

PLAN FOR DECARBONISATION AND CLOSURE OF COAL-FIRED POWER PLANTS IN CHILE

Announcement by the government of Sebastián Piñera - 4 June 2019

Context

Chile is a country which depends on coal as a fossil fuel to generate 40% of its electricity, with a fleet consisting of 28 thermal power plants with a generating capacity of 5,500 megawatts. Ownership of these coal plants is concentrated in the hands of 4 companies: the American AES-Gener, with 15 units; the French Engie with 9 units; the Italian ENEL with 3 units and the Chilean Colbún, owner of one plant. These plants are located in 6 cities throughout Chile, four of which exceed the emission standards for air pollutants, so they have been declared latent or saturated and are the subject of prevention and decontamination plans.

In terms of overall pollutants, 78% of CO₂ emissions in Chile are caused by the energy sector, in which electricity is the main culprit with 41.5%, followed by transport with 31.3%. For this reason, the country's main opportunity to reduce CO₂ emissions is in the electricity generation sector, where coal-fired generators have the economic and technical capacity to achieve rapid decarbonisation.

In this context, three proposals for decarbonisation of the electricity sector were put forward in the course of the last year: the first one developed by the Coordinador Eléctrico Nacional (CEN) or National Electricity Coordinator, and presented in September 2018 to the Mesa de Descarbonización (Decarbonisation Working Group) established by the government, which sets out a timetable for closing all coal-fired power plants between 2021 and 2038. The second one was developed by the Fundación Chile Sustentable (Sustainable Chile Foundation) and KAS Ingeniería and sets out a more accelerated timetable for closing the 28 coal-fired plants between 2019 and 2030, a proposal which was publicly presented in May 2019; and the third proposal, developed by the Ministry of Energy, which sets out a partial schedule for the closure of the 8 oldest coal-fired power plants between 2019 and 2024, leaving the closure of the remaining coal-fired power plants the subject for future agreements (every 5 years) and the responsibility of future governments, to be completed by 2040. Consequently, the transition to decarbonisation of the energy sector in Chile has already been outlined, and what remains to be seen is whether the timetable will be subject to sufficient accountability in order to reduce emissions in line with the urgency demanded by science and by society, or whether it will succumb to the narrow-minded pressure from companies that put corporate profit before protection of the Planet.

The Announcement

On 4 June President Sebastián Piñera and Energy Minister Susana Jiménez announced a decarbonisation programme for Chile, with three main commitments:

- 1- Closure of 8 coal-fired thermal power plants by 2025, with a timetable for the decommissioning of the plants on specific dates between 2019 and 2024.
- 2- Closure of the remaining 20 coal-fired plants by 2040, without a specific timetable for decommissioning, but subject to the discretion of the companies with whom future governments should meet every 5 years to hear their commitments.

- 3- Chile will be carbon neutral by 2050. While the announcement of the aspiration to achieve neutrality in terms of CO₂ emissions in accordance with the stated wish of the United Nations to limit global warming to between +1.5 and +2° degrees is indeed noteworthy, the president did not present any plan or any specific programme to achieve carbon neutrality.

Phase 1: Timetable for the closure of 8 coal-fired power plants by 2025

The first phase of decarbonisation announced by the government is the only one which envisages a timetable for closure, on specific dates, of the eight oldest power plants between 2019 and 2024, which have a total installed capacity of 1,047 MW. Of these, 1 plant is located in the city of Iquique, 4 in the city of Tocopilla, 2 in Puchuncaví and 1 in the city of Coronel (see table 1); together these represent around 19% of the total installed capacity of coal-fired power plants, but they are not very significant in terms of generation since most do not inject large amounts of energy into the electricity system.

Agreement between the companies and the Ministry of Energy on the date of decommissioning and disconnection of these coal-fired plants will be arranged in accordance with the procedures of the Electricity Law, which allows the announced closure dates to be brought forward subject to approval by the Electricity Coordinator and the National Energy Commission. (Article 72 of the Law).

Within the timetable announced on 4 June the first plants to close during 2019 are Engie's Tocopilla units 12 and 13, which together total an installed capacity of 172 megawatts. The closure of both plants had already been announced by Engie at the beginning of 2018 and their closure had been authorised by the Electricity Coordinator; however, closure is conditional on the connection of the Cardones-Polpaico power transmission line.

Nonetheless, just days before the government's decarbonisation announcement, Engie integrated the new coal-powered thermal power unit "Infraestructura Energética Mejillones", with a capacity of 375 megawatts, into the National Electricity System, and as a result, despite the closure of the Tocopilla units, by the end of 2019 Chile will have a greater coal-fired generating capacity (+200 megawatts) than it had in 2018.

The decarbonisation announcement included a commitment by the government (National Energy Commission) to amend the "Regulation of Power Transfers between Generating Companies", which will come into effect by 2021 at the latest. **The amendment will include a new operational status "Estado Operativo de Reserva Estratégica" ("ERE") - Strategic Reserve Operational Status - which can be applied for a maximum period of 5 years, to coal-fired generators which seek decommissioning and disconnection. Payment for power plants with ERE will be 60% of the current power payment, which is paid to power plants for remaining operational when they are called upon to transmit power to the electricity system.** A further period determined by the CEN can be added to this maximum period, if a plant is required to remain operational. Hence society will continue to pay for coal-fired power plants for an additional 5 years from their date of closure and disconnection.

The commitments for the decommissioning and disconnection of the 8 coal-fired thermal power plants included in the announcement called the First Decarbonisation Phase, is a binding commitment by the companies AES-Gener, Engie and Enel, and their deadline for compliance expires on 31 December 2025.

TABLE 1: FIRST PHASE DECOMMISSIONING AND DISCONNECTION OF 8 COAL-FIRED PLANTS BETWEEN 2019 - 2025

COMPANY	UNITS	POWER	CLOSURE DATE	SUBJECT TO ERE	CONDITIONS OF CLOSURE
ENGIE	Tocopilla 12	87 MW	2019 (Requested in April 2018 for CEN, CNE and SEC)	NO	Subject to the 500 kV Nueva Maitencillo – Pan de Azúcar – Polpaico system being fully operational.
	Tocopilla 13	86 MW	2019 (Requested in April 2018 for CEN, CNE and SEC)	NO	Subject to the afore-mentioned transmission project being operational in June, the Company will proceed with the decommissioning and disconnection of U12 and U13 effective from the date of signing the agreement (June 2019).
	Tocopilla 14	136 MW	31 May 2024	Yes. ERE payment can be requested	The closure of these plants is subject to the amendment of the Regulation of Power Transfers between Generating Companies coming fully into effect , under the conditions agreed in the same agreement, and which guarantees non-discriminatory treatment between generating companies.
	Tocopilla 15	132 MW	31 May 2024	Yes. ERE payment can be requested	The closure and disconnection of U14 and U15 was also made conditional on the feasibility of expanding transmission and on the economic efficiency of the market. The company will communicate the closure and disconnection dates for both plants from 1 January 2022 onwards.
ENEL	Tarapacá	158 MW	31 May 2020	NO	NO
	Bocamina 1	130 MW	31 December 2023	YES. ERE payment can be requested Enel will evaluate the possibility of including the Bocamina I plant in ERE status and payment.	Should the date proposed by Enel be prior to the effective date of the amendment of the Regulation of Power Transfers which includes the payment for adherence to ERE, the date proposed by Enel will be the same as the effective date of the amendment of the regulation. However, ENEL retains the option not to invoke ERE.

AES GENER	Ventanas 1	120 MW	1 November 2022	Yes. Can benefit from ERE payment (Article 9)	The closure of these plants is conditional on the amendment the Regulation of Power Transfers between Generating Companies coming into effect , under the conditions agreed in the Agreement, and which guarantees non-discriminatory treatment between generating companies.
	Ventanas 2	220 MW	1 May 2024	Yes. Can request and benefit from ERE payment (Article 9)	

Source: Chile Sustentable (Sustainable Chile), on the basis of the agreements signed between companies and the Ministry of Energy, June 2019.

Phase 2: Working groups every 5 years for the closure of 20 coal-fired plants by 2040

The second phase of decarbonisation announced by the government considers the decommissioning and disconnection of the rest of the coal-fired thermal power plants which operate in the National Electricity System. These belong to the companies AES-Gener with 13 units, Engie with 5 units, and Enel and Colbún with one unit each. The Agreement signed by each company with the Ministry of Energy does not establish closing dates for the plants, but rather it establishes the commitment to take part in working groups every 5 years, in the context of which the companies will propose the closure of some of their units. In the texts there are is no legally binding commitment; instead the decision on closure of the remaining 20 coal-fired thermal power plants is left to future agreements to be determined from 2025, with the exception of Enel whose agreement states that the deadline for closing the Bocamina 2 plant will be the year 2040. In the Agreements between companies and government conditions are also outlined for possible future agreements on the closure of coal-fired power plants, such as: a) they will continue to be subject to shareholder and board approval (Engie); they will be conditional on fulfilment of the electricity supply contracts of the companies (Engie; Colbún); there should be no impact on contracts that were signed with clients who had to be backed by coal-based investments due to a gas crisis with Argentina (Colbún); the stability of the electrical system (Engie, AES-Gener; Enel); the development of transmission systems (Engie); compliance with environmental goals (Engie, AES-Gener, Colbún) and the cost of energy (Engie, AES-Gener, Colbún).

TABLE 2: PHASE OF CLOSURE OF THE REMAINING 20 COAL-FIRED PLANTS BY 2040

COMPANY	UNITS	POWER	CLOSURE DATE	CONDITIONS FOR DEFINING THE CLOSURE DATE
ENGIE (5 power plants)	-Mejillones 1	160 MW	The Agreement does not set closure dates. Engie undertakes to actively participate in the working groups and affirms that it will employ its best efforts	- The Agreement states that any agreement in relation to the dates of decommissioning and disconnection of plants will be subject to the approval of the board of directors and the shareholders' meeting of ENGIE Chile, and to the interests of all its shareholders , in accordance with Chilean law and the standards which regulate corporate governance and internal decision-making procedures.
	-Mejillones 2	174 MW		
	-Hornitos	178 MW		
	-Andina	177 MW		
	-IEM (Infraestructur	375 MW		

	a Energética Mejillones)		to support the decarbonisation timetable in Chile.	-Any agreement in relation to closure dates will be determined in the context of the legal obligations to comply with its electricity supply contracts; the stability of the system, the fulfilment of obligations, the fulfilment of environmental objectives, the development of the transmission system and the cost of energy.
AES GENER (13 power plants)	<p>Norgener 1</p> <p>Norgener 2</p> <p>Angamos 1</p> <p>Angamos 2</p> <p>Cochrane 1</p> <p>Cochrane 2</p> <p>Guacolda 1</p> <p>Guacolda 2</p> <p>Guacolda 3</p> <p>Guacolda 4</p> <p>Guacolda 5</p> <p>Nva. Ventanas</p> <p>Campiche</p>	<p>140 MW</p> <p>136 MW</p> <p>277 MW</p> <p>281 MW</p> <p>275 MW</p> <p>275 MW</p> <p>152 MW</p> <p>152 MW</p> <p>152 MW</p> <p>152 MW</p> <p>152 MW</p> <p>272 MW</p> <p>272 MW</p>	The text of the Agreement with AES- Gener does not set closure dates.	- The agreement on the dates of closure of the coal-fired thermal power plants will be subject to obligations to ensure the stability of the system, compliance with environmental objectives and the cost of energy.
ENEL (1 power plant)	Bocamina 2	350 MW	The Agreement does set a deadline of 2040	-The Agreement establishes that 2040 will be retained as the deadline, but consideration will be given to the analyses carried out in the corresponding working groups, in relation to the stability of the system, the fulfilment of environmental objectives and the cost of energy.
COLBÚN (1 power plant)	Santa María	370 MW	<p>The Agreement does not set closure dates.</p> <p>It does state that it will actively participate in the participatory process</p>	<p>-The Agreement signed between Colbún and the Ministry of Energy states that regulatory and market signals must be set in the decarbonisation timetable in order to continue to develop a diversified technological matrix.</p> <p>-The timetable should consider the appropriateness and the importance of not impacting contracts that were signed with clients who had to be backed by investments</p>

			to discuss the flexibility project.	<p>in coal-fired power plants in response to the Argentinian gas crisis.</p> <p>-The Santa María plant continues to be subject to the condition of not affecting or causing a breach of the contract between Colbún S.A. and Corporación Nacional del Cobre (Contract 2- 2010).</p>
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Source: Chile Sustentable (Sustainable Chile), on the basis of the agreements signed between companies and the Ministry of Energy, June 2019.

Conclusions

The decarbonisation plan announced by President Piñera expresses the aspiration that the country wishes to be carbon-neutral in terms of its emissions by 2050, which complies with the commitments required by the United Nations from OECD member countries. However, the announcement does not include policies, programmes or specific actions to bring about decarbonisation, except in relation to the closure and disconnection of coal-fired thermal power plants.

However, the announcement of the scope of this action means that it is totally inadequate for achieving carbon neutrality, given that it refers to the closure of only 8 coal-fired thermal power plants between 2019 and 2025; this corresponds to an installed power capacity of around 1,000 megawatts out of a total of 5,200 megawatts from coal-fired plants, to which we also need to add the newly opened "Infraestructura Energética Mejillones" coal-fired thermal power plant owned by the French company Engie, which adds another 375 megawatts to the country's coal-based fleet, with the corresponding increase in CO2 emissions.

In conclusion, Chile's coal-based generating capacity will increase for the period 2019-2024, instead of decreasing.