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# Renewable Energy Policy Brief

# CHILE

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## Acknowledgement

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# 1. Policy

## Electricity

Chile has a **target** to generate 20% of its electricity from renewable sources by 2025.[1] This target was established in 2013 by Law 20698, better known as "Law 20/25," and updated a previous target of 10% renewable electricity by 2024. The 10% target was set in 2008 by the Non-Conventional Renewable Energy Law (Law 20257) and reaffirmed, *as a minimum,* in 2012 by the National Strategy for the Energy Sector. The 2014-2018 Energy Programme aims at achieving a 45% renewable energy share for new electric capacity installed between 2014 and 2025.

A **quota obligation** is Chile's main support scheme for renewable electricity. The 2008 Non-Conventional Renewable Energy Law (Law 20257) set an initial quota of 5% renewable electricity in 2014 to be increased in 0.5% yearly increments until 2024. The quota applies to all electricity sales and has a non-compliance penalty of approximately USD 32/MWh,[2] which can go up to USD 47/MWh after three years of non-compliance. In 2013 Law 20/25 increased the quota (for contracts signed after July 2013) to 5% in 2013, with yearly increments of 1% until reaching 12% in 2020. Thereafter, yearly increments of 1.5% would bring the quota up to 18% in 2024, followed by a 2% increase to reach 20% in 2025.

**Auctions** are used both by the private and the public sector in Chile. Since 2005 Law 20018, also known as "Short Law II," requires electricity distribution companies to source power for regulated markets through non-discriminatory auctions (thus including renewables) and allows renewable energy producers to sign long-term PPAs with distribution companies.

In 2013 Law 20/25 introduced a new public auction system complementing the existing quota obligation. The new system allows for public auctions on years when it is anticipated that the renewable electricity quota will not be fulfilled. The auctions will be technology neutral (amongst renewables) and based exclusively on price, providing a 10-year PPA. The price of the auction will be capped at the projected cost of "efficient expansion" of capacity at nodal point.

A **net metering** scheme for consumers under regulated electricity tariffs was established in 2012 by Law 20571. The scheme applies to renewable energy and cogeneration systems of up to 100kW. The compensation price for produced electricity, equal to the regulated price per kWh plus avoided transmission losses, will be deducted from the monthly bill, and carry over in case of a net balance in favour of the producer. Connection costs must be paid by the producer and cannot affect other consumers. The producer owns the renewable energy credit associated with generation and can sell it to any company in order to fulfil the renewable energy mandate. The net metering law entered into force in September 2014 with the publication of Decree 71 that regulates it.

**Grid access** for renewable energy in Chile was facilitated in 2004 by the "Short Law I" (Law 19940). The Short Law I stipulated non-discriminatory grid access and the right to sell at spot or nodal price for renewable energy producers with installed capacity under 9MW. The law exempted renewable energy producers under 9MW from transmission fees, and provided reduced fees for those between 9 and 20 MW. The Short Law I also determined cost allocation for grid expansion. In 2013, the process for grid extension was streamlined by the Electrical Easement Act (Law 29701). The 2012 *Support for Non-Conventional Renewable Energy Development Programme* aims, among others, at subsidizing transmission lines for renewable energy projects.

There are no **fiscal incentives** for renewable electricity in Chile. However, a **carbon tax** was enacted in September 2014 (Law 20780 of Tax Reform). The yearly tax of USD[3] 5/tonne$CO_2$ applies to emissions from power plants of 50MW or more (except biomass) starting in 2017 (to be paid in 2018).

There have been at least USD 208 million of **support** to renewables in Chile since 2001.

[1] Excluding hydropower plants over 20 MW.
[2] The penalty is set at 0.4 UTM/MWh (increasing to 0.6UTM/MWh after three years of non-compliance). UTM is a legally defined "Monthly Tax Unit" in Chile that changes from month to month adjusting for inflation. The used USD conversion rate and UTM value (34668 CLP) are from the date when the law was adopted.
[3] The tax is set in USD

Since 2005 the *Invest Chile Project* partially subsidizes pre-feasibility and pre-investment studies (support capped at USD 160,000 per project). Initial public subsidies for feasibility studies were complemented in 2008 with EUR 3 million subsidies from a German government-owned private bank (KfW), as part of an EUR 85 million loan to finance low-interest credits for renewable energy projects in Chile. The *Invest Chile Project* was continued in 2012 by the *Support for Non-Conventional Renewable Energy Development Programme*, with a USD 85 million budget. The 2014-2018 Energy Programme aims at strengthening support schemes for pre-investment in renewable electricity generation.

Chile provides **technology-specific support** and regulations, notably for geothermal and solar. The *Law 19657* on Geothermal Energy Concessions provides a clear regulatory framework for geothermal exploration and development, with specific provisions addressing potential overlaps with mineral rights. Concessions are allocated through an auctioning system, are transferable, and inheritable. In 2013, Decree 114 simplified the process for applying and obtaining geothermal concessions.

Support for concentrated solar power (CSP) includes a USD 20 million subsidy for up to 50% of the costs of one project through the *Support for Non-Conventional Renewable Energy Development Programme*. The programme also has a budget of USD 12.8 million for an R&D Excellence Centre for Solar Energy.

The 2014-2018 Energy Programme states that a solar roofs program (in public buildings) will be launched in 2014, and that support mechanisms will be established in 2015 to support financing of PV self-generation in small and "micro" companies.

The electricity generated by hydropower projects under 20MW are eligible for Chile's quota obligation. Hydropower projects between 20MW and 40MW are partially eligible. The 2014-2018 Energy Programme aims to promote the sustainable development of hydropower including through new environmental legislation and land use planning in river basins.

## Heating

The 2009 Regulatory Framework for Solar Water Thermal (Law 20365) provides technical standards, certification systems and fiscal incentives for solar water heating systems. The 2014-2018 Energy Programme plans to extend and improve the fiscal incentives for solar water heating, as well as providing subsidies for installation of solar water heaters in reconstruction of disaster-affected areas (Arica, Iquique and Valparaíso).

Fiscal incentives under Law 20365 include tax exemptions ranging from 20% to 100% on a progressive scale based on property value.

The 2014-2018 Energy Programme also aims to promote the use geothermal energy for low and medium temperature uses such as domestic and commercial heating.

The 2014-2018 Energy Programme further aims to create the "Firewood Boards" at the national and regional levels to address safety, equity, environmental and economic aspects of the use of firewood for heating. Additionally, it is working on the improvement of market information about biomass, productive development and increased quality standards through regulation.

## Transport

**Fiscal incentives** for biodiesel and bioethanol include an exemption[4] from fuel tax (and alcohol tax in the case of bioethanol), but not of VAT.

**Regulations**[5] are in place allowing the blending of bioethanol and biodiesel with gasoline and diesel respectively at 2% or 5%.

## Energy Access

Chile's Rural Electrification Programme (PER) was a decentralized programme created in November 1994 as part of the government strategy to fight poverty and raise the quality of life in rural areas. At the beginning of the PER in 1994, rural electricity coverage was 59%, reaching 96% at the end of 2010. Currently, each Regional Government establishes their own strategies, budgets and goals in rural electrification.

In 2001 Chile launched a *Programme for Rural Electrification with Renewable Energy* in

[4] Circular Nº30, 16 May 2007, Internal Revenue Service

[5] DS 11/08 Ministry of Economy

collaboration with the GEF and UNDP (CHI/00/G32). The program had a budget of USD 32.4 million (USD 6 million in GEF funding and USD 26.33 million in Chilean public and private funding). By its conclusion in 2012 the programme had resulted in pilot projects, over 6,000 individual PV systems installed, a capacity building program for small business and cooperatives on O&M of renewable energy systems, and over 44 standards issued for solar PV, micro-wind, micro-hydro and hybrid systems.

In 2009, a Program for Rural and Social Energy (PERYS) was launched to expand the provision of energy for public services and to develop energy solutions for productive uses, principally in isolated areas. Priority is given to renewable sources, mainly solar energy in the north and centre of the country and small hydro and wind in the central-south regions. The PERYS programme facilitates design, financing, research and development of small-scale energy access pilot projects, training for project development and O&M. PERYS had a funding of USD 3.1 million in 2013 and USD 2.4 million in 2014.

The 2012 national plan for PV pumping from the ministry of agriculture provided subsidies of up to 90% of installation costs to farmers. In the period 2012-2013 USD 6.16 million[6] were provided resulting in 1376 systems and 743kW.

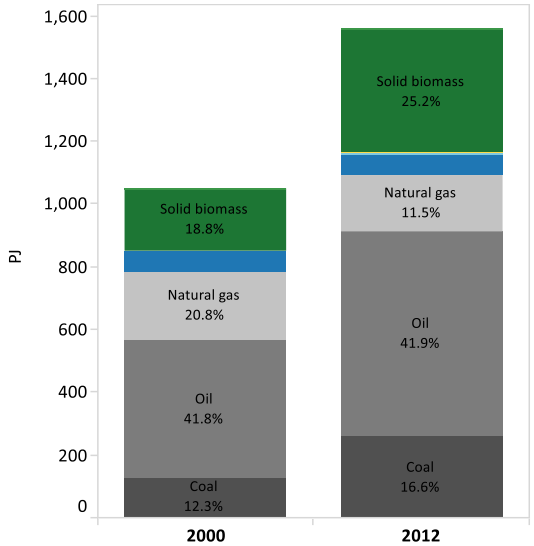
The 2014 pilot programme Energy Access Fund creates 3 grant funds for installation of renewable energy systems, local capacity building, and innovative technical solutions to meet small-scale energy demands. The ministry of agriculture dedicated USD 2.2 million to co-financing for renewable energy projects for productive uses in agriculture and forestry.

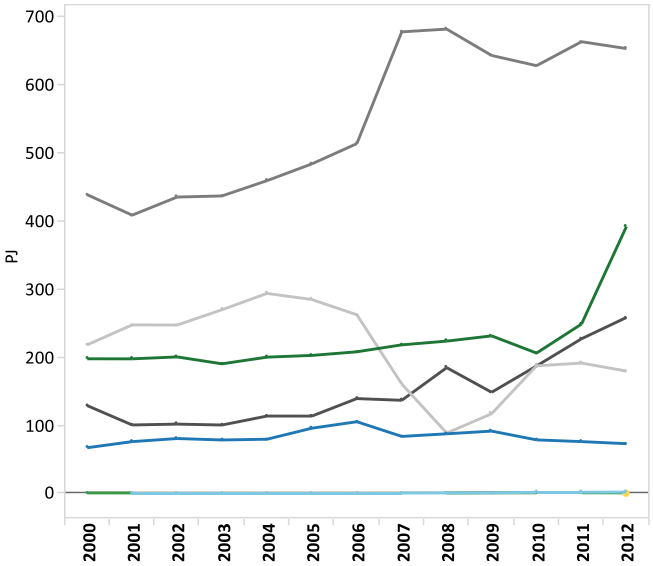
The Ministry of Energy established an Energy Agenda for the period 2014-2018. In the field of energy access, one of its overarching goals is the electrification of rural households, schools and health posts. The Agenda plans to use renewable energy to supply electricity for rural indigenous communities, and to substitute diesel generation in islands.

[6] CLP 3.767.723.586

# 2. Statistics

## Total Primary Energy Supply




Excludes electricity trade

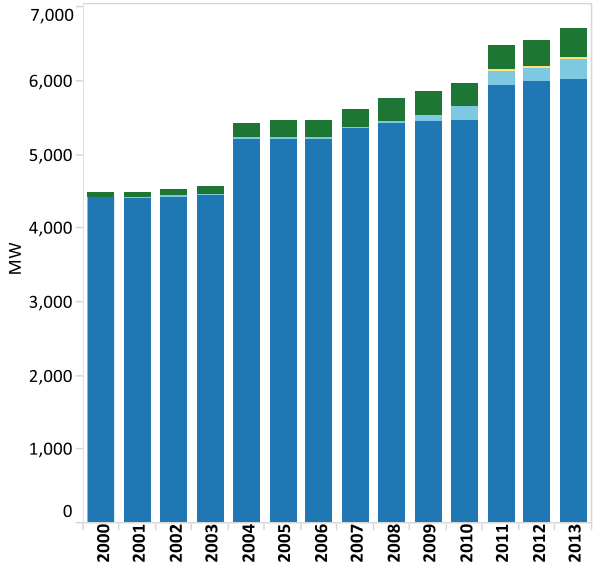
Biogas, Solid biomass, Solar, Wind, Hydropower, Natural gas, Oil, Coal

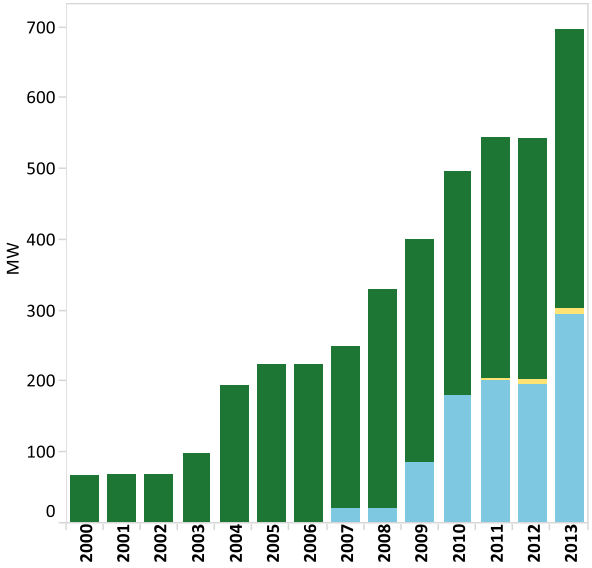
| | | Total Primary Energy Supply | Share of renewables |
|---|---|---|---|
| **2000** | Total | 1,053.7 PJ | |
| | Of which renewables | 264.3 PJ | 25.1% |
| **2012** | Total | 1,558.0 PJ | |
| | Of which renewables | 466.9 PJ | 30.0% |

Total includes electricity trade

| | | Total Primary Energy Supply | Share in total renewables |
|---|---|---|---|
| **2012** | Wind | 1.5 PJ | 0.3% |
| | Solar | 0.8 PJ | 0.2% |
| | Biogas | 0.3 PJ | 0.1% |
| | Solid biomass | 391.8 PJ | 83.9% |
| | Hydropower | 72.6 PJ | 15.5% |

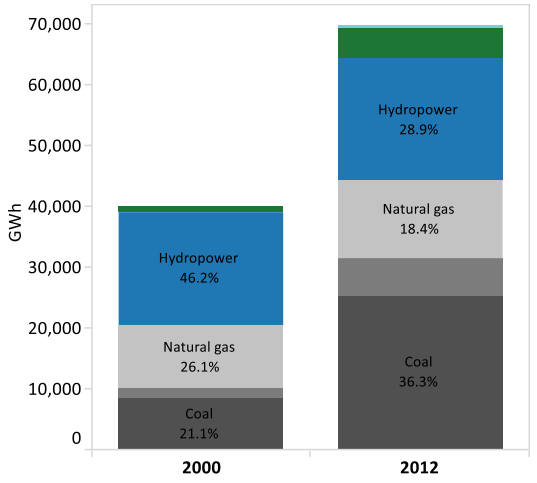
## Renewable Power Capacity

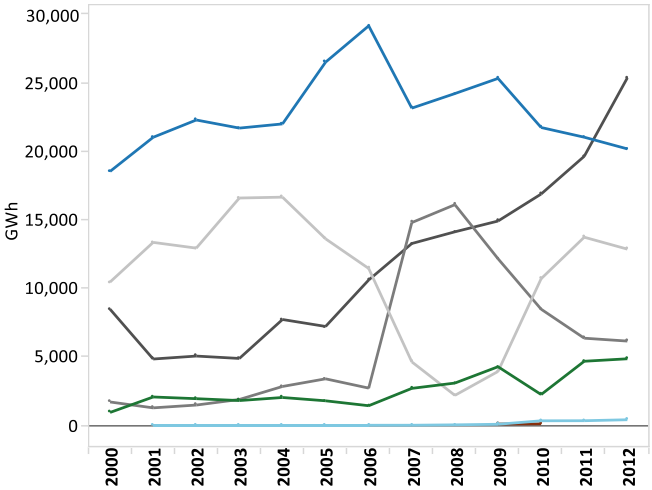



Solid biomass, Solar Photovoltaic, Onshore Wind, Hydropower

## Electricity Generation



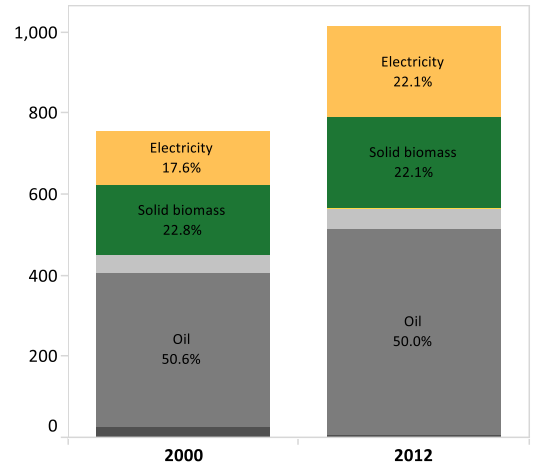



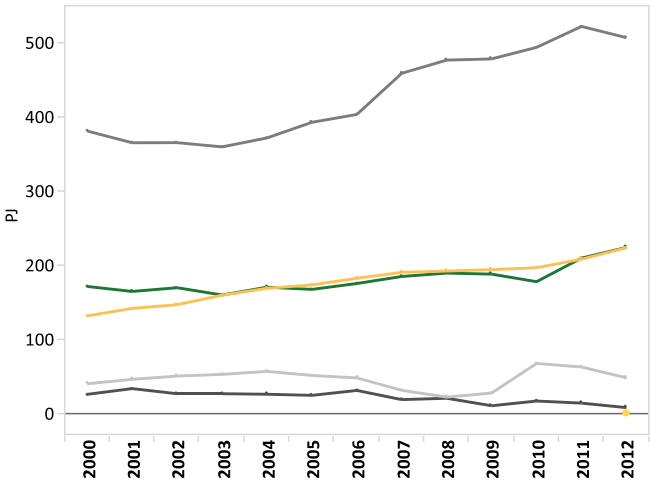

Solid biomass
Wastes/other
Coal
Wind
Natural gas
Hydropower
Oil

| | | Electricity generation | Share of renewables |
|---|---|---|---|
| **2000** | Total | 40,078.0 GWh | |
| | Of which renewables | 19,457.0 GWh | 48.5% |
| **2012** | Total | 69,751.0 GWh | |
| | Of which renewables | 25,421.0 GWh | 36.4% |

| | | Electricity generation | Share in total renewables |
|---|---|---|---|
| **2012** | Wind | 409.0 GWh | 1.6% |
| | Solid biomass | 4,854.0 GWh | 19.1% |
| | Hydropower | 20,158.0 GWh | 79.3% |

## Total Final Energy Consumption




Electricity
Solid biomass
Oil
Solar
Natural gas
Coal

| | | Total Final Energy Consumption | Share of renewables |
|---|---|---|---|
| **2000** | Total | 753.0 PJ | |
| | Of which renewables | 171.9 PJ | 22.8% |
| **2012** | Total | 1,013.8 PJ | |
| | Of which renewables | 225.3 PJ | 22.2% |

| | | Total Final Energy Consumption | Share in total renewables |
|---|---|---|---|
| **2012** | Solar | 0.8 PJ | 0.3% |
| | Solid biomass | 224.5 PJ | 99.7% |

Sources for these statistics: IRENA, IEA, UN

## Renewable Energy Policy Briefs

This brief is part of an IRENA series providing a comprehensive and timely summary of renewable energy policies in Latin America (including Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela).

The brief brings together the most up-to-date information on renewable energy public policies for the power, heating and transport sectors, and also includes a section on energy access policies. The objective of this brief is not to provide an assessment of the reported policies. The brief is primarily based on the information contained in the IEA/IRENA Joint Policies and Measures Database, complemented with information drawn from: (i) additional existing legislation, (ii) official government sources such as plans, reports and press releases, and (iii) input from country policymakers and experts. While the brief focuses on policies at the national level, sub-national policies are also included where relevant. Specific projects or programmes implemented by actors such as international organisations, development partners and the private sector are beyond the scope of this brief.

The information contained in this document is posted on IRENA's REsource web portal, will be used to update the IEA/IRENA Joint Policies and Measures Database, and will form the basis of IRENA's future policy work in Latin America.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