

IEA-Advanced Motor Fuels ANNUAL REPORT 2019

Chile



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Drivers and Policies

Chile has acquired and ratified international agreements on GHG emissions and climate change. The country has set itself the objective of promoting the efficient use of energy.

The year 2019 was marked by the search for agreements and the consensus to move toward a more sustainable energy matrix. The initial step was the private public agreement that led to the Decarbonization Plan of the Energy Matrix, with the objective of being carbon neutral by 2050. To achieve this ambitious goal, Chile plans to clean the power generation matrix, in addition to using clean energy in other sectors.

Currently, 40% of the energy produced in Chile is produced with coal, a fuel that generates local pollution and GHG and contributes to global warming. In order to be carbon neutral by 2050, it is essential that Chile reduce the number of power plants that generate energy with coal. The first strategic phase includes the departure by 2024 of eight power plants responsible for a total of almost 1,000 megawatts; these closures had already been announced by the government and by the operating companies. The second strategic phase involves the closure of the remaining 20 coal-fired power plants in the country no later than 2040.

Chile is the country with the highest solar radiation in the world, but it also has enormous wind potential in the south, including a mountain range with approximately 3,000 volcanoes and a coastal edge of more than 6,000 kilometers, which together represent tremendous potential for development of geothermal and marine energies. In fact, non-conventional renewable energies (NCRE), such as solar, wind, geothermal, and others, already generate more than 20% of the electricity consumed in Chile. The country has fulfilled 20% of the goal established for 2025, six years earlier than originally expected.

Regarding transport, 36% of the final energy consumption in Chile corresponds to the transport sector and, of this fraction, 99% corresponds to petroleum products. This sector is responsible for approximately 20% of the country's total GHG emissions.

To meet the challenge of reducing GHGs in the transport sector, the energy efficiency of the country's fleet of vehicles must be improved. Several public projects currently under development have a direct impact on energy

efficiency and CO₂ reduction: public/private implementation of a bus system project in Santiago promoting the meeting of emissions standards; measurement of vehicles and their energy efficiency; implementation of energy efficiency standards across sectors, including transport, and promotion of electromobility.

Public Transport of Santiago Bid

A new transportation plan is being offered using an innovative business model in Santiago, the capital and largest city in Chile. In this offer, the bus supply is separate from the operation of the routes.

In November 2019, Chile's government announced a tender for public transport buses in Santiago. In this new model, the buses will be from the State, while the operator will be responsible for the maintenance and the terminals necessary for the operation of the vehicles. The main objective is to separate capital investment from operating expenses. This new system of operation of the buses of public transport for Santiago will allow for the easy replacement of those operators that do not fulfill what was promised; buses will be withdrawn and delivered to a new operator.

The key points of this initiative are:

- Bus supply is separate from the operation of the routes
- More than 2,000 buses of the total current fleet (6,500 buses) will be renovated
- New buses must meet high standards of comfort, safety, accessibility, connectivity and emission control
- In addition to the technical aspects of the tender, buses that have better energy efficiency will have a better assessment weighting.

The most relevant dates pertaining to the new bus transportation offer in Santiago are the call for tender in November 2019, presentation of the offers in February 2020, and adjudication in May 2020.

Implementation of Vehicle Energy Efficiency Regulation¹

For new light vehicles, Chile became the first Latin American country to implement a compulsory labeling of vehicular energy efficiency in June 2013. In June 2017, this label was expanded to include medium-sized vehicles and electric cars. This allows buyers of new light vehicles, powered by diesel gasoline or electric, to compare their energy performance.

¹ www.consumovehicular.cl

The vehicle label indicating fuel efficiency reports in km/l for petrol or diesel vehicles, or in km/Kwh for electric vehicles. All measurements take into account city, highway, and mixed use driving. The measurements of each vehicle help form a large database. Over the years, these measurements have allowed the development of different studies that will be the basis for the development of energy efficiency regulations and standards for light and medium vehicles.

Project of Law – Energy Efficiency

It is important to improve energy efficiency in different areas of the country, including the housing sector, production sector, transport sector, building sector, and others. In the area of transport, a project of law in Chile proposes defining the energy efficiency standards for fuel consumption in light, medium and heavy vehicles. This project is currently under discussion in the Chilean Congress and was approved by the Senate at the end of 2019, which means it will go on for discussion in the chamber of deputies.

The annex developed different scenarios to define energy efficiency standards initially for light vehicles. Scenarios always consider a baseline obtained from the average performance curve of the vehicle fleet of new vehicles for a given year.

Implementation of energy efficiency standards will be differentiated for the vehicle category. For light vehicles, standards will be measured in the short term; for medium vehicles, standards will be measured in the medium term; and for heavy vehicles, standards will be measured in the long term. The metric that will be used to define these standards will be the energy efficiency in km/l of gasoline equivalent and its equivalence in grams of CO₂/km. Those responsible for ensuring vehicles comply with energy efficiency standards will be importers or representatives for each brand of vehicle sold in Chile. The control of compliance with these energy efficiency standards will be annual. Non-compliance by importers or representatives for each vehicle brand will be sanctioned.

Research and Demonstration Focus

Energy efficiency in buses, and measurement of fuel consumption in Transantiago

Energy consumption measurements in electric buses were made in 2019, in accordance with Ministry of Transport and Telecommunications Resolution 2243, which details technical regulations to obtain energy consumption in urban public transport buses in the city of Santiago . The results can be

found on the website of the vehicle control and certification center belonging to the Ministry of Transport and Telecommunications “3CV”: <https://mtt.gob.cl/3cv.html> (left column: Certificación características funcionales y dimensionales Buses estándar Transantiago).

Evaluation of the performance of heavy vehicles (Annex 57)

The project to evaluate the performance of trucks worldwide is coordinated by “AMF of AIE”. The local objective of Annex 57 is to obtain fuel consumption, using a sample of trucks that represents the fleet of vehicles circulating in the cities and roads of Chile. The procedure for carrying out the tests considers:

- The measurement of fuel consumption is km/l
- The type of test is “World Harmonized Vehicle Cycle” (WHVC), with vehicles measured on the chassis dynamometer in all categories
- The measurement site is Emissions Laboratory of the 3CV Vehicle Control and Certification Center, Ministry of Transportation and Telecommunications of Chile.

To begin this program, the measurement of fuel consumption was coordinated with three companies in the field that offer customized trucks. Measurements began in January 2020 and at least six trucks are expected to be measured during the year.

Outlook

Public Private Agreement

Together with the Ministries of Transportation and Environment, the Ministry of Energy leads the implementation of the National Electromobility Strategy through the execution of the proposed actions on the 2018-2022 Energy Route. During 2019, important advances were made. More than 400 electric buses currently operate in the public transport of the Santiago bus fleet. We also anticipate an increase in the already extensive network of electric chargers in Chile and an increasing rate of electric car sales.

To the extent that Chile meets its goal of cleaning its energy matrix (private/public agreement for decarbonization of the energy matrix, with the objective of being carbon neutral by 2050), it can use that clean energy in private vehicles, cargo vehicles and public transport. Therefore, Chile must continue to prepare for this on multiple levels. To date, 54 companies or public/private organizations have committed to improving the energy matrix, namely through the creation of specific financial instruments for

investment in electromobility, the development of human capital, the expansion of the supply of electric vehicles, the increase in the number of chargers, and other significant actions.

Additional Information Sources

- Transport: www.mtt.gob.cl
- Pollutant, Environment: www.mma.gob.cl
- Energy: www.energia.gob.cl
- Vehicles Fuel Economy (Label): www.consumovehicular.cl
- Type Approval or Certification: www.mtt.gov.cl/3cv

Benefits of Participation in the AMF TCP

Chile's participation in the AMF TCP facilitates work on energy efficiency projects in the country's transport sector by providing international support. Knowledge of the different programs of the various partner countries enables the implementation of best practices. The exchange of information with international experts from the various emissions laboratories and research centers is an invaluable experience.