

# Renewable Energy

*Contributing editor*  
Eric Pogue



2019

GETTING THE  
DEAL THROUGH

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# Renewable Energy 2019

*Contributing editor*

**Eric Pogue**

**Hunton Andrews Kurth LLP**

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This article was first published in September 2018  
For further information please contact [editorial@gettingthedealthrough.com](mailto:editorial@gettingthedealthrough.com)

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Published by  
Law Business Research Ltd  
87 Lancaster Road  
London, W11 1QQ, UK  
Tel: +44 20 3780 4147  
Fax: +44 20 7229 6910

© Law Business Research Ltd 2018  
No photocopying without a CLA licence.  
First published 2017  
Second edition  
ISBN 978-1-78915-064-3

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Printed and distributed by  
Encompass Print Solutions  
Tel: 0844 2480 112



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# Preface

## Renewable Energy 2019

Second edition

**Getting the Deal Through** is delighted to publish the second edition of *Renewable Energy*, which is available in print, as an e-book and online at [www.gettingthedealthrough.com](http://www.gettingthedealthrough.com).

**Getting the Deal Through** provides international expert analysis in key areas of law, practice and regulation for corporate counsel, cross-border legal practitioners, and company directors and officers.

Throughout this edition, and following the unique **Getting the Deal Through** format, the same key questions are answered by leading practitioners in each of the jurisdictions featured. Our coverage this year includes new chapters on Armenia, Indonesia, Iran, Taiwan, Tanzania and Ukraine.

**Getting the Deal Through** titles are published annually in print. Please ensure you are referring to the latest edition or to the online version at [www.gettingthedealthrough.com](http://www.gettingthedealthrough.com).

Every effort has been made to cover all matters of concern to readers. However, specific legal advice should always be sought from experienced local advisers.

**Getting the Deal Through** gratefully acknowledges the efforts of all the contributors to this volume, who were chosen for their recognised expertise. We also extend special thanks to the contributing editor, Eric Pogue of Hunton Andrews Kurth LLP, for his continued assistance with this volume.

GETTING THE  
DEAL THROUGH

London  
August 2018

# Chile

Felipe Bahamondez Prieto, Paulina Fariás Castro and Diego Peña Diez

DLA Piper BAZ|NLD

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## Market framework

### 1 Who are the principal government participants in the electricity sector? What roles do they perform in relation to renewable energy?

The public institutions that have a significant role in Chilean electricity industry are:

- the Ministry of Energy, the government institution responsible for developing and coordinating the programmes, policies and regulations for the operation and development of the energy sector, ensuring their compliance;
- the National Energy Commission (CNE), the entity in charge of analysing the prices, tariffs and technical provisions that companies involved in the production, generation, transportation and distribution of energy must follow;
- the Fuels and Electricity Superintendency (SEC), the supervisory body in charge of monitoring and supervising compliance with legal and regulatory provisions and technical standards on the production, generation, transportation and distribution of electricity;
- the National Electric Coordinator is the entity responsible for ensuring the continuous operation of the Chilean power supply, ensuring the most economical operation of the electrical system, and guaranteeing open access to all electrical transmission systems;
- the Electricity Law Experts Panel is the entity created for the electricity sector, including gas, whose function is to resolve, through binding judgments, the disagreements and conflicts arising from the application of electric and energy legislation to institutions whose compliance is obligated by law in addition to other issues involving two or more companies in the electricity sector that by mutual agreement abide by its decisions;
- the Environmental Evaluation Service, the public body responsible for managing the environmental impact assessment system, which evaluates a project's compliance with existing environmental legislation, serving as an umbrella evaluation that assesses all environmental impacts;
- the Tribunal for the Defence of Competition, a special court formed by a panel of judges dedicated exclusively to antitrust matters, whose main function is the prevention, correction and sanction of antitrust infringements; and
- the Public Property Ministry and local municipalities, which play less important roles in the regulation of renewable energy; however, municipalities issue most of the relevant permits during the development of projects, and the Public Property Ministry grants concessions to develop non-conventional renewable energy (NCRE) projects on taxable land.

### 2 Who are the principal private participants in the electricity sector? What roles do they serve in relation to renewable energy?

The Chilean electricity sector is a concentrated market in all segments (ie, generation, transmission and distribution). In the generation sector, AES Gener, Cerro Dominador, Colbún, EDF Chile, ENEL Generación, ENGIE, Global Power Generation (GPG del grupo Gas Natural Fenosa), Orazul Energy, Pacific Hydro and Statkraft contribute 73 per cent of the installed capacity of the total generation of the

electricity system. The transmission sector is also concentrated mainly in Transelec SA, Transmisora Eléctrica del Norte SA and Interchile SA. Regarding distribution, due to its monopolistic nature and also to the existence of large-scale economies, this activity is organised around concessionary companies such as Compañía General de Electricidad SA, Enel Distribución Chile SA, Chilquinta Energía SA and Sociedad Austral de Electricidad SA. Some of the players in the generation segment are also renewable energy producers by themselves or with new entrants (local and international) that are making the energy sector less oligopolistic than it was in the past.

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### 3 Is there any legal definition of what constitutes 'renewable energy' or 'clean power' (or their equivalents) in your jurisdiction?

Chilean legislation on electricity refers to 'renewable energy' or 'clean power' with the term 'non-conventional renewable energy' (NCRE). Although the Chilean legal framework does not define this concept, it is described as the electrical energy generated by non-conventional renewable means of generation, which are those whose primary source is biomass energy, hydraulic energy below 20MW, geothermal energy, solar energy, wind energy, ocean energy and other means of generation determined by the CNE.

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### 4 What is the legal and regulatory framework applicable to developing, financing, operating and selling power and 'environmental attributes' from renewable energy projects?

The legal framework governing the Chilean electricity market consists of the following:

- general regulation of the electric sector: the main regulation is the General Law of Electric Services (Electricity Law), which comprises the incentives for the development of NCRE projects. The Electricity Law, in its article 150-bis regulates the NCRE attributes. There is a Regulation of the Electricity Law that details the norms contained in the Electricity Law in order to facilitate its application;
- geothermal norms, a separate law that regulates geothermal energy concessions, owing to the fact that a different legal status applies. This is the case because, unlike other renewable energy sources, the legislature considers geothermal energy to be a public asset, and it may only be explored and exploited after a specific concession is granted;
- technical regulations governing the installation, operation and maintenance of electrical facilities: these are mainly the decrees of the Ministry of Energy, as well as the Ministry of Economy, which regulate the implementation of the Electricity Law and similar regulations; but also the technical provisions issued by the CNE, such as the Technical Standard with Safety Requirements and Quality of Service dictated by the National Electric Coordinator, which ensures the coordination of the electrical system.
- regulation of the institutional framework in the electricity sector: this comprises the laws, decree laws and regulations that deal with the existence and functions of the main institutions and authorities involved in the development and operation of the electricity sector, such as the Ministry of Energy, the CNE, the SEC, the Electricity Law Experts Panel and the National Electric Coordinator; and
- other relevant regulations include the law that regulates the payments for residential generators, the regulation that created a

subsidy for transmission lines in order to facilitate access to NCRE projects, the tax exemption for solar collectors; the relevant environmental statutes that must be applied to certain projects, and the applicable antitrust norms.

### 5 Can environmental attributes be stripped and sold separately?

The Electricity Law regulates that those who exploit NCRE sources interconnected may benefit from the 20 per cent quota requirement, with the possibility of transferring the surplus to those who cannot comply with their own NCRE quota (which in the market has been referred to as NCRE attributes), even if they belong to different electricity systems. Although the sale value of NCRE attributes is agreed upon on a case-by-case basis between the parties that transfer them according to market criteria, the generators that cannot meet their NCRE quota see the costs associated with the acquisition of such surpluses as an alternative to payment of the fine for such default, which corresponds to 0.4 monthly tax units (approximately US\$28) for each MW/hour of deficit in respect to its obligation, which increases to 0.6 monthly tax units (approximately US\$42) in cases involving recidivism.

### 6 Does the government offer incentives to promote the development of renewable energy projects? In addition, has the government established policies that also promote renewable energy?

In Chile, a quota system requires electrical companies that have an installed capacity of more than 200MW and that withdraw energy from the electrical systems for trading with distribution companies and final consumers to certify that a certain percentage of their energy withdrawal comes from NCRE sources. This percentage will increase every year until it reaches 20 per cent in 2025. In order to comply with this obligation, electrical companies may transfer their surplus of NCRE attributes, even though it belongs to a different electrical system. As mentioned before, failure to comply with this obligation is sanctioned with the penalties detailed in question 5.

Among other relevant issues in 2004 and 2005, the legislature approved two laws that provide several advantages for NCRE projects over conventional sources. One of those advantages provided to NCRE projects is the exemption from paying tolls for using the main electrical transmission system. NCRE plants that generate less than 9MW are completely exempt, and NCRE plants that generate more than 9MW but less than 20MW are partially exempt.

Additionally, measures were established to facilitate the connection of the electrical system to NCRE plants with a capacity of less than 9MW, guaranteeing their access to the distribution facilities.

An annual tax on the polluting emissions of MP, NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub>, produced by facilities that reach a thermal capacity equal or greater than 50 MWt was approved in 2014.

Furthermore, in May 2017, the Public Property Ministry published several general instructions regarding concessions for onerous use of fiscal property in order to incentivise the development of NCRE projects on such public land. The Public Property Ministry may take the necessary measures so that NCRE projects make up 60 per cent of generated electricity by the year 2035 and at least 70 per cent of generated electricity by the year 2050.

Finally, the development of NCRE projects has been promoted through the allocation of the Corporation for the Promotion of Production (CORFO) subsidies for conducting investment feasibility studies and following stages of the NCRE projects. In addition, CORFO has approved a long-term credit line for financing NCRE projects with an installed capacity of up to 20MW.

### 7 Are renewable energy policies and incentives generally established at the national level, or are they established by states or other political subdivisions?

The laws that create policies for the development of NCRE projects are established at the national level.

### 8 What mechanisms are available to facilitate the purchase of renewable power by private companies?

Private companies may enter into power purchase agreements (PPAs) with NCRE generators, without the intervention of the authority.

Notwithstanding the foregoing, the Ministry of Energy has enabled public biddings organised by private companies, qualified as free clients, to satisfy their energy demand.

In addition, in the last public bidding process called by distribution concessionaires, the bid rules enabled the possibility of bidding in hourly blocks in order to promote the purchase of energy coming from NCRE power plants. As a result of the NCRE's participation, the prices were much lower than in prior public bidding.

### 9 Describe any notable pending or anticipated legislative proposals regarding renewable energy in your jurisdiction.

Currently, three bills of law that aim to encourage the development of NCRE projects are being processed in Congress:

- the first would allow the Ministry of Energy to promote the use of NCRE in the economic activities of small and medium-sized companies by granting subsidies to them;
- the second would require geothermal energy projects to be submitted to environmental evaluations; and
- the third would facilitate the acquisition of geothermal concessions by amending the regulatory law.

### 10 What are the biggest drivers of change in the renewable energy markets in your jurisdiction?

Promoting policies approved by the state has contributed to NCRE's development; these policies include a reduction in the payment of electricity transmission tolls, the obligation for electricity companies to have a percentage of withdrawals from NCRE sources, the establishment of investment support funds and the establishment of measures to facilitate the interconnection of generating plants, among others.

Nevertheless, it seems that the increase in investments associated with NCRE projects can be mostly attributed to better industry knowledge of the technology used in these projects and more competitive implementation costs. Therefore, in a market driven by competition such as the Chilean energy market, lower costs are the main driver of success.

In addition, Chile has begun to develop NCRE storage projects, which will solve the intermittency problems of this type of energy, and hopefully allow for an even greater consolidation of this type of project in the country.

The entry of these types of projects has had a very positive impact on the electricity market because it has become more competitive, as new players have entered into it, which has greatly decreased the price of electricity for both regulated and non-regulated customers.

### 11 Describe the legal framework applicable to disputes between renewable power market participants, related to pricing or otherwise.

There is a specialised body that solves conflicts related to electrical and gas matters in Chile, the Electricity Law Experts Panel (Panel), whose responsibilities and functions are regulated by the Electricity Law.

When companies require the intervention of the Panel, the latter must issue binding opinions resolving discrepancies and conflicts arising from the application of the electric legislation. This Panel is highly technical, non-judicial, collegiate and independent. It is formed by five engineers and two lawyers.

Some of the most important aspects of the Panel are the short time-frame in which its expert opinions are issued and the very technical approach of these opinions. In addition, the parties may choose to submit their dispute to a common arbitration procedure or to appeal to ordinary courts.

### Utility-scale renewable projects

#### 12 Describe the primary types and sizes of existing and planned utility-scale renewable energy projects in your jurisdiction.

As of April 2018, the Electrical National System had a generation capacity of 23,786.1MW. Of this, 46 per cent is produced through technology based on NCRE (hydroelectric energy 61.2 per cent, photovoltaic energy 20.9 per cent, wind energy 12.9 per cent, biomass energy 4.4 per cent and geothermal energy 0.6 per cent), and the other 54 per cent is produced from conventional thermoelectric plants based on natural gas, coal and petroleum products.

The size of NCRE projects varies, from small projects of nearly 1MW now being constructed or already operating, up to large plants over 100MW.

### 13 What types of issues restrain the development of utility-scale renewable energy projects?

Nowadays the main difficulty in the development of NCRE projects is that once they are operational, they face problems injecting all their energy into the system, given the restrictions in the transmission system of the SIC's northern zone. This means at various times of the day energy from NCRE projects is not taken advantage of, since the transmission system does not have the capacity to move all the energy into Chile's central zone, which is the main source of energy consumption. This problem should be resolved once the Polpaico Cardones transmission line (2x 500kV) enters into service and once the interconnection of the SIC with the SING has been realised by the end of 2018.

Additionally, most photovoltaic projects do not have storage capacity and therefore must inject all the energy generated immediately into the electrical system, producing an oversupply of energy during defined time blocks of low demand. This impacts the price of energy produced by solar plants and generates a dependency on conventional sources of energy that are able to provide energy in higher-demand time blocks.

Another difficulty involves financing, where electricity bids have been awarded for low prices. The lower margins and flows associated with the energy prices offered will affect the debt component, particularly in project finance. Renewable merchant projects are currently difficult to finance.

## Hydropower

### 14 Describe the primary types of hydropower projects that are prevalent.

Currently, hydroelectric projects consist mainly of hydroelectric power plants using dams and run-of-the-river hydroelectric and mini hydroelectric power plants. As of April 2018, the hydroelectric power plants using dams represent 30.89 per cent of the NCRE produced in Chile. Run-of-the-river hydroelectric and mini hydroelectric power plants reached 30.38 per cent. Usually these kinds of projects have a generation capacity of between 9MW and 50MW.

### 15 What legal considerations are relevant for hydroelectric generation in your jurisdiction?

A hydroelectric generation plant with a capacity above 3MW must obtain an environmental qualification resolution (RCA), which qualifies the project as being favourable to the environment. Additionally, the RCA establishes the relevant environmental permits necessary for developing the project, depending on its specific characteristics.

The developer of a hydroelectric generation plant may request an electrical concession from the Ministry of Energy, which would allow him or her to impose the necessary electric legal easements on a third party's land for constructing and developing the project. Such concessions can be provisional (for study) or definitive (for constructing the project), and are granted directly to the interested party.

## Distributed generation

### 16 Describe the prevalence of on-site, distributed generation projects.

Usually distribution generation projects have one of two modalities:

- projects developed according to the Law of Net Billing (No. 20,571 of 2012), which allows residential electrical customers to generate energy for their own consumption, to inject the surplus energy into the electrical system, and to receive payments for these injections. The Net Billing Law applies to consumers with regulated tariffs whose installed capacity does not exceed 300 kW; or
- Small Means of Distributed Generation projects (PMGD, its initials in Spanish) for self-consumption or for commercialising their energy. The PMGDs are a means of generation whose surplus capacity is lower than or equal to 9MW, and which are connected to the facilities of a distribution company or to the facilities of a company that owns electrical distribution lines that use domestic public goods.

Both kinds of projects have been growing steadily in Chile. As of December 2017, the projects developed under the Law of Net Billing amount to 12MW of installed capacity, according to the information provided by the Superintendence of Electricity and Fuel.

Furthermore, 10 years ago the applications for connecting PMGDs amounted to 20 per year, while currently the same applications number 1,600 per year. As of January 2018, the PMGDs reached 395MW of installed capacity, according to the information provided by the National Electric Coordinator.

### 17 Describe the primary types of distributed generation projects that are common in your jurisdiction.

The majority of the distributed generation projects in Chile are photovoltaic projects, because usually the development costs of these kinds of projects are lower than for other technologies.

### 18 Have any legislative or regulatory efforts been undertaken to promote the development of microgrids? What are the most significant legal obstacles to the development of microgrids?

There is no specific legislation or regulation on microgrids so far in Chile. However, there are companies that own and operate portfolios of behind-the-meter distributed energy resources, such as peak-demand storage systems, rooftop photovoltaic systems, smart meters and data loggers, which allow such companies to manage and optimise their consumers' demand and create more favourable economic conditions for electricity supply.

### 19 What additional legal considerations are relevant for distributed generation?

According to the Net Billing Law, payments, compensation or income received by residential customers by virtue of the injection into the electricity system of their energy surpluses do not constitute income, and the relevant transactions are not subject to VAT. Other than in specific cases, this does not apply to first category taxpayers who are obliged to declare their effective income according to the 'complete accounting' system.

## Energy storage

### 20 What storage technologies are used and what legal framework is generally applicable to them?

The energy storage systems are mainly based on the use of Li-ion batteries. Such storage technology was used for the first time in 2009 by the company AES Gener SA. During the past year, ENGIE Energía Chile (EECL) announced the development of a storage energy system based on Li-ion batteries, which will have a storage capacity of 2MW.

Other storage projects have been and will be developed, such as the Cerro Dominador project owned by EIG Global Energy Partners, which is a solar thermal energy plant with an installed capacity of 110MW. It uses a thermal storage system with a central tower and molten salt receiver technology, allowing it to operate for 17 hours per day.

Additionally, the Planta de Concentración Solar de Potencia Copiapó Solar project, currently being developed by the Solar Reserve company, is expected to begin operating by 2019. The system will be built in the north of Chile and involves the construction of two solar power units with a central tower using molten salt receiver technology, each with an installed capacity of 120MW.

The Espejo de Tarapacá project is also currently being developed and involves a storage system based on hydro-pumped hydroelectricity. The project includes a high-pressure pipeline to transport water, which is connected to a water reserve and a group of pump turbines.

Law No. 20.936 of 2016 regulates energy storage projects generally. In addition, Decree No. 128 of 2016 regulates water-pumping storage projects.

### 21 Are there any significant hurdles to the development of energy storage projects?

There are no significant obstacles for the development of energy storage projects. However, it is important to emphasise that anyone who operates, by means of ownership, a lease agreement or any other title, energy storage systems that are interconnected to the national electricity system and subject to the coordination of the National Electric

### Update and trends

At the present time, the mining industry represents 30 per cent of the country's electricity consumption and is experiencing a positive cycle thanks to the price of copper and better expectations regarding investment plans. Therefore, it is likely that mining companies will increase their search for energy supplies for both the mining process itself, and those associated with desalination plants. It is estimated that this growth in electricity consumption will imply the incorporation of 1,177MW of installed capacity in the next 10 years.

As a result of major investments in NRCE in recent years, in October 2017 NCRE contributions to the national energy matrix surpassed 20 per cent for the first time. Because of this, it is likely that by the year 2020, NCREs will be contributing 20 per cent of the energy matrix continuously for a period that exceeds one year. This was established by the electrical law as a goal for the year 2025.

With respect to the foregoing, in terms of generation, it is expected that new NCRE power plants, mainly solar, will enter into operation. Also, for this year and next, a greater presence of geothermal and wind power plants is foreseeable. Many of these are currently being tested or are under construction.

With regards to achieving a continuous supply through NCRE, energy storage projects are now being developed, based mainly on lithium batteries, molten salts and pumping stations, and are likely to become operational during the next two years. In relation to this matter, one of the biggest challenges is the establishment of a framework that promotes the development of this type of technology, since to date there is only a generic regulation.

The Ministry of Energy presented the government's new Energy Plan, which will guide energy modernisation over the next four years in Chile. Related to NCRE, it refers to reducing the environmental processing times of projects, multiplying by four times the current capacity of renewable small-scale distributed generation, modernising the regulation of electricity distribution and starting the process of decarbonisation of the energy matrix.

The challenge to reach four times the current capacity of renewable small-scale distributed generation (less than 300KW) by 2022 implies that this market will continue to grow considerably. At the end of April 2018, under the scheme of the Net Billing Law, the installed

capacity reached 15.7MW, so the target imposed implies reaching 63MW by 2022.

Several of these measures have already become a reality in order to modernise the energy sector in Chile. An example is the recent public-private meetings between the Ministry of Energy and the Association of Generators to initiate the planning and coordination of the decarbonisation of the energy matrix, in order to establish a gradual schedule of retirement or conversion of coal plants.

### Pending legislative proposals

For this year and next, the preparation of a preliminary project is expected to modify the regulatory framework for electricity distribution currently in force in Chile, which was created in the 1980s and has become obsolete in several aspects in light of the emergence of new technologies. One of these aspects is the appearance of a new customer profile, which not only consumes energy but also injects the surplus produced by self-generation systems.

The new regulatory framework should contemplate standards that allow the incorporation and promotion of new distributed generation technologies to the distribution business model. Such an initiative would also promote the development of distributed generation in houses and buildings, which has been growing steadily in recent years, and allow the continuous improvement in the quality and security of services as well as of the infrastructure, so that clients can have access to better commercial support from concessionary companies of public distribution services and make it possible to keep interruptions of the electricity service to a minimum.

Lastly, it is predicted that there will be progress in the discussion of the Energy Efficiency Bill, which was first presented in the National Congress in November 2017, and has three objectives:

- to promote energy efficiency of large industrial and mining consumers;
- to expand the scope of the application of energy efficiency standards to motorised vehicles, by establishing maximum levels of carbon dioxide (CO<sub>2</sub>) emissions per kilometre; and
- to expand the current labelling system for its application to residential buildings.

Coordinator, must incorporate a company that is domiciled in Chile and whose line of business is the storage of energy. Likewise, the owner, lessee, usufructuary or anyone that operates, under any other title, facilities for supplying services related to the storage of energy interconnected to the national electrical system must incorporate a company domiciled in Chile. Additionally, it is important to note that energy storage systems are subject to the coordination of the National Electric Coordinator.

Likewise, storage facilities shall pay compensation for the unavailability of the supply to end users, which cannot exceed, per event, 5 per cent of the total revenue obtained in Chile the previous year or 20,000 annual tax units (approximately US\$17 million).

### Foreign investment

#### 22 May foreign investors invest in renewable energy projects? Are there restrictions on foreign ownership relevant to renewable energy projects?

Foreign investors may freely invest in renewable energy projects in Chile. It is important to note that according to the latest version of the New Energy Finance Climaspice, Chile is one of the countries that has attracted the most foreign investment from overseas financiers since 2010. The publication also highlights that Chile has a stable government and a healthy economy, making clean energy investment attractive. Additionally, it is important to mention that currently Chile has 25 double taxation treaties.

In order to protect foreign investment, Law No. 20,848 of 2015 states that foreign investors who make investments in Chile as of January 2016 can request a Foreign Investor Certificate from Invest Chile, which allows them to access the benefits established in that law. Additionally, this Law allows foreign investors to request the signing of a tax invariability contract until 2020.

Besides the aforementioned legal protections, in order to promote foreign and national investment in NCRE projects, resolution No. 367 was enacted in the year 2010, which approved the creation of a hedging

instrument or contingent subsidy, through which CORFO grants a complementary coverage of risk for the operation of credit and finance leases destined for the financing of investment projects. Banks with a risk classification of BBB- or higher may grant this coverage to private companies (legal persons or natural persons dedicated to these operations) that manufacture goods and services, for the financing of investment projects in NCRE. The object of this instrument is to partially offset the losses suffered by banks as a consequence of the non-compliance of the obligations from debtors.

However, it is important to note that any owner, lessee, usufructuary or whoever exploits, in any capacity, power plants interconnected to the electricity system and subject to the coordination of the National Electric Coordinator, shall establish its generation companies with domicile in Chile. Likewise, any owner, lessee, usufructuary or any person who exploits, in any capacity, facilities for the provision of complementary services or energy storage systems that are interconnected to the national electric system must incorporate a company domiciled in the country.

#### 23 What restrictions are in place with respect to the import of foreign manufactured equipment?

As a general rule, the average custom duty (ad valorem) is 6 per cent over its CIF value and the tax to be paid is the VAT (19 per cent). However, Chile has signed a number of trade agreements that abolish ad valorem duties for most items traded between these countries. In addition, there are benefits for investors importing capital goods for energy projects over US\$5 million, which will be exempt from VAT, with the prior approval of the Ministry of Finance.

To perform an import, the importer must present an entry statement to the National Customs Service, which is a document that must go through the commercial bank. The commercial forms used by importers are commercial invoices and applicable information on the transaction, such as certificates of origin, bills of lading, freight insurance and packing lists, among others.



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**Projects**


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**24 What government authorisations must investors or owners obtain prior to constructing or directly or indirectly transferring or acquiring a renewable energy project?**

Depending on the NCRE project's characteristics and the environmental impacts that it may generate, it may be necessary to obtain an RCA that certifies the project as environmentally favourable. This resolution will also identify the required permits for the project, depending on its particular characteristics. If the project is transferred after an RCA is obtained, this must be reported to the Environmental Assessment Service.

In addition, the project must obtain other relevant permits such as construction permits for permanent buildings (not the power plant or the transmission line), issued by the Department of Works of the relevant municipality, and the corresponding health and electric permits, issued by the Regional Authority of Health and the SEC, respectively.

If the construction of the project is to be in public areas, it will also be necessary to obtain a concession from the Public Property Ministry, which will enable by way of concessions the use of public lands for these purposes.

In practice, although it is not a requirement for the construction of a project, it is customary to protect the land from third parties by requesting mining concessions where the energy project will be developed, as the mining concessionaire has the ability to impose easements on the area of the concession.

In the case of hydroelectric projects, it is also necessary to obtain water rights for use in the energy generation project and an authorisation from the General Water Direction if it is necessary to build, modify, change or unify a water intake to develop the NCRE project.

**25 What type of offtake arrangements are available and typically used for utility-scale renewables projects?**

The energy offtaker concessionaires' distribution companies are those that contract for provisions to supply energy to regulated customers. As a general rule, such contracts are preceded by a public tender procedure called by the energy distributor and supervised by CNE. In 2016, two public bidding processes awarded a total electricity supply of 12,430GWh per year, which will supply the electricity needs of regulated customers for 20 years, starting in 2021, at record low energy prices. It is important to note that the PPA signed between generators and distributors under this modality lasts approximately 20 years.

To participate in the public bidding processes called by the energy distributors, the bidder is generally required to have a risk rating of at least BB+. In practice that rating is given taking into consideration the sponsors' credit rating.

Clients whose connected power is between 500kW and 5,000kW have the right to choose between being regulated clients or free customers. This right to choose can be exercised once every four years. These clients can freely negotiate electricity prices with energy generators and set supply conditions through PPAs.

**26 How are long-term power purchase agreements procured by the offtakers in your jurisdiction? Are they the subject of feed-in tariffs, the subject of multi-project competitive tenders, or are they typically developed through the submission of unsolicited tenders?**

As mentioned above, the PPAs for supplying energy to regulated customers are usually preceded by public tender procedures.

On the other hand, as a general rule, non-regulated customers call for public or private bidding processes, whether they have a high demand for supply or they add demand, and subsequently enter into PPAs with the successful bidders from such processes.

**27 What government authorisations are required to operate a renewable energy project and sell electricity from renewable projects?**

There are no specific government authorisations required to operate renewable projects and sell electricity. Nevertheless, as mentioned above, according to the General Law on Electrical Services, the owner, lessee, usufructuary or anyone that operates power plants connected to the electrical system under any title and subject to the coordination of the National Electric Coordinator must incorporate a company that is domiciled in Chile and whose line of business is the generation of energy.

The energy broker or energy trader is not regulated in Chile; this is the reason generators are the only entities that can commercialise energy to be sold in the spot market to other generators, or in the contract market (either to distribution companies, other generators or non-regulated customers).

Finally it is important to note that for NCRE projects to be commissioned they must have been previously declared to be under construction by the CNE, and they must have the authorisation of the National Electric Coordinator to energise the corresponding facilities.

After the energisation and interconnection of the facilities, and after a test period to prove that the power plant does not cause distortions in the electrical system, the National Electric Coordinator will approve the commissioning of the respective NCRE project.

**28 Are there legal requirements for the decommissioning of renewable energy projects? Must these requirements be funded by a sinking fund or through other credit enhancements during the operational phase of a renewable energy project?**

Once the useful life of NCRE plants has been surpassed, they are dismantled. The process will be carried out in compliance with the measures and procedures set forth in the project's RCA, required by all power plants above 3MW. The cost of implementing such measures shall be considered as one of the costs of the project.



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**Transaction structures**

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**29 What are the primary structures for financing the construction of renewable energy projects in your jurisdiction?**

Although the structure for financing depends on the size and features of the NCRE project, most developers prefer project financing and long-term agreements. The debt-to-equity ratio depends on the specific project; traditionally it has been 60/40. In order to guard against any construction risk, the financing entity usually requires from the developer a guarantee from the sponsor (ie, a parent guarantee and a fraction in a more liquid instrument) and a regular security package (ie, pledges over the shares of the special purpose vehicle, the assets of the project and the major project documents). In current market conditions, one of the challenges NCRE projects face is to secure a long-term PPA with creditworthy companies that will enable a project finance structure.

**30 What are the primary structures for financing operating renewable energy projects in your jurisdiction?**

To run NCRE projects, the financing structure takes several forms, depending on the commercial needs of the parties and the features of the operating project being financed. As the construction risk is finalised, the financing entity will normally assess the type and age of the plant to evaluate the structure. Common financing structures used in Chile are the term loan and the revolving loan, which can be repaid on demand on an amortisation basis, scheduled, or even by means of a bullet loan, where the entire loan is due at the end of the loan term.

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