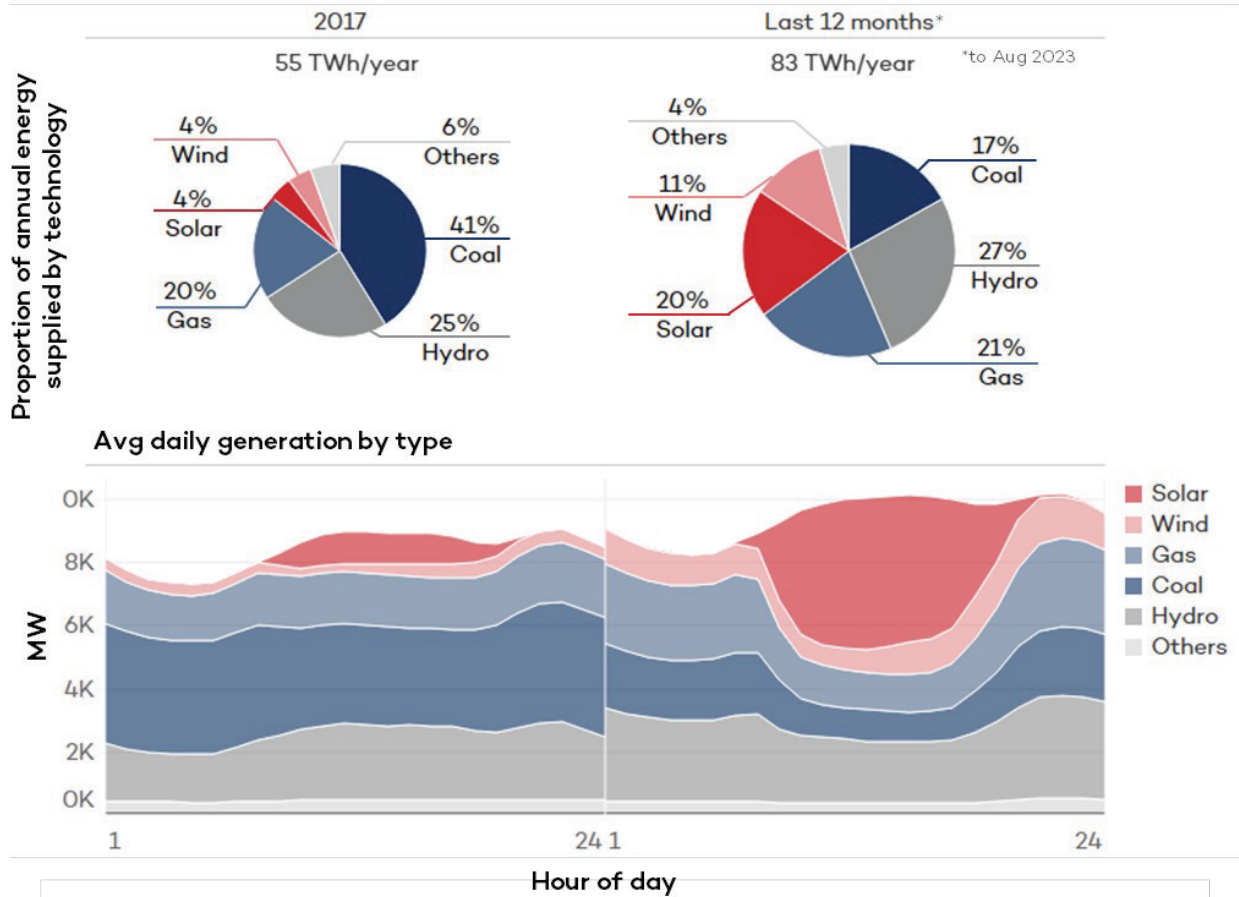
The Chilean government has developed several elements to address the energy transition and the Just Socioecological Transition. The elements include: policy, plans, programs, a new institution (the Interministerial Committee for the Just Socioecological Transition), and some novel processes (for example: youth participation, institutional reviews for gender and human rights, etc.).

However other factors will impact the energy transition, such as regulatory changes, favorable conditions for solar and wind generation, amongst others. Additionally, in order to make progress on the shutdown of coal generation facility the commitment and collaboration of other stakeholders has been important.

The collaboration and commitments made by diverse set of entities including the owners of the coal generation facilities, have been key to the energy transition. The progress achieved through collaboration highlights the need to further incentivize collaboration to achieve an ambitious transformation of the affected areas.

## 4. Appendixes

### Appendix 1. Evolution of the energy mix from 2017 to present.



Source: Inodú.



**Appendix 3: Just Energy Transition Strategy – Part I: Following-up the closure and new uses of coal-fired power plants in Chile (English translation)**



## Just Energy Transition Strategy

Part I: Following-up the closure and new uses of coal-fired power plants in Chile.

Ministerio de Energía | 2021



## Just Energy Transition Strategy

### Part I: Following-up the closure and new uses of coal-fired power plants in Chile

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Special thanks to the 25 people who made up the Work Group for the preparation of the Just Energy Transition Strategy, as well as UN-Human Rights, ILO, OECD, which, within the framework of the Project on Responsible Business Conduct in Latin America and the Caribbean, financed by the European Union, and UNICEF, accompanied the process of preparing the Just Transition Strategy, reviewing it within the framework of Human Rights and Companies. They are also thanked for their substantial contribution to the Gender and Climate Change National Committee, which analyzed the strategy for incorporating a gender approach.

Edition and design:

Carlos Barría Q. – Javier Obach M. – Carolina Gómez A.

All the information regarding the Just Energy Transition Strategy is available on the following website: <https://energia.gob.cl/mini-sitio/estrategia-de-transicion-justa-en-energia>

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## Words from the Minister of Energy

Juan Carlos Jobet Eluchans



We are in the midst of crucial times to face the climate crisis. If we want to achieve the levels of greenhouse gas (GHG) emissions required by science without significantly raising the planet's temperature, our decisions must inspire cooperation among all the people involved.

At local level, we still have high levels of contamination in the center and south of the country, as a result of the energy consumed in homes for heating, cooking or sanitary hot water. Therefore, we must continue our efforts to provide citizens with clean, safe fuel alternatives that do not incur higher costs.

We have enormous renewable energy potential, the best solar radiation in the world in the north of the country, exceptional wind resources, great geothermal potential and others, which will allow us to generate more than 80 times the installed capacity we currently have and thereby achieve the goal established in the National Energy Policy of 100% electrical generation with zero emission energy by 2050.

We are convinced of the need to move towards low-emission and climate-resilient development, which also improves people's quality of life, which is why we will continue promoting enabling actions and measures to decarbonize the electricity matrix, and where the removal of coal-fired power plants and the incorporation of more clean energy play a fundamental role. With this clean electricity, we will advance in other energy transitions, caused by the replacement of fossil fuels in the different sectors of the economy, including mining, industry, transportation, commerce, and buildings.

At residential level, we also seek to diversify the heating matrix to provide households with efficient, clean, safe and convenient alternatives.

The electrification of these energy-intensive uses presents enormous opportunities for the production and consumption of green hydrogen, electromobility, energy efficiency, sustainable building, the electrification of motor and thermal uses in industry and mining.

The energy transition will bring great benefits in the well-being and health of people. It also presents challenges and opportunities such as changes in the type of employment and training needs, development of new technologies, changes, and diversification in the productive matrix of the territories, challenges in the competitiveness of the regions, among others. Therefore, we will continue to promote a sustainable, participatory energy development in a territorial and inclusive manner.

Renewable energies will provide job opportunities in this strategy. An example of this is the nearly 24,600 MW that arise from project portfolios in the SEIA (Environmental Impact Assessment System), which could generate 43,000 new jobs in the regions where the coal-fired power plants are located, and that correspond to potential jobs during the construction and operation phases to the extent that they are executed. At the national level, the figures will increase significantly if we consider the potential for job creation as a result of the development of the green hydrogen industry and its value chain<sup>1</sup>.

We, as Ministry of Energy, update the National Energy Policy with a participatory process that gives it technical and social legitimacy, integrating the important changes that have occurred in the energy sector from the logic

of the energy transition, as well as the challenges that arise from this new scenario. During the participatory process of this update, it is emphasized the importance of considering social, cultural, economic and environmental aspects of the energy transition, that allow sustainable development through informed, public and meaningful participatory processes, and where the committed actions are worked together with those involved in the territories.

The Just Transition Strategy must have people at the center and ensure that the energy transition towards carbon neutrality in Chile incorporates equitable social and environmental development, promoting the creation of jobs that improve people's quality of life.

This document corresponds to the general framework of the Just Energy Transition, starting with the energy transition from the closure of coal-fired power plants, and then continuing to guide other transformations that will set the course for our energy future.

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<sup>1</sup> Preliminary estimates indicate approximately 400,000 new jobs by the year 2040.



Towards a Just and Sustainable Energy Transition

Canela Wind Farm, Coquimbo Region. @Max Donoso

## A comprehensive strategy for the energy transition

The energy transition represents a comprehensive challenge on the path towards sustainability and clean energies. These changes involve various sectors such as the integration of renewable energies, the use of clean energy in industry and mining, mobility with zero-emission energy and, of course, energy use in every household.

This first version of the just transition strategy initially focuses on the follow-up process for the coal-fired power plant phase-out plan.



### ELECTRICITY

The phase-out or reconversion of coal-fired power plants are enabling actions to achieve carbon neutrality. They allow cleaning the production of electrical energy.

The challenges to carry out this transformation are diverse in technical, economic, environmental and social matters.

This strategy focuses on initiatives that promote new opportunities for people affected by the closure of coal-fired power plants.

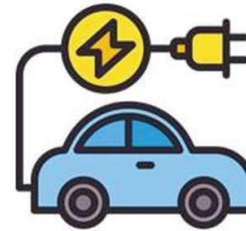


### INDUSTRY AND MINING

Industry and mining are moving steadily towards greater use of renewable energy and clean fuels such as green hydrogen.

This transformation requires strengthening skills and capacities in new technologies and production processes.

This strategy is the starting point for implementing an advocacy framework so that people can take advantage of the opportunities and benefits of the energy transition.



### EFFICIENT TRANSPORTATION

The transition to low-emission vehicles will present challenges and demands for technological and workforce adaptation, such as transportation and fuel retrofits, charging infrastructure, new vehicle maintenance, and more.

Occupational profiles must be identified across the transport value chain in order to create training mechanisms for the entire population affected by this technological change.

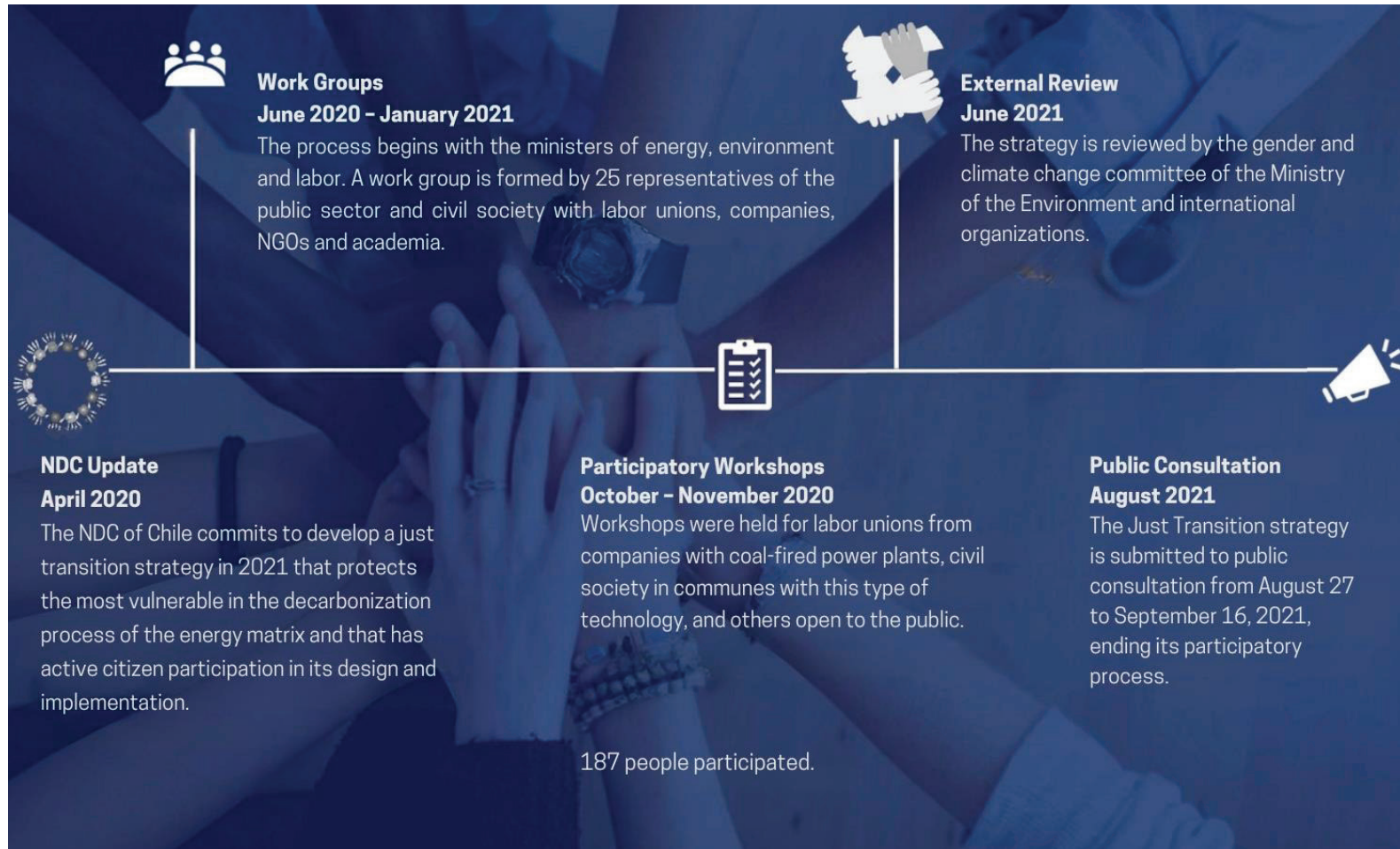


### RESIDENTIAL ENERGY

The residential sector has great opportunities for energy transition, moving from a thermal system based on firewood and fossil fuels to greater use of electricity or more sustainable energy sources.

Given the above, it will be necessary to move towards local diagnoses to identify these new workforce capabilities required to support the labour reconversion process of the affected people.

## The path towards a participatory strategy



## Transition to new jobs in clean energy

The transition from an energy matrix that relies heavily on fossil fuels to one that is renewable and zero-emission represents both enormous opportunities and challenges. It requires the collaborative and coordinated work of the public sector and civil society.

According to the International Energy Agency (IEA), currently about 40 million people in the world work directly in the energy sector. The agency projects that by 2030, jobs dedicated to clean energy will increase by an additional 14 million, and those dedicated to fossil fuels will decrease by 5 million, leading to a net increase in the sector of 9 million new jobs.

In Chile, renewable energy projects are expected to create more than 43,000 new jobs, including those in the construction and operation phases. The foregoing, considering only the projects entered into the SEIA in the regions where the coal-fired power plants are located, figures that would increase significantly if we consider the potential for job creation as a result of the development of the green hydrogen industry and its value chain<sup>(1)</sup>.

The transition of jobs to clean energy requires new professional training, further training and skill creation.

In this way, the jobs that coal-fired power plants will stop providing, whose figure in 2018 reached 4,390 direct and close to 9,500 indirect<sup>(2)</sup>, will be greatly surpassed by the development of the renewable energy industry and green hydrogen, transforming the energy transition into an important source of new jobs for the country.

**+ 43.000** new jobs in clean energy for the regions where coal-fired power plants are located in this decade.

**+ 13.000** jobs, direct and indirect, driven by the closure of coal-fired power plants.



(1) Source: Estimates of the Ministry of Energy 2021 based on the SEIA June 2021. Additionally, preliminary estimates indicate approximately 400,000 new jobs by 2040 in green H2.

(2) "Economic and labor impact of the phase-out and/or reconversion of coal-fired power plants in Chile" developed by Alicia Viteri and financed by the IDB:

[https://energia.gob.cl/sites/default/files/Informe\\_Final\\_BID\\_con\\_resumen\\_ejecutivo\\_y\\_anexos.pdf](https://energia.gob.cl/sites/default/files/Informe_Final_BID_con_resumen_ejecutivo_y_anexos.pdf)

## Transition as support for productive competitiveness

As of 2018, the total gross production of the coal power generation industry accounted for 0.7% of the national economic GDP. However, at the local level, the contribution to the regional GDP of this sector is intensified, reaching almost 4% in Huasco and 3.7% in Tocopilla and Mejillones together<sup>(3)</sup>.

This is one of the important reasons why coal-fired power plant phase-out must be gradual, and one of the reasons why reconversion of these assets prolongs the benefits of their contribution to the local economy.

However, the huge potential of renewable energy in the country translates the energy transition into a huge opportunity for production transformation in communes that currently have coal-fired power plants. For example, through renewable energy projects, water desalination, storage systems, or green hydrogen projects, among others that will boost the local economy in these areas.

As far as the circular economy is concerned, it is an opportunity to create new business models that offer a way to overcome the dilemma between economic development and environmental protection and create synergies between the two goals. The model emphasizes a type of productivity that is generally not taken advantage of, but which has enormous potential both in environmental and economic terms.

Chile's energy transition is causing a productive transformation that will bring important benefits, boosting the local economy of communities. The State has the responsibility to implement public policies, together with civil society, to take steps to promote these changes, paying particular attention to opportunities for their people.

Closure and/or new uses of 28 coal-fired power plants in Chile:

**65%** of the coal capacity of our matrix will be available to be closed or reconverted by 2025 and **100%** by 2040. However, efforts will be made to accelerate the closure or reconversion of coal-fired power plants, considering that it is essential to maintain a reliable and resilient electrical system to continue delivering energy at all times.

**5 BUSD** projected in investment in clean energy such as green hydrogen by 2025 <sup>(4)</sup>.

New business models in line with the **circular economy** roadmap

(3) "Economic and labor impact of the closure and/or reconversion of coal-fired power plants in Chile" developed by Alicia Viteri and financed by the IDB:

[https://energia.gob.cl/sites/default/files/Informe\\_Final\\_BID\\_con\\_resumen\\_ejecutivo\\_y\\_anexos.pdf](https://energia.gob.cl/sites/default/files/Informe_Final_BID_con_resumen_ejecutivo_y_anexos.pdf)

(4) National Green Hydrogen Strategy

## Transition focused on emission mitigation

The closure of coal-fired power plants as a result of the binding agreement between the State and companies in 2019 will bring benefits in the reduction of 40 million tons of CO<sub>2e</sub> between 2020 and 2040. In addition, local air pollutants equivalent to 1,500 tons of particulate matter (PM), 43 thousand tons of sulfur (SO<sub>2</sub>) and 44 thousand tons of nitrogen oxides (NO<sub>x</sub>) will be reduced, thus improving the quality of life of people and the natural environment.

This enormous contribution to the mitigation of Greenhouse Gas emissions allows the country to commit to carbon neutrality by 2050, with a significant reduction by 2030 incorporated into its Nationally Determined Contribution (NDC) in April 2020, being the first country in America to do it.

Efforts to close coal-fired power plants go hand in hand with the incorporation of new renewable energy projects. In this sense, the development of new clean energy projects and the process of closing coal-fired power plants must guarantee the protection of the environment, the population and the surroundings of the territory.

In conclusion, the key is to properly manage the closure of coal-fired power plant infrastructure, ash deposits, coal deposits, and hazardous waste to avoid potential soil contamination.

**40 MM** tons of CO<sub>2e</sub> reduced between 2020 and 2040.

**1.5 thousand, 43 thousand and 44 thousand** tons of PM, SO<sub>2</sub> and NO<sub>x</sub> respectively, reduced between 2020 and 2040.

First American country to update its NDC and the second country in the world to include a just transition in its goals.



**Chapter I: Just Energy Transition Strategy for the closure of coal-fired power plants**

## Our shared vision

*“Through the closure and/or new uses of the spaces and infrastructure of coal-fired power plants, the energy sector will contribute decisively to achieving carbon neutrality in the country, increasing the share of clean energies in the electric matrix, and articulating policies, strategies and actions of various public, private and civil society stakeholders, which allow a fair, equitable and sustainable development of the country and the territories in question.”*



## Principles of the Ministry of Energy that guide the participatory development of energy projects



- **Dialogue and early and ongoing engagement.** Establish adequate and effective two-way communication and active participation mechanisms for all stakeholders involved to maintain long-term relationships as well as claims and dispute resolution mechanisms;
- **Representativeness and respect for human rights.** Inclusion of plurality and diversity, representativeness, gender equality, leveling of asymmetries for all parties; facilitating and inspiring the participation of special protection groups, such as indigenous peoples, women, children and adolescents;
- **Transparency.** Information that is understandable, available, relevant or of interest to the parties, well-founded and plural, with special emphasis on the affected communities, dissemination agreed between the parties;
- **Impact.** That there is good faith and willingness to reach agreements, responsibility and involvement, considering the different opinions in the final decision;
- **Collaboration and governance.** That there are instances of deliberation and inclusive dialogue, teamwork, registration and accountability;
- **Common good and sustainable development.** Balance in social, environmental and economic dimensions that is maintained over time, with the search for the common good, promotion of the potential of the territory and improvement of the quality of life, contributing to the SDGs, planning and long-term vision, generation of positive impact in local, measurable and reportable development.

## Immediate State commitments:

At the Ministry of Energy:

1. We will adopt the necessary measures in the instruments and programs of the Ministry of Energy with the objective of promoting the participation of people in communes with closures of coal-fired power plants, maintaining equal conditions and requirements. We will also carry out an adequate dissemination of these instruments in said places.

In particular, in those training and certification programs for operators, technicians and professionals in the energy sector.

Also, in promotion plans and programs such as *Casa Solar* (Solar House), *Ponle Energía a tu PYME* (Put Energy to your SME), among others.

2. We will analyze technical and/or regulatory mechanisms to avoid significant increases in the electricity rates of regulated clients in the places where coal-fired power plants are closed.
3. All efforts will be made to accelerate the phase-out schedule of coal-fired power plants, considering the long-term energy planning of the Ministry of Energy and the needs for new works and energy infrastructure defined by the National Energy Commission and the safeguards that the National

Electricity Coordinator suggests to maintain the security of electrical supply in the country.

4. We will support the efforts of the companies that own the coal-fired power plants to develop new uses for the facilities and infrastructures that will attract investment, generate jobs that contribute to improving the conditions of the areas in question, and have a positive impact on local communities.
5. We will position Chile as world leader in the transition from coal-based energy to clean energy. As a member of the Powering Past Coal Alliance (PPCA), a coalition of governments, and national and subnational organizations and companies, we will work collaboratively on these issues.
6. We will develop, in coordination with the Ministries of Labor, Economy, Development and Tourism, and the Environment, a training plan for the reinsertion and job retraining of workers and family members negatively affected by the closure of power plants when appropriate.

Commitments with other institutions, public and private, involved in the Just Transition Strategy:

7. We will encourage the Ministry of Housing and Urban Planning to evaluate urban regeneration actions in the urban centers involved in the Just Transition Strategy with a local perspective, and accounting for the history of power plants and their impact on culture and development of the city.
8. Together with the Ministry of Labor, we will establish work agreements to develop labor intermediation plans and job fairs<sup>2</sup> in collaboration with the interested parties in the communes where coal-fired power plants will be closed in order to promote opportunities for new jobs in clean energies.
9. Together with the Ministry of Labor, the Ministry of Foreign Affairs and the Ministry of the Environment, we will promote post-COVID-19 economic reactivation, driven by the energy transition, through quality job opportunities in clean energies, and considering the best practices and international collaboration agreements such as the Climate Action for Jobs Initiative.
10. The Ministry of the Environment will have a new citizen website with information that is clearer, simpler and more friendly to the community, in order to increase the transparency of online information on air quality in the communes where coal-fired power plants will be closed<sup>3</sup>.
11. Together with the Ministry of Economy, Development and Tourism, we will carry out programs to support the entrepreneurship of workers in the communes where power plants will close.
12. Together with the Sustainability and Climate Change Agency, we will develop Territorial Clean Production Agreements, when appropriate, in the communes most affected by the closure of power plants.
13. Together with H2 Chile, we will set up a collaboration agreement to focus public-private investment initiatives in the regions where relevant energy transitions for the country will take place to promote the sustainable development of green hydrogen in Chile, thus constituting job creation, productive diversification, development of cities and improving the quality of life of people in the territories.

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<sup>2</sup> These fairs will disseminate the tools developed in the Technical-Professional Qualifications Framework for wind power generation, photovoltaic solar, transmission, distribution, electricity marketing and technical support, photovoltaic distributed generation and energy efficiency projects.

<sup>3</sup> Websites available to date: <https://airecqp.mma.gob.cl/> ; <https://airehuasco.mma.gob.cl/> ; <https://airecoronel.mma.gob.cl/>



Agreed Work Plan

## People-focused transition



The fundamental pillar of the Just Transition Strategy is people, and therefore actions must be participatory in the design and implementation of the closure process and/or new uses of coal-fired power plant spaces and infrastructure.

We will advance in promoting a just energy transition in the social and labor field that encourages the development of labor competencies with a focus on reinsertion and labor retraining toward quality jobs that allow the promotion of local development of communities and the well-being of people.

In particular, we will work on the following guidelines and actions:

**Facilitate the employment and training of people negatively affected** by the closure of coal-fired power plants and promote their integration into new sources of employment or ventures, both in and outside of the energy sector.

Carry out an analysis of labor supply and demand in the territories concerned.

Promote an employability plan with a gender focus, creating direct jobs with energy and non-energy companies, considering the context of the communities.

Promote sources of employment for the population affected by the closure of coal-fired power plants, for example, through job fairs in said locations.

Propose incentive mechanisms for local contracting and MSMEs in public tenders when appropriate.

Establish a labor intermediation plan with local companies and municipalities where the workers of the companies involved can be relocated.

Develop a training and follow-up plan for job retraining and reinsertion in order to support the affected people and to favor the job placement or retraining of workers (including entrepreneurship in various topics such as gastronomy, peasant family farming).

Encourage children and adolescents to pursue careers related to the development of clean, renewable energy and green hydrogen, through the programs of the Ministry of Energy.

**The social well-being of the most vulnerable and affected workers** and communities by the closure and/or new uses of coal-fired power plant spaces and infrastructure.

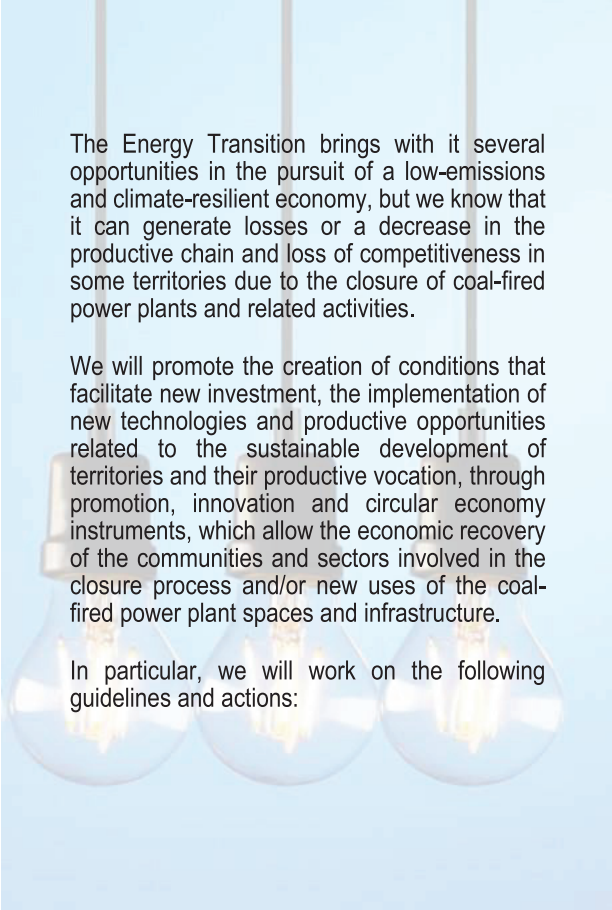
Analyze technical and/or regulatory mechanisms to avoid significant increases in the electricity rates of regulated clients in the communes where coal-fired power plants are closed.

Adopt the necessary measures in the instruments and programs of the Ministry of Energy with the aim of promoting the participation of people in communes with the closure of coal-fired power plants, maintaining equal conditions and requirements.

Identify the most vulnerable affected people\* in each territory involved in the closure of coal-fired power plants to target State support programs on them, as well as identify other unwanted social effects in the territory to propose mitigation measures for the benefit of said people.

*\* As coal-fired power plants close, the socioeconomic status of these people will deteriorate, pushing them into poverty in the short to medium term.*

## Economic development and productive promotion



The Energy Transition brings with it several opportunities in the pursuit of a low-emissions and climate-resilient economy, but we know that it can generate losses or a decrease in the productive chain and loss of competitiveness in some territories due to the closure of coal-fired power plants and related activities.

We will promote the creation of conditions that facilitate new investment, the implementation of new technologies and productive opportunities related to the sustainable development of territories and their productive vocation, through promotion, innovation and circular economy instruments, which allow the economic recovery of the communities and sectors involved in the closure process and/or new uses of the coal-fired power plant spaces and infrastructure.

In particular, we will work on the following guidelines and actions:

Promotion of **new investment** in the territories involved in the closure and/or new uses of coal-fired power plant spaces and infrastructure.

Use available information to analyze public and private investment initiatives, focusing on sustainable projects that are gender-responsive and contribute to job creation, development and meeting communal needs.

Identify and evaluate economic incentives, such as soft loans, subsidies, and technical assistance, that promote investment in triple-impact activities or ventures (positive social, economic, and environmental impacts).

Evaluate tax modifications that allow deducting expenses that a company with coal-fired power plants has incurred in activities not committed in an Environmental Qualification Resolution (RCA), and associated with implementing activities established in the local action plans that are agreed in the territories in question.

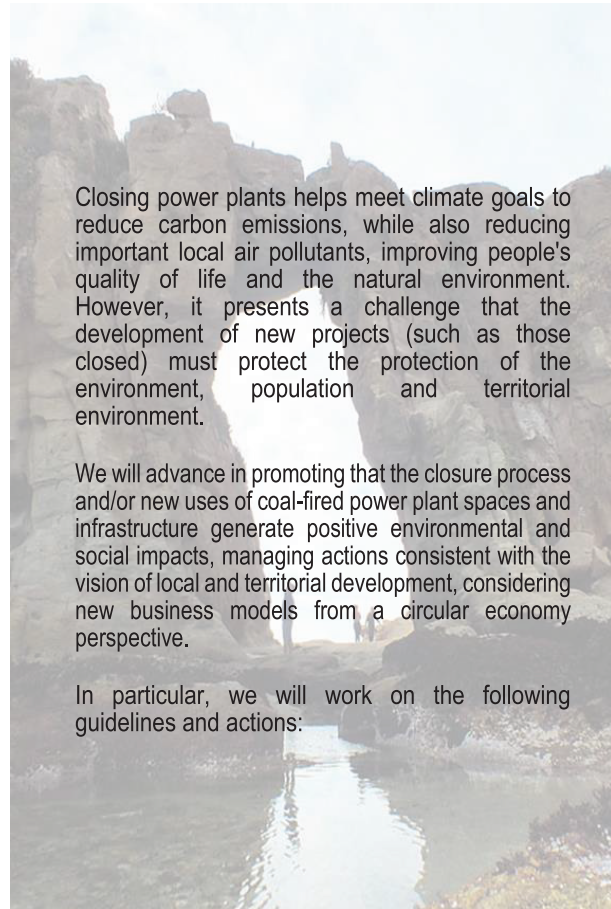
**Research, development and innovation** that promotes new services and productive developments in the territories involved in the closure of coal-fired power plants.

Encourage, from innovation, the productive chain and the circular economy, pertinent and timely information that makes it possible to identify the challenges of closing a coal-fired power plant in the territory and evaluate inclusive local development options within the framework of the just transition.

Promote the timely and effective dissemination of existing R&D instruments and programs from public bodies and agencies (CORFO, SERCOTEC, among others) to attract new triple-impact ventures in the territories, as well as circular economy initiatives.

Develop programs for local suppliers in a gender-responsive manner, promote the development of affected areas, and encourage large companies to include greater demand for locally produced goods and services within the framework of Clean Production Agreements.

## Environmental development and territorial approach



Closing power plants helps meet climate goals to reduce carbon emissions, while also reducing important local air pollutants, improving people's quality of life and the natural environment. However, it presents a challenge that the development of new projects (such as those closed) must protect the protection of the environment, population and territorial environment.

We will advance in promoting that the closure process and/or new uses of coal-fired power plant spaces and infrastructure generate positive environmental and social impacts, managing actions consistent with the vision of local and territorial development, considering new business models from a circular economy perspective.

In particular, we will work on the following guidelines and actions:

**Strengthening of the regulatory framework** that enables new uses of coal-fired power plant spaces and infrastructure. Recommendations are available on the best environmental practice technical guidance for the closure of coal-fired power plants: <https://www.4echile.cl/publicaciones/guia-tecnica-de-buenas-practicas-ambientales-para-el-cierre-de-centrales-a-carbon>

Regulations and permits are identified and made public through an open consultation platform that can guide and facilitate the process of closing power plants or new uses.

Identify regulatory barriers that prevent progress for new uses and recommend changes consistent with international guidelines.

Evaluate the most suitable tools to improve the reference levels of soil quality in the facilities through the regulatory process of the Ministry of the Environment.

Build a new citizen portal that provides clearer, simpler, and more community-friendly information about air quality in communes that will close coal-fired power plants.

Carry out information gathering on the quality of water and sediments in prioritized bays for the preparation of secondary environmental quality standards. Promote the analysis of environmental prevention for prioritized bays, as appropriate, through the Ministry of the Environment.

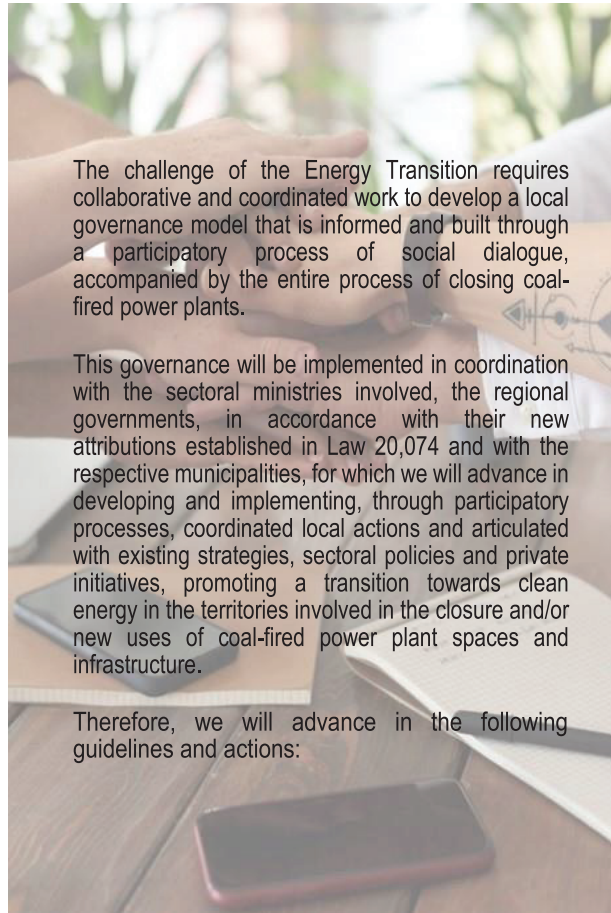
**Alternatives for new uses of coal-fired power plant spaces and infrastructure**, and regeneration plans consistent with the vocation of the territory in question.

Identify alternatives for new uses of coal-fired power plant spaces and infrastructure to other energy and non-energy uses\*, which allow social, environmental and economic development along with the generation of employment opportunities in the areas following a circular economy model.

Evaluate urban regeneration actions in the urban centers involved in the Just Transition Strategy with a local perspective and giving an account of the history of power plants and their impact on the culture and development of the city.

\* for example, the development of green H2, water desalination plants, energy storage, among others.

## Participatory governance and public-private articulation



The challenge of the Energy Transition requires collaborative and coordinated work to develop a local governance model that is informed and built through a participatory process of social dialogue, accompanied by the entire process of closing coal-fired power plants.

This governance will be implemented in coordination with the sectoral ministries involved, the regional governments, in accordance with their new attributions established in Law 20,074 and with the respective municipalities, for which we will advance in developing and implementing, through participatory processes, coordinated local actions and articulated with existing strategies, sectoral policies and private initiatives, promoting a transition towards clean energy in the territories involved in the closure and/or new uses of coal-fired power plant spaces and infrastructure.

Therefore, we will advance in the following guidelines and actions:

Design of a **Governance** that ensures the execution and monitoring of agreed measures in each territory, with broad social dialogue during the implementation process.

Establish a governance model, inclusive and representative of the different stakeholders related to the closure and/or new uses of coal-fired power plant spaces and infrastructure in the territory\*.

Establish a program of communication and permanent dissemination of the actions and matters related to the just energy transition that facilitate open access, exchange, and monitoring of the information generated in the territories concerned in a transparent, clear and timely manner.

Promote that the monitoring of local action plans incorporate a gender approach, in which deadlines, monitoring indicators, responsible parties and execution times are established.

\* Regional citizen participation policies and the formation of regional citizen participation councils should be considered. Recommendations at: <https://www.4echile.cl/publicaciones/guia-cierre-de-centrales-termicas-a-carbon-recomendaciones-buenas-practicas-involucramiento-actores/>

Facilitation and **articulation of financing and sectoral policies and private initiatives** that allow a coordinated and coherent advance of actions towards a fair and sustainable transition that accompanies the closure of coal-fired power plants.

Identify and focus programs, public and private funds to support the implementation of the strategy at the local level.

Identify policies and other initiatives that make it possible to articulate joint actions to move toward a just transition.

Make alliances with experts who help monitor the progress of the just transition at the company level and local action plans.

Advance in measures to implement the agreements signed in terms of international collaboration, for example, the Powering Past Coal Alliance.

Promote green hydrogen initiatives in regions where coal-fired power plants are closed.

All pertinent efforts and coordination will be made to speed up the power plant phase-out schedule.



**Chapter II: Participatory process for the development of the Just Energy Transition Strategy**

As a fundamental part of the development of the Just Energy Transition Strategy focused on the closure and/or new uses of coal-fired power plant spaces and infrastructure, various participatory instances structured in three levels were carried out - as indicated by the following figure - Workshops, Work Groups and Interministerial Committee.



In the case of workshops, three types were held separately: workshops aimed at the labor unions of coal-fired power plants; workshops for people from civil society who live in the communes where the coal-fired power plants are located; and workshops open to the public with the participation of NGOs, port unions, labor unions, representatives of the academic sector, representatives of the public sector, international organizations, and companies, among others. Given the contingency of COVID 19, all workshops were carried out online.

Between October and November 2020, the three types of participatory workshops were articulated. Two sessions of the workshop were held with the labor unions in this industry, two sessions with representatives of civil society from the territories where coal-fired power plants are installed, and three sessions of the general workshops open to the public, where representatives of all sectors participated.

In total, the three types of workshops were attended by 187 people, with 41% female participation and 59% male participation.

These workshops made it possible to diagnose existing social, production, environmental and territorial needs and to propose axes, guidelines and actions for the development of this strategy.

The information from the workshops was systematized and presented to the Work Group, whose objective was to be a space for the exchange of information to promote good social, economic and environmental practices in relation to the closure and/or new uses of coal-fired power plant spaces and infrastructure in the country. This will allow for collaboration in the strategy development process.

The Work Group was made up of 25 people: 48% women and 52% men, representatives of the following institutions:

- Ministry of Energy
- Ministry of the Environment
- Ministry of Labor and Social Security
- Ministry of Economy
- Ministry of Social Development and Family

- Regional and Administrative Development Undersecretariat
- CORFO
- Chilean Association of Municipalities
- AES Andes
- Enel
- Engie
- Chilean Association of Power Generators
- Sofofa
- AES Andes Labor Union
- Colbún Labor Union
- Enel Labor Union
- Engie Labor Union
- International Labor Organization ILO
- German Agency for International Cooperation (GIZ)
- AVINA Foundation
- Global Compact Chile
- Beatriz Helena Soto – University of Antofagasta
- Sebastián Vicuña – UC Global Change Center
- Marcela Angulo – University of Concepción
- Tomás Ariztía – Millennium Nucleus on Energy and Society Research

6 sessions of the Work Group were held, where the country's decarbonization context was delivered, the ILO delivered the just transition guidelines, and the importance of green jobs for labor reconversion and work was done on vision proposals, principles, axes, objectives, guidelines, and actions for the strategy.

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<sup>4</sup> Checklist for incorporating a gender approach, available at: <https://mma.gob.cl/wp-content/uploads/2020/06/GENERO-3.pdf>

Throughout the strategy development process, permanent meetings have been held with the Ministry of the Environment, Ministry of Labor and Social Security, National Training and Employment Service (SENCE), Ministry of Economy, Development and Tourism, CORFO, Agency of Sustainability and Climate Change, Regional and Administrative Development Undersecretariat, Treasury, Ministry of Health, Ministry of Housing and Urban Planning and Chilean Association of Municipalities.

During the strategy development process, the members of the Gender and Climate Change National Committee analyzed that the strategy should incorporate a gender approach, through its review with the checklist developed for this purpose<sup>4</sup>.

Likewise, UN-Human Rights, ILO, OECD, within the framework of the Project on Responsible Business Conduct in Latin America and the Caribbean, financed by the European Union, and UNICEF, accompanied the process of developing the Just Transition Strategy, reviewing it in the framework of Human Rights and Business.

Between August 27 and September 16, the public consultation of the Just Energy Transition Strategy proposal was held. Part I: Monitoring the closure and/or new uses of coal-fired power plants in Chile in order to gather comments and opinions from all those interested in participating. More than 165 observations were received from 12 institutions: coal-fired power plants, labor unions, NGOs, and consultants. There was a female participation of 44% and 56% male participation.

All of the above have been incorporated into this document, the final version of the Just Energy Transition Strategy. Part I: Monitoring the closure and/or new uses of coal-fired power plants in Chile.



Chapter III: Governance

The Just Energy Transition towards sustainable development encompasses all relevant aspects of society that require long-term coordination between the public and private sectors. This governance will be implemented in coordination with the sectoral ministries involved and regional governments in accordance with their new powers established in Law 20,074 and with the respective municipalities, for which we will advance in developing and implementing, through participatory processes, coordinated local actions and articulated with the sectoral strategies, policies and instruments and existing private initiatives, promoting a transition towards clean energy in the territories involved in the closure and/or new uses of coal-fired power plant spaces and infrastructure.

For the implementation and monitoring of the strategy, governance is defined at two levels, a management level consisting of an Interministerial Committee, and a technical strategic level of implementation, follow-up and monitoring, coordinated by a Technical Secretariat that may convene work groups with various stakeholders involved in the process.

This structure will guide the preparation of local action plans to be developed in the territories involved, under a participatory and inclusive approach that promotes a just transition, enabling tools and means to ensure the protection of the environment, territories, reintegration and labor retraining and, in general, the well-being of people over time.

The Interministerial Committee will be permanently integrated by the Ministry of Energy, the Ministry of the Environment, the Ministry of Labor and Social Security and the Ministry of Economy, Development and Tourism. For coordination in the implementation of specific topics, other ministries may be invited.

The objective of this committee is to provide strategic guidelines on the strategic axes based on the instruments and tools of the various ministries.

The functions of the Interministerial Committee will be to:

- Analyze, design and implement the strategy in order to reflect the national strategic perspective.
- Supervise compliance with the strategy to achieve the vision and achieve the objectives and commitments defined in the axes.
- Review and update the just energy transition strategy every 4 years.
- Agree ministerial budgets related to the strategy.
- Serve as a coordinating body for the ministries to incorporate the just transition strategy in their respective spheres of action.

The Interministerial Committee will maintain close coordination with other bodies of the State administration, to strengthen actions leading to compliance with the strategy and local action plans.

For its part, the Technical Secretariat, led by the Ministry of Energy, will also be made up of the Ministry of Labor, the Ministry of the Environment and the Ministry of Economy. It will be able to convene work groups with various stakeholders and will be responsible for the articulation, implementation, monitoring, and follow-up of the strategy and local action plans.

A fundamental pillar of the Just Transition Strategy is people, so actions must be designed and executed in a participatory manner during the closure

process and/or new uses of coal-fired power plant spaces and infrastructure. At the same time, a primary focus is to protect workers affected by the closure of coal-fired power plants, which is why it is necessary to identify concrete actions together with the stakeholders directly affected by the closure of coal-fired power plants.

Work groups will be able to raise proposals and collaborate in the implementation and monitoring plans for labor relocation or reconversion of workers directly affected by the closure of coal-fired power plants (workers of power plants and workers of ports that supply coal, for example).

Representatives of concerned workers and employing companies, as well as the Ministry of Energy and the Ministry of Labor and Social Security, will be invited to these work group meetings in order to coordinate the actions with related services. In order to establish a neutral external observer, representatives of relevant international organizations could be invited to present their experiences.

The functions of the Technical Secretariat will be to:

- Agree on the diagnosis and dimensioning of the situation to be addressed, for example, affected areas, number of affected workers and their specific cases.
- Propose general measures and actions for the situations identified, mainly related to:
  - Training for affected workers
  - Labor retraining and/or reinsertion within the energy sector

- Labor retraining and/or reinsertion outside the energy sector
- Specific situations identified in each territory
- Collaboration in the implementation of measures
- Monitoring and follow-up of these measures
- Propose public and communication actions

A fundamental element of the Just Transition Strategy will be the development and execution of the Local Action Plans (LAP), which will address the social, economic, labor and environmental challenges of the country's ongoing energy transition and decarbonization of the electrical matrix.

After the publication of this strategy, local committees will be formed, whose objective will be to evaluate and design local action plans that raise job opportunities, and evaluation plans and eventual environmental improvements in the territories before the closure and/or reconversion of coal-fired power plants when applicable.

LAPs will be promoted and articulated by the technical secretariat through the formation of local work groups with a focus on the needs of the inhabitants of a territory involved in the closure of coal-fired power plants and will be supported by the guidelines of the strategy, outlining concrete actions based on local challenges and opportunities.

LAPs must have a diagnosis of the current and future situation - in social, economic and environmental terms - that a territory is facing as a result of the closure of a coal-fired power plant. The above information should help identify challenges and develop shared value actions that will enable progress towards fairer, more equitable and sustainable development in the territories concerned.

Local committees will invite, through an open invitation or participatory process, local institutions or organizations related to the closure of coal-fired power plants, which may be composed of representatives from public institutions with local involvement, energy and non-energy companies in the territory, academic institutions and training and research centers, institutions linked to environmental issues, worker representatives, civil society, representatives of the territory, among other relevant stakeholders.

Local committees may have a communal scope and be open to the participation of regional representatives. It is planned to start work focused on solutions related to scheduled closures.

The development of local action plans will provide support to those involved in the energy transition, and in particular in the closure of coal-fired power plants (whether companies, workers or communities). On the other hand, this can serve as a catalyst to implement concrete actions in an equitable manner by empowering stakeholders.

General outline of the Governance model:





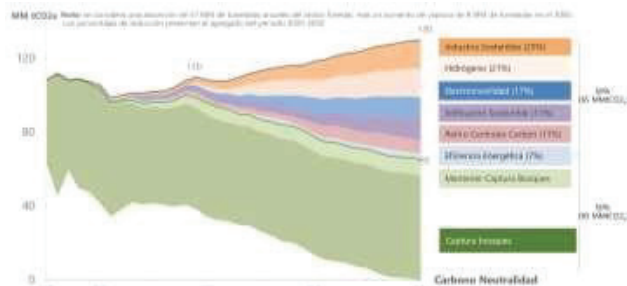
Annexes

## Annex 1: Just Transition Strategy Framework

### Carbon Neutrality Plan by 2050 for the Energy Sector

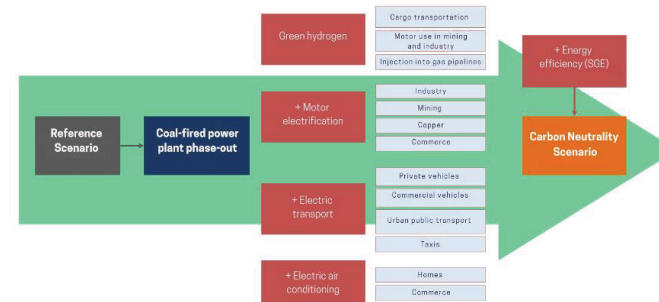
The coal-fired power plant phase-out, in addition to reducing 40 MM tons<sup>5</sup> of CO<sub>2e</sub> is also a favorable measure to achieve the commitment to accomplish Carbon Neutrality (CN) by 2050, since it promotes actions that accelerate technological replacements and the incorporation of energy efficiency in companies and processes. Thus, the exit of coal-fired power plants will require the replacement of about 5,400 MW by renewable and clean energies, where green hydrogen, energy efficiency, the use of efficient engines, the incorporation of intelligent storage systems, the electrification of processes, among others, will be relevant actions that will allow us, along with the capture of CO<sub>2</sub> by the forests in Chile, to reach the CN by 2050.

Measures to achieve Carbon Neutrality by 2050 (Source: Carbon Neutrality in the energy sector. Projection of national energy consumption 2020, Ministry of Energy)



<sup>5</sup> Estimated reductions between 2020 and 2040. Source: Carbon Neutrality in the energy sector. Projection of national energy consumption 2020, Ministry of Energy, available at: [https://energia.gob.cl/sites/default/files/pagina-basica/informe\\_resumen\\_cn\\_2019\\_v07.pdf](https://energia.gob.cl/sites/default/files/pagina-basica/informe_resumen_cn_2019_v07.pdf)

The coal-fired power plant phase-out enables the other measures to reduce CO<sub>2</sub> emissions. (Source: Adapted from Carbon Neutrality in the energy sector. Projection of national energy consumption 2020, Ministry of Energy)



### Just Transition Commitment in the NDC

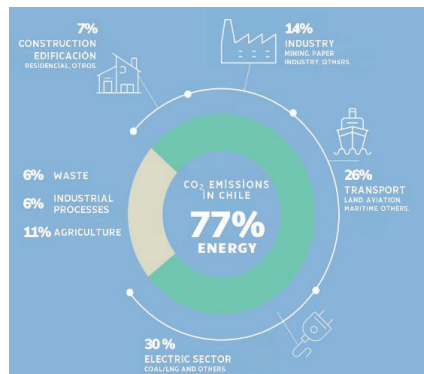
In addition to the CN commitment by 2050, along with assuming the Presidency of COP 25 and as a part of the commitments established in the Paris Agreement, Chile delivered to the UNFCCC<sup>6</sup> the update of its Nationally Determined Contribution (NDC) in April 2020. It incorporates a Social Pillar of Just Transition and Sustainable Development that establishes a “Just Transition: particularly focused on the decarbonization process of the electricity generation matrix. The difficulties and needs of particularly vulnerable groups should be analyzed, recognizing, respecting and promoting the obligations related to a just transition towards a low-carbon and climate-resilient economy” and specifically commits to “Prepare by 2021 a “Just Transition Strategy”, which safeguards the rights of the most vulnerable in the decarbonization process of the energy matrix and that has active citizen participation in its design and implementation”.

<sup>6</sup> UNFCC: United Nations Framework Convention on Climate Change

### Phase-out plan and/or new uses of coal-fired power plant spaces and infrastructure

The energy sector is responsible for 77% of the country's greenhouse gas emissions. Coal-fired electricity generation is the main contributor with 25% of the sector's emissions.

Contribution to Greenhouse Gas (GHG) Emissions in Chile



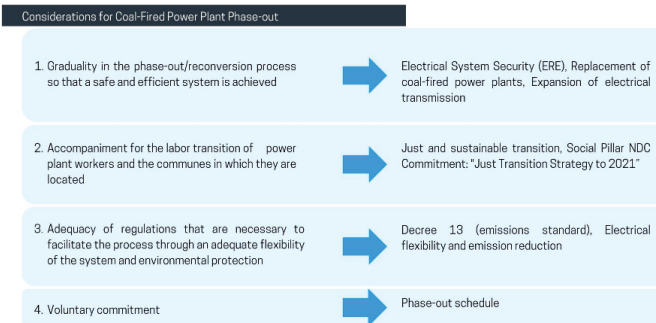
Source: National Energy Balance, Ministry of Energy, 2018

With this background, the Government proposed to start the process of decarbonization of the electrical matrix of our country. In order to achieve this challenge in a responsible manner and with a view to the public, the Ministry of Energy formed the "Committee for the Phase-out and/or Reconversion of Coal-Fired Power Plants".

The committee for the Phase-out and/or reconversion of coal units was a committed work in which representatives of NGOs, civil society, labor unions, companies, the public sector, universities, municipalities and international organizations participated, summoned

and guided by the Ministry of Energy. Its purpose was to analyze the technological, environmental, social, economic, safety and sufficiency elements of each of the 28 thermoelectric and electrical system units as a whole, which would allow establishing the conditions for a gradual and operating insurance for coal-fired power plants.

The conclusions of this committee can be summarized in the following image:



Source: Ministry of Energy, 2020

After the committee and as a result of the negotiations between the Ministry of Energy and the coal-fired power plants, in June 2019, the President of the Republic announced the public-private commitment to phase-out all coal-fired power plants before 2040, which would be carried out in two phases. This unprecedented initiative in Chile poses a great challenge, since coal-fired power plants were still relatively new and contributed close to 40% of the total electricity generation in our country. The announcement of this voluntary phase-out plan for coal-fired power plants is the result of the will and conviction of the State of Chile and the electric companies to move towards a cleaner energy matrix.

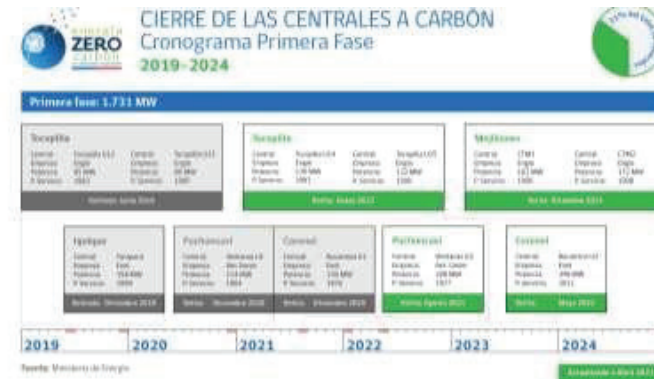
In the short-term phase, the parties agreed on a timetable for a voluntary but binding commitment to phase-out and/or reconvert 8 coal-fired units by 2024.

The government understands the urgency of the plan for the country and is working with the Ministry of Energy and companies that own coal-fired power plants to move forward with the accelerated phase-out plan. In this way, the phase-out dates of 7 units were brought forward, 3 of which were not considered in the first phase. Before 2024, 11 power plants will be withdrawn, equivalent to 31% of the total number of coal-fired power plants in the country.

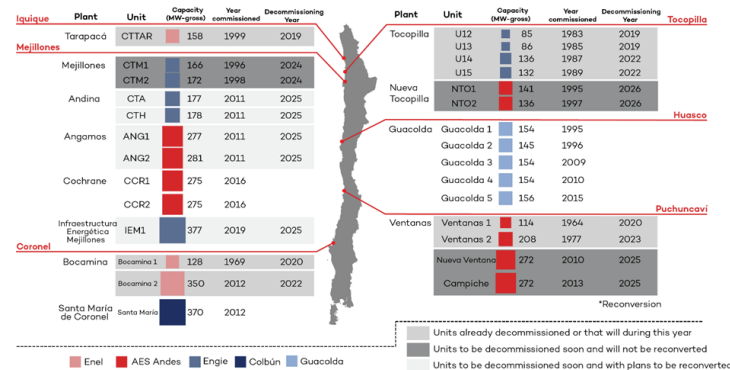
In addition to the above, in April 2021, Engie announced that it will reconvert the Mejillones Energy Infrastructure (IEM) power plant to natural gas and the Andino (CTA) and Hornitos (CTH) thermoelectric plants to biomass, all three located in Mejillones. In July 2021, Aes Andes committed to closing Nueva Ventanas, Campiche, Angamos 1 and Angamos 2 by 2025. Therefore, 65% of the coal capacity in our matrix will be available for retirement by 2025 (18 of 28 units), totaling 3560 MW.

The 28 coal-fired power plants in the country are located in six communes: Iquique, Tocopilla, Mejillones, Huasco, Puchuncaví and Coronel, and are owned by four power generation companies. The following figures indicate their characteristics and scheduled phase-out or reconversion dates (subject to eventual changes due to security contingencies and technical availability).

Closure schedule for coal-fired power plants by 2024 (Source: Ministry of Energy, April 2021)



Characteristics of the 28 coal-fired power plants (Source: Inodú 2023.)



## Annex 2: Recommendations of the Gender and Climate Change National Committee

The Gender and Climate Change National Committee was established in January 2020 with the aim of incorporating the gender approach into public climate change policy instruments. The Ministry of the Environment, together with the Ministry of Women and Gender Equity lead this Committee, and more than twenty Public Services and Ministries are part of it, including the Ministry of Energy.

One of the tools generated in the Committee is the “Gender and Climate Change Checklist”<sup>7</sup> whose objective is to provide guidance to public services to incorporate the gender approach into public policy instruments related to Climate Change.

This tool is for voluntary and flexible use, it is made up of 18 criteria to be analyzed in each of the stages of the cycle of elaboration of a public policy. The following table shows these criteria and details.

At the Committee's May 2021 session, the Just Energy Transition Strategy was submitted to the Gender and Climate Change Checklist for analysis, where valuable suggestions were received and incorporated, including the explicit inclusion of gender equity and equality.

The design and implementation of all JTE measures and actions must take into account the equitable distribution of burdens, costs and benefits, be gender sensitive and pay special attention to sectors, communities and ecosystems that are vulnerable to climate change (Source NDC -MMA, 2020).

| N° | Phase          | Criteria  |
|----|----------------|---|
| 1  | Cross-cutting  | It incorporates the relationship between Gender and Climate Change, through disaggregated data and analysis, in the different sections of the document.   |
| 2  |                | There is a balanced representation of men and women in the different work instances of the instrument, as well as in the participatory process.   |
| 3  |                | Throughout the entire process, a gender focal point (with experience) or a professional with experience in gender is incorporated, who can advise at all phases. If the institution does not have a professional in charge, it is suggested to designate and train one. |
| 4  |                | The text uses inclusive and non-sexist language.  |
| 5  |                | Products created from the instrument do not contain gender stereotypes.   |
| 6  |                | The checklist was applied to each of the studies or consultancies related to management instruments.  |
| 7  | Design         | The analysis of problems, in the policy or instrument diagnostic design and objective phase, considers a gender approach and the way in which these affect men and women differently.   |
| 8  |                | The identification of the target population makes the beneficiaries visible, identifying gender gaps related to the effects of climate change.  |
| 9  |                | It incorporates a gender approach at the level of general and specific objectives.  |
| 10 |                | The instrument's indicators are gender-sensitive to facilitate reading about differentiated impacts between men and women.  |
| 11 |                | It is included in the instances of data collection, recording of information from monitoring systems in all policy phases, gender analysis to identify differentiated impacts between men and women.  |
| 12 |                | It includes specific activities and budget allocations aimed at promoting gender equality in the budget of the instrument.  |
| 13 | Implementation | The expenses of the instrument suggest Labeled Expenditure for activities that promote the overcoming of gender gaps in the context of the instrument.  |
| 14 |                | If there are participatory processes, suggest instances and/or methodologies to facilitate reflection on gender gaps, considering the most vulnerable group in their sector.  |
| 15 |                | Awareness actions have been carried out for the institutions that will implement the instrument on issues of climate change and gender.   |
| 16 | Evaluation     | Indicators and goals are evaluated and reported on how women have benefited from effective changes resulting from the implementation of the instrument.   |
| 17 |                | The information obtained from the monitoring and evaluation processes of the management instrument on gender and climate change is disseminated through a communication strategy.   |
| 18 |                | Good practices for gender equality and climate change, and lessons learned during the instrument cycle are documented and shared.   |

<sup>7</sup> Available at: <https://mma.gob.cl/wp-content/uploads/2020/06/GENERO-3.pdf>



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