MONTHLY NCRE REPORT

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HIGHLIGHTS

During the last month, the energy sector has witnessed a series of milestones that reflect the hard work of both the National Energy Commission and the Ministry of Energy. The following are among the principal achievements:

Government commitment to Solar Energy

The Minister of Energy, Maximo Pacheco, held on September 1st, his first meeting as President of the new Solar Energy Program, which seeks the interaction and collaboration between the major players in the solar industry from public and private sector, academy and civil society.

The program has three main objectives: industrial development, strengthening quality infrastructure and technological development. This latest initiative aims to harness the Chilean territory as a natural laboratory to develop the best technologies, those able to withstand the toughest weather conditions and to obtain the maximum solar potential. With this goal, is being tendered the Photovoltaic Systems for Deserts, of which USD $12 million coming from government funds and USD 5 million provided by private companies.

This tender, closes on March 30th, 2017, and has as main goal to build a portfolio of R+D+I for the development of photovoltaic systems under extreme desert conditions, ensuring the durability and performance of these systems. The main objective is to turn Chile into a more competitive leader in solar technologies by increasing the participation of all of the solar energy companies in this tender, and creating new and revolutionary solutions.

Government launches new Program "Transforma Solar"

Harnessing the existence of exceptional solar resource -as in Atacama desert- and with the need to provide efficient energy solutions to help to improve the competitiveness of the national economy, are the challenges that contemplate the Solar Energy Program "Transforma Solar".

The program was launched on September 12th, by Michelle Bachelet in company of the Minister of Economy, Development and Tourism, Luis Felipe Céspedes; the Minister of Energy, Maximo Pacheco, and the Vice President of CORFO, Eduardo Bitran. All of this in the largest solar facility roofs in the Southern Cone, located in the township of Maipu and built by Cintac, a company member of CAP Group.

"Tansforma Solar" seeks to leverage the uniqueness of the Atacama Desert to develop a local solar industry and export-oriented technological capabilities.

Some of the representatives are: public services members, such as the Ministry of Economy, the Ministry of Energy, the Ministry of National Property, ENAMI, CONICYT and CORFO; German Cooperation Agency (GIZ), SIDEWALK, ACESOL Generators Association, Power Distributors Association, CDEC SIC, AIC (Engineering Consultants), College of Engineering, ASIMET, IEA (Electrical and Electronic Industry), CORPROA (Atacama Development); science and SERC, GSSC, Chile Foundation, Fraunhofer Solar Chile, UAI technology.

First biogas power plant in the region of Valparaiso

In the landfill El Molle -located at Valparaiso- was held on September 23rd, the inauguration of the new non-conventional renewable energy power plant "Molle", with an installed capacity of 4.5 MW (an equivalent capacity enough to supply electricity to 20,000 houses)

The project allow to use the biogas generated during the decomposition of waste into electricity through the use of internal combustion engines.

New forecast system for NCRE

In cooperation with the Ministry of Energy, the National Energy Commission, the Economic Center for Energy Dispatch and Load (CDEC, in Spanish), the Department of Geophysics of the University of Chile, international experts and GIZ agreed to develop on August 29th, a center forecast for the efficient management of renewable energy.

The system will be similar to those contained in the Technical Standard of Safety and Quality of Service features, but some additional aspects will be included in order to improve the quality of information, like increasing the update frequency, the use of satellite images for photovoltaic forecasts or the possibility of grouping areas with various power plants thus, as it had shown, help to reduce inaccuracies.

SUMMARY

August ended with 44 renewable energy projects declared under construction according to Exempt Resolution N° 600/2016, released by the National Energy Commission (CNE), specifying that the operation dates for the projects is foreseen between August 2016 and August 2018.

The installed capacity of renewable energy is now 12.79% (2,655 MW), with SIC concentrating almost 90% of the projects.

The output of NCRE power plants to the grid during last month reached 889 GWh, which represents 14.44% of the total generation. Regarding the legal requirements, that forces conventional generators to certify that a percentage of their generation comes from NCRE sources, the obligation of 267 GWh, was almost doubled by the 586 GWh declared by the generators. The technology analysis indicates that 161 GWh were solar energy injection, 148 GWh were bioenergy , 147 GWh from wind farms and 130 GWh from small hydro.

Finally, during August, the Environmental Evaluation Service (SEA) started evaluating eight new NCRE projects (237 MW, 373 MMUSD investment) and gave an approved RCA to two projects (65 MW, 124 MMUSD investment).

Summary – NCRE Project Status

Technology	Operación [MW] (*)	Construcción [MW]	RCA Aprobada [MW]	En Calificación [MW]
Biomass	417	0	112	87
Biogas	53	0	8	0
Wind	1.293	477	6.500	2.266
Geothermal	0	48	120	0
Small Hydro (**)	448	25	472	89
Solar - PV	1.395	1.555	12.708	5.656
Solar - CSP	0	110	1.085	1.270
Total	3.607	2.214	21.005	9.368

Source: CNE, SEIA, CDEC-SIC / CDEC-SING.

(*) It takes into account projects ready for commercial operation and those connected on trial phase.

(**) Hydroelectric (run-of-river) power plant with installed capacity less than to 20 MW.

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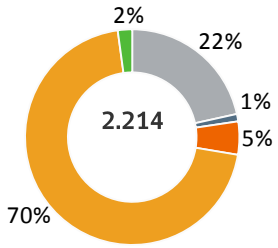
STATUS OF RENEWABLE ENERGY PROJECTS

1 Electricity Generation Projects Under Construction

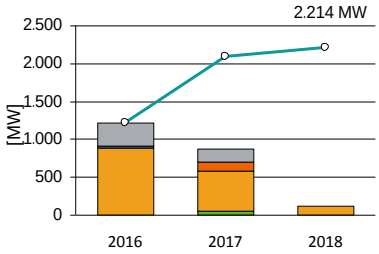
According to Exempt Resolution N° 600/2016, released by the National Energy Commission (CNE), that "Updates and Communicates Construction Projects", there are 44 renewable energy projects under construction by August 5th, 2016, corresponding to a power of 2,214 MW. These projects should be operating between July 2016 and August 2018.

NCRE Projects Under Construction

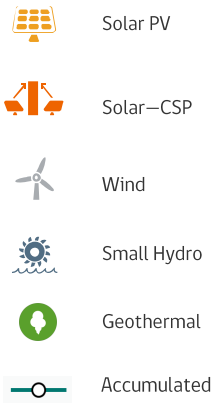


Source: CNE.

Starting Operation Date Forecast



Source: CNE.

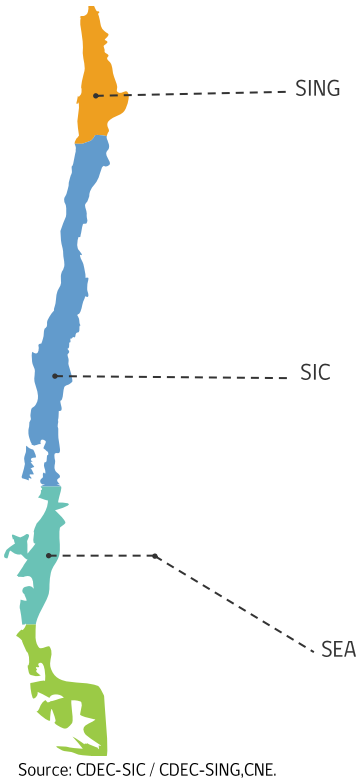


2 Installed Capacity for Electricity Generation

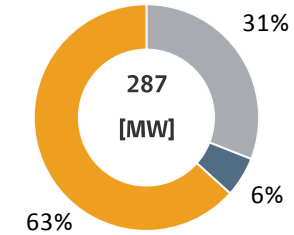
The installed capacity of projects based on renewable energy, recognized as such by Chilean regulations (NCRE), on August 31th, 2016, reached 2,655 MW (*). 88.19% (2,341 MW) is located on SIC (Central Interconnected System), 10.82% (287 MW) is connected to the SING (Northern Interconnected System) and the 1.00% (26 MW) left, belongs to the Electrical System of Aysén.

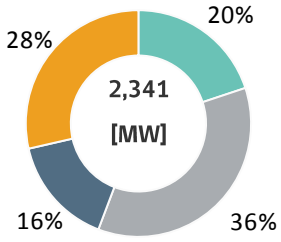
The NCRE installed capacity represents an 12.79% of the total electrical capacity of the Chilean distribution systems.

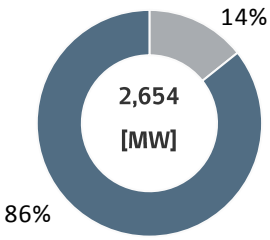
NCRE Installed Capacity

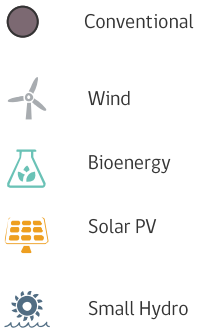


Source: CDEC-SIC / CDEC-SING,CNE.

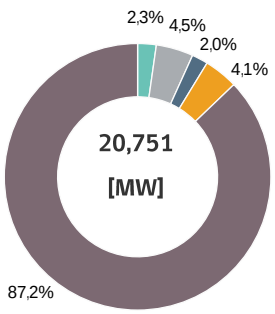








Conventional Technologies and NCRE into the Chilean Grids



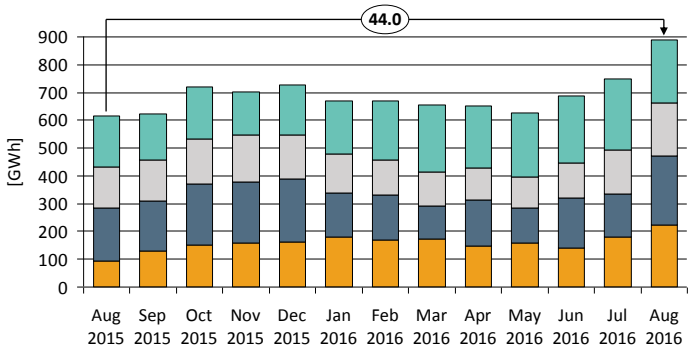
(*) In addition, there are 31 NCRE power plants on trial with a total of 788 MW operating on SIC, and SING has 3 power plants on trial for other additional 164 MW.

3 Electricity Generation

Electricity generation for the major electrical distribution systems reached 6,154 GWh during August 2016. 889 GWh of them come from ERNC sources.

Separated by technology we get that 28.12% (250 GWh) was generated by wind farms, followed by a 25.58% (227 GWh) by bioenergy, in third place was solar, with 25.11% (223 GWh), then small hydro with 21.20% (188 GWh).

NRCE Electricity Generation Evolution



Electricity Generation Variation

Generation [GWh]		Monthly	Annual
NCRE	889	18.9%	44.0%
Conventional	5,266	-4.1%	-3.4%
Total	6,154	-1.3%	1.4%

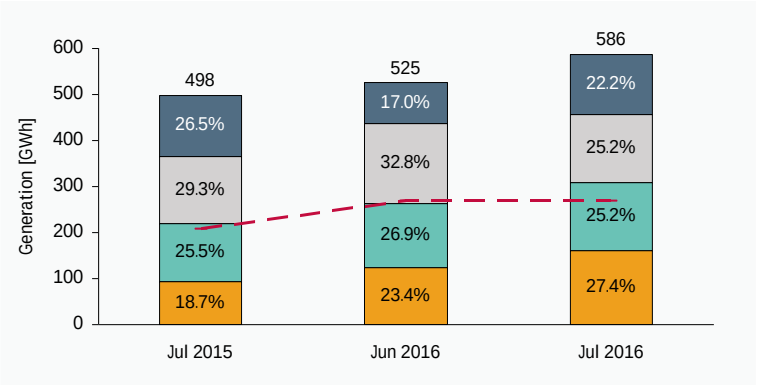
(*) Electricity Generation includes all the power plants considered into the Law 20.257

Source: CDEC-SIC / CDEC-SING, CNE.

4 Compliance with Laws 20,257 and 20,698

According to the ERNC balance released by the Independent System Operators, corresponding to July 2016, the obligation defined by Laws 20,257 and 20,698 was of 267.49 GWh of electricity generation from a NCRE source. During that period the recognized NCRE energy put into the system reached 585.99 GWh (219.06% of the requirement), with a shared of 160.70 GWh from solar, 147.64 GWh from bioenergy, 147.42 GWh from wind farms and 130.22 GWh from small hydro.

Technology NCRE Laws Compliance



Source: CDEC-SIC / CDEC-SING, CNE.

PROJECTS UNDER ENVIRONMENTAL EVALUATION

1. New Projects on Environmental Evaluation

During August, the Environmental Evaluation Service (SEA) started evaluating eight new NCRE projects totaling 237 MW and 373 MMUSD of investment. Five of the projects are solar PV technology, two are a wind farm, and the last one is a biomass plant.

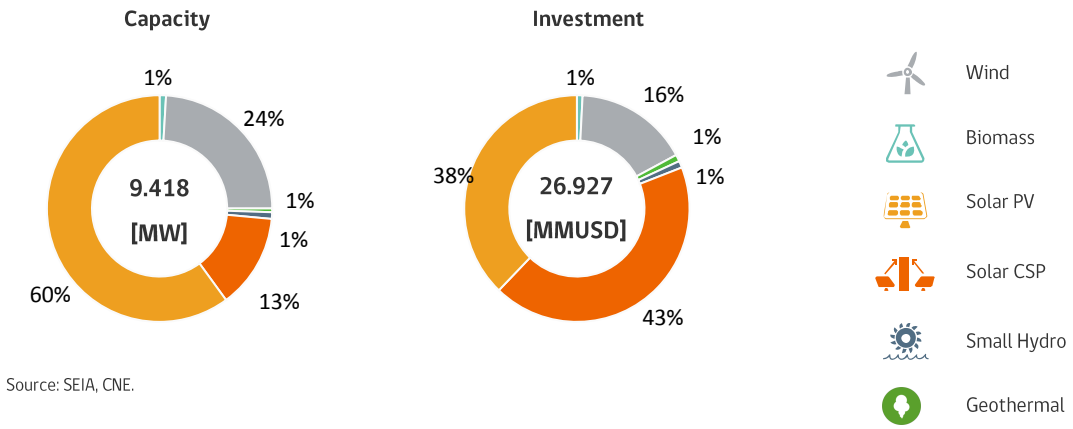
Technology	Region	Company	Project Name	Capacity [MW]	Investment [MMUSD]	Date	Link
Wind	VIII	AM Eólica Puelche Sur SpA	Parque Eólico La Esperanza II	17,5	35,0	24-aug-2016	Link
Solar - PV	III	Avenir La Silla SpA	Proyecto Fotovoltaico "Aurora del Huasco"	49,6	83,0	24-aug-2016	Link
Solar - PV	IV	Ibereolica Cabo Leones III	Planta Fotovoltaica Alturas de Ovalle	6,0	16,0	24-aug-2016	Link
Biomass	VIII	GR CHAQUIHUE SpA	Planta Bioenergía Ñuble	20,0	44,1	23-aug-2016	Link
Solar - PV	RM	Amunche Solar SpA.	Parque solar fotovoltaico El Laurel	9,0	12,8	22-aug-2016	Link
Solar - PV	RM	Exploraciones Lonquimay S.A.	Parque Solar Fotovoltaico Ovejería	8,8	12,0	22-aug-2016	Link
Wind	XII	Hidroeléctrica Las Flores S.A.	Nuevo Parque Eólico Cabo Negro	10,0	20,0	18-aug-2016	Link
Solar - PV	III	Maria Elena Solar S.A	Planta Solar Fotovoltaica Libertad I y II	116	150	11-aug-2016	Link

Source: SEIA, CNE.

2. Projects undergoing Environmental Evaluation

On August 2016, there were 103 NCRE projects undergoing qualification by the SEIA. From this total, 3 are biomass power plants, 25 wind farms, 1 is a geothermal project, 8 small hydro, 4 solar CSP, and 61 solar PV. All the projects added 9,418 MW and 26,927 MMUSD of investment.

NCRE Projects Distribution



Source: SEIA, CNE.

3. Project with Environmental Qualification Resolution

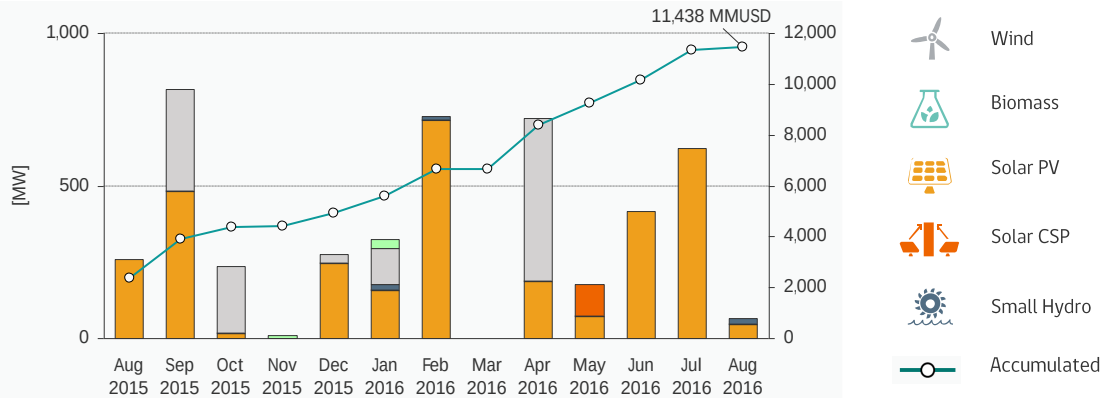
During August, the Environmental Evaluation Service (SEA), gave three Environmental Qualification Resolutions (RCA) to NCRE projects, totalling 65 MW and and investment of 124 MMUSD. One of them is solar photovoltaic plants, and the other one is a small hydro power plant.

Technology	Region	Company	Project Name	Capacity [MW]	Investment [MMUSD]	Date	Link
Small Hydro	XIV	Empresa Eléctrica Florín S.P.A.	EIA Pequeñas Centrales Hidroeléctricas de Pasada Florín II y Florín III	17,6	54	03-ago-2016	Link
Solar - PV	V	Duke Energy International Sol Del Mar SpA	Parque Solar Don Sebastián	47	71	26-ago-2016	Link

Source: SEIA, CNE.

The following graph, presents the 12 months evolution of approved projects by the SEIA. The total investment during that period was 11,438 MMUSD, and the total power was 4,653 MW.

Evolution of NCRE Projects with approved RCA



Source: SEIA, CNE.

ENERGY GEOTHERMAL LICENSES

The Ministry of Energy is responsible for the administration of Law No. 19,657 appliance, which applies to Geothermal Energy Concessions and regulate the process and evaluations for geothermal energy concessions, requests for extension of exploration concessions and enforcement of the law and its implementing regulations.

A geothermal concession is an administrative act -granted by the State- where is authorized a natural or legal person to carry out exploration or exploitation of geothermal energy in a given area.

A geothermal exploration concession confers the right to conduct studies, measurements and other investigations to determine the existence of sources of geothermal resources, its physical and chemical characteristics, their geographical spread and their skills and conditions for its use, with a period of two years, renewable for two additional years.

A geothermal exploitation concession confers the right to use and exploit geothermal energy that exists within its boundaries, including: conducting drilling activities, construction, commissioning and operation of a geothermal power plant, with an indefinite term and covered by compliance with the obligations for the concessionaire in the concession decree and payment of an annual fee.

Below are the concessions Exploration and Exploitation of Geothermal Energy Ongoing through August 2016:

1. Existing Exploration Concessions

Concession	Owner	Region(s)	Province(s)	Commune(s)	Area [ha]
CARCOTE	SERVILAND MINERGY S.A	ANTOFAGASTA	EL LOA	CALAMA OLLAGÜE	99,000
CARITAYA	SERVILAND MINERGY S.A	ARICA Y PARINACOTA TARAPACÁ	ARICA DE TAMARUGAL	CAMARONES HUARA CAMIÑA COLCHANE	98,600
LASCAR	TRANSMARK CHILE SpA	ANTOFAGASTA	EL LOA	SAN PEDRO DE ATACAMA	24,000
LATARANI 1	ENERGÍA ANDINA S.A.	TARAPACÁ	DEL TAMARUGAL	COLCHANE HUARA	1,000
LATARANI 2	ENERGÍA ANDINA S.A.	TARAPACÁ	DEL TAMARUGAL	COLCHANE	800
LINZOR	TRANSMARK CHILE SpA	ANTOFAGASTA	EL LOA	CALAMA	33,000
PUCHULDIZA 3	MRP CHILE EXPLORACIÓN LIMITADA	TARAPACÁ	DEL TAMARUGAL	COLCHANE	3,000
TIMALCHACA	SERVILAND MINERGY S.A	ARICA Y PARINACOTA	ARICA PARINACOTA	ARICA CAMARONES PUTRE	68,000

Source: Ministry of Energy

2. Existing Exploitation Concessions

Concession	Owner	Region(s)	Province(s)	Commune(s)	Area [ha]
APACHETA	GEOTERMICA DEL NORTE S.A	ANTOFAGASTA	EL LOA	OLLAGÜE	8,100
CHILLAN	EMPRESA NACIONAL DE GEOTERMIA S.A	BIOBÍO	CURICÓ TALCA	COIHUECO PINTO	8,400
EL TATIO	GEOTERMICA DEL NORTE S.A	ANTOFAGASTA	EL LOA	CALAMA	4,160
LA TORTA	GEOTERMICA DEL NORTE S.A	ANTOFAGASTA	EL LOA	CALAMA SAN PEDRO DE ATACAMA	5,400
LAGUNA DEL MAULE	COMPAÑÍA DE ENERGÍA LIMITADA ENERCO	DEL MAULE	TALCA LINARES	SAN CLEMENTE COLBUN	4,000
OLCA	COMPAÑÍA MINERA DOÑA INES DE COLLAHUASI SCM	TARAPACÁ ANTOFAGASTA	DEL TAMARUGAL EL LOA	PICA OLLAGÜE	2,500
PELLADO	COMPAÑÍA DE ENERGÍA SPA	MAULE	SAN CLEMENTE COLBUN TALCA LINARES	TALCA LINARES SAN CLEMENTE COLBÚN	16,000
ROLLIZOS	SAMUEL SANTA CRUZ	DE LOS LAGOS	PUERTO VARAS LLANQUIHUE	LLANQUIHUE PUERTO VARAS	260
TINGUIRIRICA	ENERGÍA ANDINA S.A	DEL LIBERTADOR GENERAL BERNARDO O'HIGGINS	COLCHAGUA	SAN FERNANDO	6,175

Source: Ministry of Energy

DISTRIBUTED ENERGY GENERATION LAW

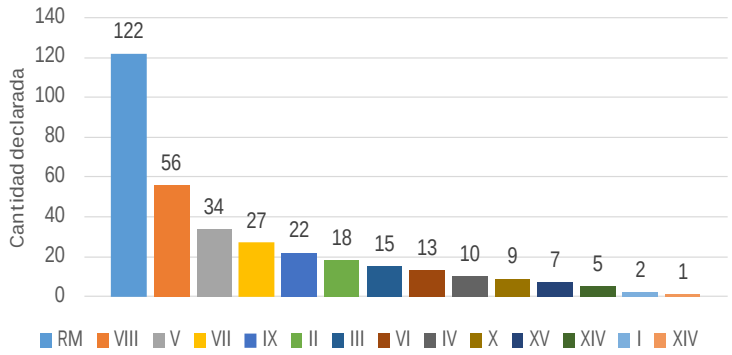
Energy generation by the citizen is established by Law No. 20,571, is a system that allows the self-generation of energy based on Non-Conventional Renewable Energy (NCRE) and efficient cogeneration. This law, also known as Net Billing, Net metering or distributed energy generation, delivers the permission to energy customers to become energy generators by selling their generation directly to the electricity distributor at a regulated price, which is published on the website of each distributor.

All power generation system which would like to generate energy under this regulation, must declared to the Superintendency of Electricity and Fuels (SEC in Spanish) its installations. This declaration must be made by an authorized installer, and must also contain the technical details of the installation and use of products. Subsequently, the SEC will oversees the installation and only if it fulfills the technical requirements will authorized its operation. Hereafter the owner must notify the network connection to the electricity distribution company.

Down below the list of facilities declared to the SEC by the electric procedure No. 4 from July, 2016.

1. Facilities declared

Number of facilities declared by region



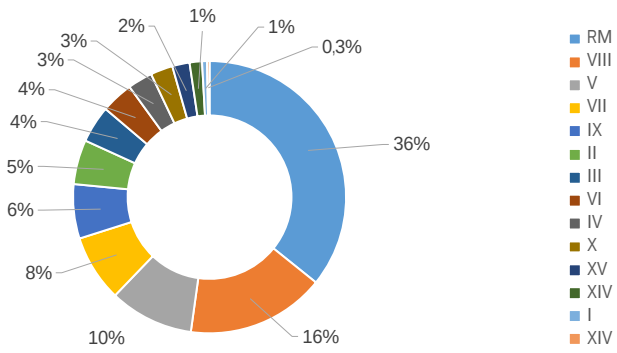
Source: SEC

Detail of facilities declared by region

Región	Cantidad	Porcentaje
RM	122	35,8%
VIII	56	16,4%
V	34	10,0%
VII	27	7,9%
IX	22	6,5%
II	18	5,3%
III	15	4,4%
VI	13	3,8%
IV	10	2,9%
X	9	2,6%
XV	7	2,1%
XIV	5	1,5%
I	2	0,6%
XIV	1	0,3%
Total	341	100,0%

Source: SEC

Percentange of facilities declared by region



Source: SEC

National Energy Commission of Chile

Avenida Libertador Bernardo O'Higgins , 1449
Edificio Santiago DownTown, Torre 4, Piso 13

Tel. (2) 2797 2600
Fax. (2) 2797 2627

www.cne.cl

Santiago - Chile