

EMBASSY OF INDIA
SANTIAGO
CHILE
ELECTRICAL EQUIPMENT MARKET SURVEY

Commissioned from Ms. Carmen Gloria Fuentealba
on behalf of the



सत्यमेव जयते

Economic Diplomacy Division
Ministry of External Affairs

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This market survey aims to provide relevant information on the electrical equipment market in Chile so that Indian exporters may get a deep understanding of it and may also develop and execute a successful market entry into Chile.

The range of electrical equipment is quite vast. As requested by the client, this survey will cover the following types of products:

- Electrical generators and generating sets
- Electric transformers
- Welding machines
- Boards, panels and consoles for electric control

The survey includes quantitative information such as market size and import and export statistics, among other data. It also contains qualitative information about companies, products, entry and registration product requirements, etc.

1. Market Overview

1.1 Chilean electric market

Chilean electric market is composed by 3 different activities: generation, transmission and distribution. All of them are conducted by private companies.

In 2017, total electricity generation capacity reached 22.580 MW. From them, 30% corresponded to hydraulic power, 27% to natural gas and 16% to coal.

Total gross electricity generation reached 74.647 GWh. in 2017. From them, 28% corresponded to NCRE (mainly solar and small hydro).

In 2017, Chilean transmission system had approximately 33.200 km. of length. Distribution system is composed by about 6.5 million of clients, which demand approximately 37.000 GWh.¹

The sector is regulated by the General Electric Service Law. The Energy Ministry is responsible for the plans, policies and standards of the energy sector. In addition, it grants concessions for hydroelectric power plants, transmission lines, substations and power distribution areas.

¹ Distribution statistics consider distribution companies that are members of Empresas Electricas AG, the association gathering main electric companies.

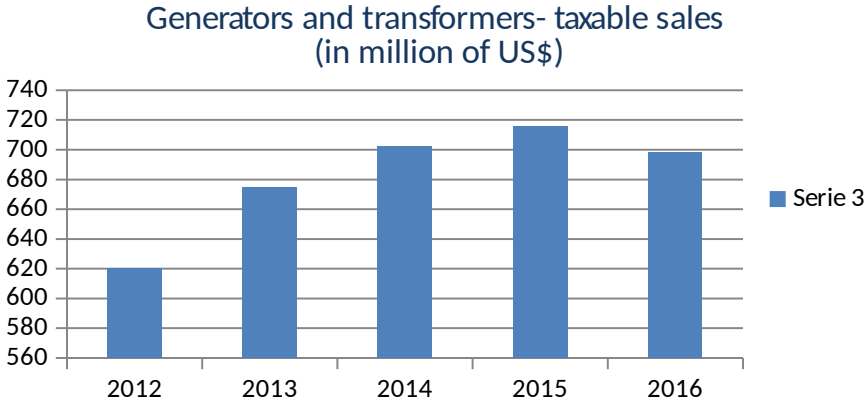
There are two major interconnected systems in Chile, the Central Interconnected System (SIC) and the Norte Grande Interconnected System (SING), in addition of two minor electrical systems, Aysén and Magallanes.

1.2 Electrical equipment market description

In Chile, most of electrical equipment is imported. In the case of the product considered in this survey, Chile does not produce welding machines and electrical generators, but some local companies manufacture electric transformers and electric power and control boards.

In the case of electric transformers, there are some local small and big companies (some of them of vast experience and well reputation) that manufacture and even export low-to-medium power transformers, using mainly imported components. Some of these companies also import electric transformers different from the ones they manufacture, in order to better fulfil their clients' needs, offering a wider range of products. There are also several local companies manufacturing electric power and control boards.

According to the Internal Revenue Agency (Servicio de Impuestos Internos SII), in 2016 there were 946 companies² in Chile dedicated to produce and repair electrical generators and transformers. In 2016, their total taxable sales reached 17.221.280 U.F.³ (equivalent to approximately US\$ 698 million). See chart below



Source: SII

² SII statistics show the number of registered companies under each economic sector. Nevertheless, it is possible that a number of them exist as a legal entity, but are not actually active and operating.

³ The Unidad de Fomento (U.F.) is a unit of account commonly used in Chile, fixed on a daily basis and adjusted for inflation.

The estimated total market of electrical generators is about US\$ 87.5 million per year⁴. Most of the units sold are by far diesel powered, but in the Chilean market it is also possible to find generators driven by gasoline and natural, liquefied or bio gas.

According to the Electricity and Fuel Superintendence (SEC), about 25.000 units were certified in 2016 previous to their commercialization.

Electrical generators are widely used in Chile by companies - as well as by office and high-income residential buildings - as a backup in case of energy outage. Some companies also use them as an alternative source of energy during peak hours⁵, in which electricity distribution companies charge a higher price for energy. In addition, they are used as a permanent source of energy by companies (i.e. mining, fish farms, etc.) having operations in remote zones (where electricity network is not available). In fact, mining companies are the main generating set users.

In the case of electric transformers, there is a wide range of sizes and types for different usage. The most common in Chile are power and distribution transformers. Power transformers are mainly used in power generation stations and transmission substation. Distribution transformers (of up to 500 kVA) are mainly used in residential, commercial and rural places.

Most electrical transformers used in Chile are dielectric liquid filled, are considered safer while dealing high voltage applications. Nevertheless and for some usages, in the last years users prefer encapsulated dry-type transformers, as they require less maintenance, are more ecofriendly and have fewer fire risks.

Related to welding machines, the estimated total market is about US\$ 39 million per year⁶. The building and metal mechanic are the most important for welding applications. As welding is a key factor in some processes, companies often outsource it to external highly specialized welding companies. Sometimes, they also outsource external inspection companies to certify that welding procedures and welders fulfil required standards (i.e. ASME IX, AWS and API). There are also several Chilean technical standards related to welding processes; some of them are compulsory and others are referential or recommended.

The market of boards, panels and consoles for electric power and control is closely linked to automation and electric installations. Statistics of the Internal Revenue Agency (Servicio

4 Calculated as total imports in 2017 (in CIF value)

5 In Chile, electrical peak hours are from 18:00 to 23:00, from May to September.

6 Calculated as total imports in 2017 (in CIF value)

de Impuestos Internos SII) show that in 2016 there were 163 companies dedicated to produce electric distribution and control equipment, with total taxable sales of 12.599.373 U.F. (equivalent to about US\$ 511 million).

Electric and control boards are mainly locally produced at demand, according to clients' needs, using principally imported components. These latest are provided mainly by multinational companies, such as ABB, Rockwell, Schneider, Siemens, etc. (directly or through their local distributors).

1.3 Market prospects

Market prospects will be closely subject to the forecasts of the economic sectors in which electrical equipment is more used.

According to its August 2018 report, the Corporación de Desarrollo Tecnológico de Bienes de Capital, CBC, (Corporation of Technological Development on Capital Goods) estimated that total investment to be materialized within the period 2018-2022 will reach US\$ 42.213 million. Around 90% of the investment will be in the energy, mining, building and public works sectors.

Main users of generation sets and electrical transformers are the mining, building and energy sectors. These three sectors showed a slowdown in the last 2-3 years, with a decrease in investment and less new project development. Nevertheless, from 2018 they have been showing clear signs of recovering.

In 2018, the mining sector is showing a higher dynamism in terms of new mining projects. The Chilean Copper Commission (COCHILCO) forecasted a 31.8% increase in mining investment to be materialized within the 2017-2026 period, compared to 2016-2025.

The building sector, the Chilean Chamber of Construction (CCHC) reported a negative growth of -0.2% and -1.8% in 2016 and 2017, respectively. Nevertheless, the same institution forecasts a +2.4% growth for 2018, boosted mainly by public infrastructure (+2.7%) and residential sector (+1.8%).

The energy generation sector (specifically NCRE) is also expected to grow, totalizing US\$ 11.000 million in projects in development until 2021.

Besides, recent legal changes related to distributed generation will increase to 300 kW from 100 kW the maximum installed capacity clients could have to inject energy to the network and be compensated by electricity distribution companies. This will be an incentive for companies and even households or communities to develop new small-scale

energy generating projects, increasing the demand for equipment, services and supplies associated to them.

As said before, welding machines are widely used in the metal mechanic sector. According to the Association of Metal Mechanic industries (ASIMET), the sector grew + 3.1% and +2.3% in 2016 and 2017. Even if current figures are -28.3% compared to 10 years ago, market actors agree that the sector is growing, hand by hand with mining and building sector reactivation.

As mentioned before, the market of components for electric control (boards, panels and consoles) is closely linked to automation and electric installations.

Chilean companies are more and more interested in automation in their industrial processes in order to increase efficiency, reduce risks and save labor costs. A survey conducted by Mc Kinsey Global in 2016 states that in Chile about 3.2 million jobs would be potentially replaceable by automated systems in the next 20 to 40 years, representing estimated savings of US\$9 and US\$ 6 billion in the retail and industrial sectors, respectively.

It is expected that industrial automation market will significantly increase in Chile. Chilean companies have great interest in increase production efficiency and reduce costs, to better compete in local and international markets. Moreover, several companies could be interested in reducing their payrolls, due to the restrictions and higher costs introduced by latest labor reforms.

By the other side, building automation (domotics and inmotics) is becoming more and more demanded for office buildings and households, especially high-level ones, as a way to improve energy efficiency, security and comfort. It is expected that building automation market will increase and permeate also to mid-level level buildings, inasmuch as associated technology costs decrease.

2. Imports and exports

Import and export statistics contained in this section correspond to the following products, with the respective Harmonized System (HS) code under which they are classified in Chile⁷ :

Chapter/code	Description
85.02	Generating sets (diesel or semi-diesel): 85.02.11 of an output not exceeding 75 kVA 85.02.12 of an output exceeding 75 kVA but not exceeding 375 kVA 85.02.13 of an output exceeding 375 kVA
85.04	Electric transformers - Dielectric liquid filled Transformers 85.04.21 of an output not exceeding 650 kVA 85.04.22 of an output exceeding 650 kVA but not exceeding 10.000 kVA 85.04.23 of an output exceeding 10.000 kVA -Other types of transformers 85.04.31 of an output not exceeding 1 kVA 85.04.32 of an output exceeding 1 kVA but not exceeding 16 kVA 85.04.33 of an output exceeding 16 kVA but not exceeding 500 kVA 85.04.34 an output exceeding 500 kVA
85.15	Welding machines 85.15.11 Soldering irons and guns, electric 85.15.19 Brazing or soldering machines (excl. soldering irons and guns) 85.15.21 Fully or partly automatic machines for resistance welding of metals 85.15.29 Machines for resistance welding of metals, neither fully nor partly automatic 85.15.31 Fully or partly automatic machines for arc welding of metals, incl. plasma arc welding 85.15.39 Machines for arc welding of metals, incl. plasma arc welding, neither fully nor partly automatic 85.15.80 Others (like laser or other light or photon beam, ultrasonic, electron beam, magnetic pulse) 85.15.90 Parts

⁷ The HS codes under each type of equipment and supply is classified correspond to the Custom tariff classification defined by the Chilean Customs and in force from January 1, 2017. In some cases, they may not coincide with the codes used in India.

85.37	Components for electric control (boards, panels and consoles) 85.37.10.00 for a voltage not exceeding 1.000 V 85.37.20.10 for a voltage exceeding 1.000 V but not exceeding 72.5 kV
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2.1 Imports

2.1.1 Imports by type of product

2.1.1.1 Generating sets

Imports of Generating sets have been decreasing in the last 5 years, especially in the case of big units of an output exceeding 375 kVA. These latest are mainly used by the mining, building and industrial sectors, which have been impacted from 2015 by the economy slowdown. For instance, in the mining and building sectors several projects are currently in stand-by, waiting for more favourable conditions. See chart below

Total Imports of generating sets (in US\$ CIF value)

	2013	2014	2015	2016	2017
85.02.11	23.092.262	29.236.330	24.810.669	19.100.439	24.441.352
85.02.12	30.439.933	28.941.448	27.907.910	23.746.285	29.434.297
85.02.13	56.270.253	45.916.995	46.485.191	40.801.960	33.422.929
TOTAL	109.802.498	97.194.772	99.203.771	83.648.684	87.298.578

Source: Chilean Customs Statistics

Despite the above, imports of low to medium output generating sets have remain relatively stable, showing the interest of small to medium companies and households to implement electricity back-up systems, in order to face energy outages.

2.1.1.2 Electric transformers

Imports of electrical transformers have been decreasing in the last 5 years, mainly due to the increase of the production capacity of local manufacturers, which have faced continuously demand growth.

In addition, main imports correspond to dielectric liquid filled transformers of an output exceeding 10.000 kVA (46% in 2017). These units have a very high unitary cost (over US\$ 1 million in some cases) and are generally imported directly by final users, such as mining and energy companies. They can, therefore, significantly impact the total import value of a given year, in case they are imported for specific projects. See chart below.

Total Imports of electrical transformers (in US\$ CIF Value)

	2013	2014	2015	2016	2017
Dielectric transformers					
85.04.21	13.915.472	11.543.308	17.596.391	9.392.097	13.342.119
85.04.22	19.771.363	11.752.805	14.240.085	10.015.930	7.629.373
85.04.23	53.031.044	39.587.779	32.481.070	29.924.309	32.986.780
Other transformers					
85.04.31	7.344.960	5.060.803	5.412.756	6.303.489	5.602.229
85.04.32	3.076.139	2.052.451	1.247.390	970.597	833.373
85.04.33	4.386.292	3.438.051	4.509.108	5.808.810	4.481.805
85.04.34	10.900.103	8.131.578	7.794.575	5.290.964	6.708.893
TOTAL	112.425.372	81.566.776	83.281.375	70.490.100	71.584.572

Source: Chilean Customs Statistics

2.1.1.3 Welding machines

Welding machine imports have been decreasing in the last 5 years (but showed an upturn in 2017), reflecting the impact of economy slowdown from 2015 in main welding machine end users (building and metal processing companies). From 2015 on, the building sector has come to a standstill, even registering negative growth.

Total Imports of welding machines (in US\$ CIF value)

	2013	2014	2015	2016	2017
85.15.11	2.197.083	1.611.358	1.593.734	1.296.590	1.533.246
85.15.19	989.964	695.900	251.379	229.509	405.897
85.15.21	3.317.238	626.426	1.349.976	1.843.814	1.618.517
85.15.29	2.118.004	672.712	944.697	361.114	648.078
85.15.31	9.762.400	6.425.147	3.997.798	2.007.930	3.318.376
85.15.39	19.514.501	17.451.457	13.922.342	12.661.994	16.195.103
85.15.80	11.516.873	12.287.630	7.928.364	7.388.469	7.326.151
85.15.90	12.534.637	11.157.656	9.288.296	7.887.278	8.188.855
TOTAL	61.950.700	51.428.284	39.276.587	33.676.597	39.234.223

Source: Chilean Customs Statistics

Main imports correspond to machines for arc welding of metals, neither fully nor partly automatic, which represented 41.3% of total.

2.1.1.4 Boards, panels and consoles for electric control

Imports of components for electric control have remained relatively stable in the last years, with moderate variations from year to year.

Total Imports of Boards, panels and consoles (in US\$ CIF value)

	2013	2014	2015	2016	2017
85.37.10.00	87.855.902	76.424.289	81.753.895	77.493.064	89.929.637
85.37.20.10	129.136.256	37.656.702	24.985.411	28.075.841	29.011.152
TOTAL	216.992.158	114.080.991	106.739.306	105.568.905	118.940.789

Source: Chilean Customs Statistics

Most imports (75.6% in 2017) corresponded to components for a voltage not exceeding 1.000 V

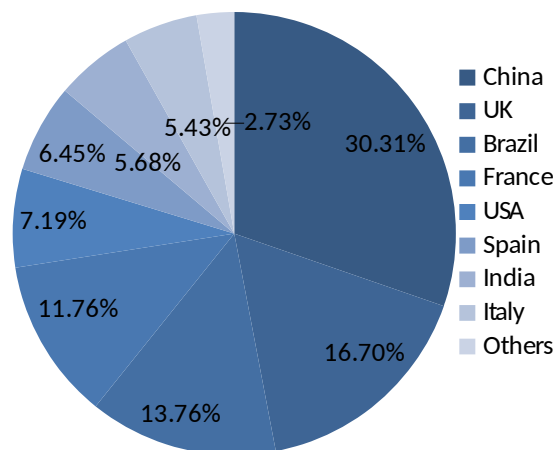
It is important to mention that Custom statistics of the above HS codes actually gather a wide range of products, including complete electric and control boards and electrical rooms, but also components used to manufacture them, such as panels, screens, cabinets, etc.

2.1.2 Imports by country

2.1.2.1 Generating sets

The following chart shows main countries of origin of generating set imports in 2017.

Imports by country of origin - % CIF Value 2017



Source: Chilean Customs Statistics

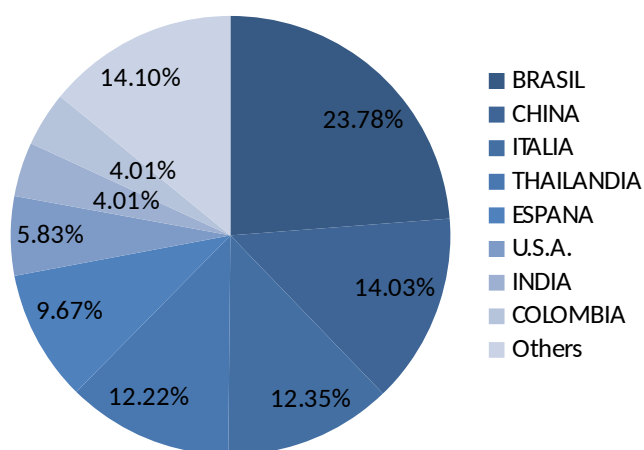
Most generating set imports come from China (30.3%), followed by United Kingdom (16.7%) and Brazil (13.8%).

India ranks in 7th position with around US\$ 5 million in 2017, representing 5.7% of total generating set imports. Imports correspond to 2 Chilean companies: Distribuidora Cummins (subsidiary of its homonymous from U.S.A.) and Dercommaq (representative of the English company JCB). Both, Cummins and JCB produce in India part of their equipment.

2.1.2.2 Electric transformers

The following chart shows main countries of origin of electric transformer imports in 2017.

Imports by country of origin - % CIF Value 2017



Source: Chilean Customs Statistics

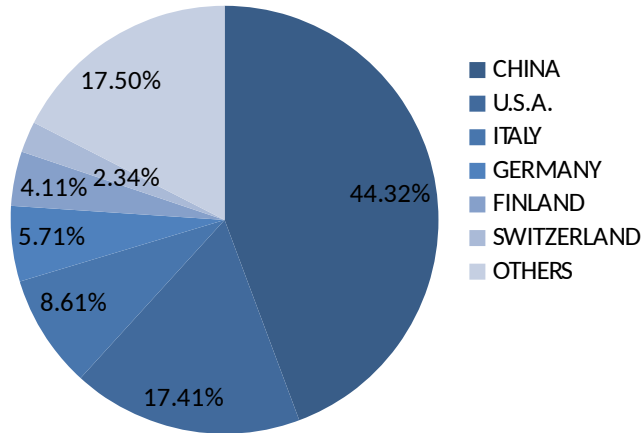
Most imports come from Brazil (23.8%), followed by China (14.0%) and Italy (12.4%).

India ranks in 7th position with around US\$ 2.9 million in 2017, representing 4% of total electric transformer imports. Most imports (%) corresponded to Enersis- Enel (subsidiary of the Spanish company Endesa), which imported equipment from India under the brand Toshiba.

2.1.2.3 Welding machines

The following chart shows main countries of origin of welding machine imports in 2017. Most imports come from China (44.3%), followed by U.S.A. (17.4%) and Italy (8.6%).

Imports by country of origin - % CIF Value 2017



Source: Chilean Customs Statistics

Imports from India in 2017 were not significant, reaching US\$ 63 M and representing 0.2% of total welding machine imports.

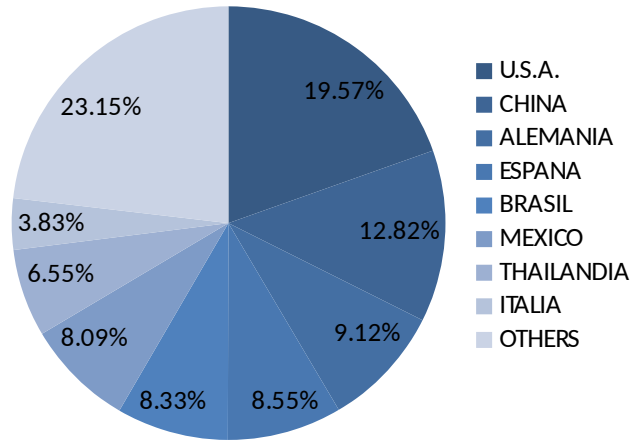
2.1.2.4 Boards, panels and consoles for electric control

Most imports of boards, panels and consoles for electric control come from U.S.A. (19.6%), followed by China (12.8%) and Germany (9.1%).

Imports from India in 2017 were not significant, reaching US\$ 410 M and representing 0.34% of total imports.

The following chart shows main countries of origin of boards, panels and consoles for electric control imports in 2017.

Imports by country of origin - % CIF Value 2017



Source: Chilean Customs Statistics

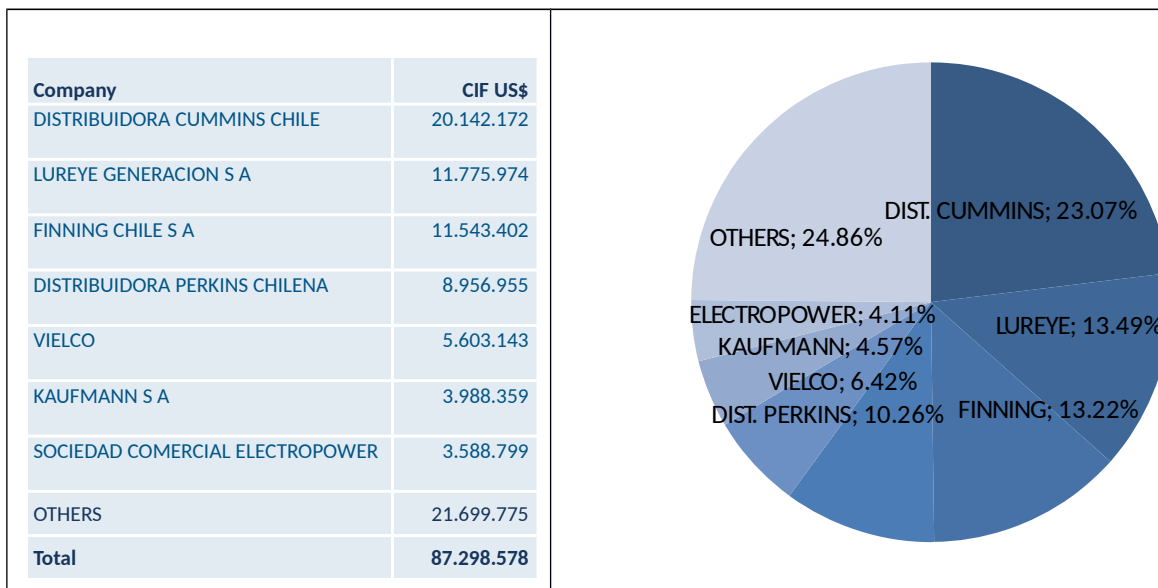
2.1.3 Imports by company

The following section shows main companies that imported electrical equipment in 2017.

2.1.3.1 Generating sets

The following chart shows main companies importing generating sets in 2017.

Imports by company - CIF value 2017

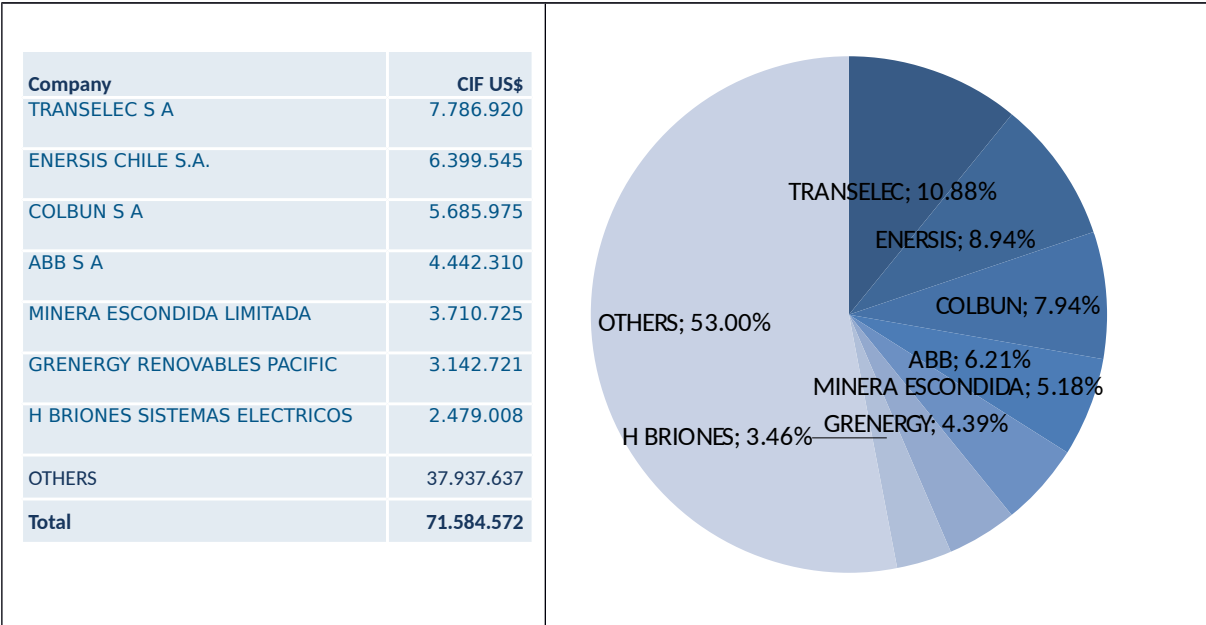


Main importers correspond to subsidiaries of multinational companies and to local representatives/importers of international brands. Main ones were Distribuidora Cummins (subsidiary of its homonymous company of U.S.A.), Lureye (representative of Kohler and other brands) and Finning (subsidiary of its homonymous Canadian company). These three companies represented about a half of total generating set imports in 2017.

2.1.3.2 Electric transformers

The following chart shows main companies importing electric transformers in 2017.

Imports by company - CIF value 2017



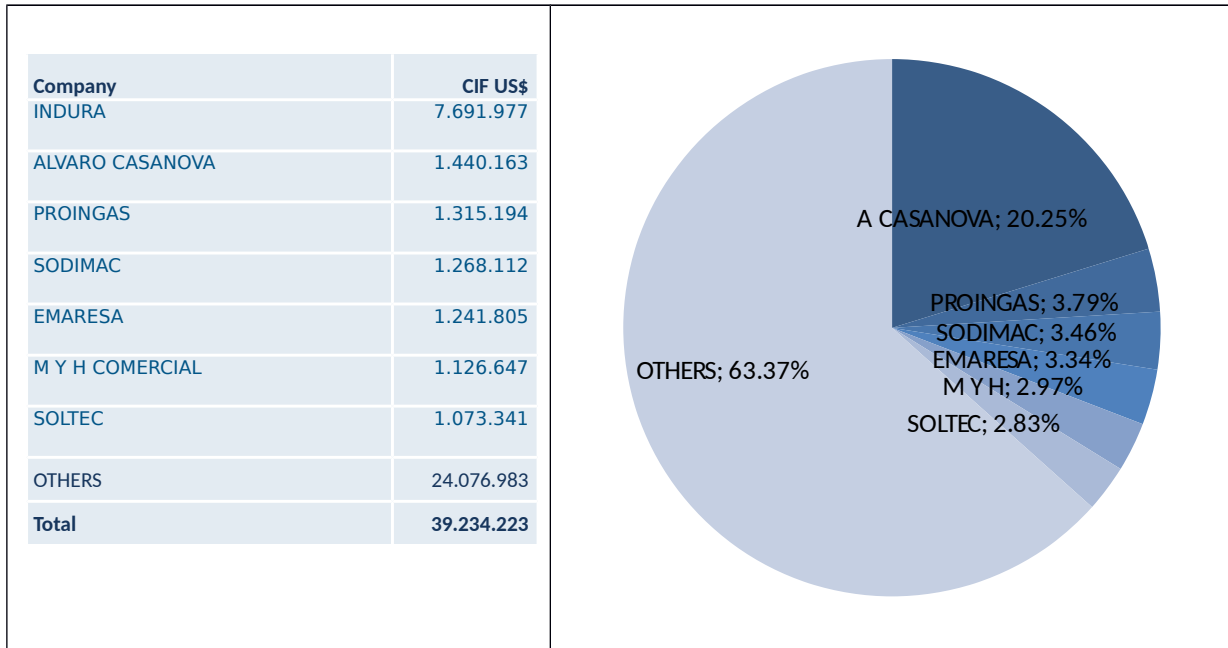
Source: Chilean Customs Statistics

Main importers were final clients (mining and energy companies) importing transformers for their own projects, subsidiaries of multinational companies and representatives/importers of international brands. Main ones were Transelec (electricity transmission company belonging to Canadian and Chinese capitals), Enersis (subsidiary of the Spanish company Endesa) and Colbun (local energy company).

2.1.3.3 Welding machines

The following chart shows main companies importing welding machines in 2017.

Imports by company - CIF value 2017



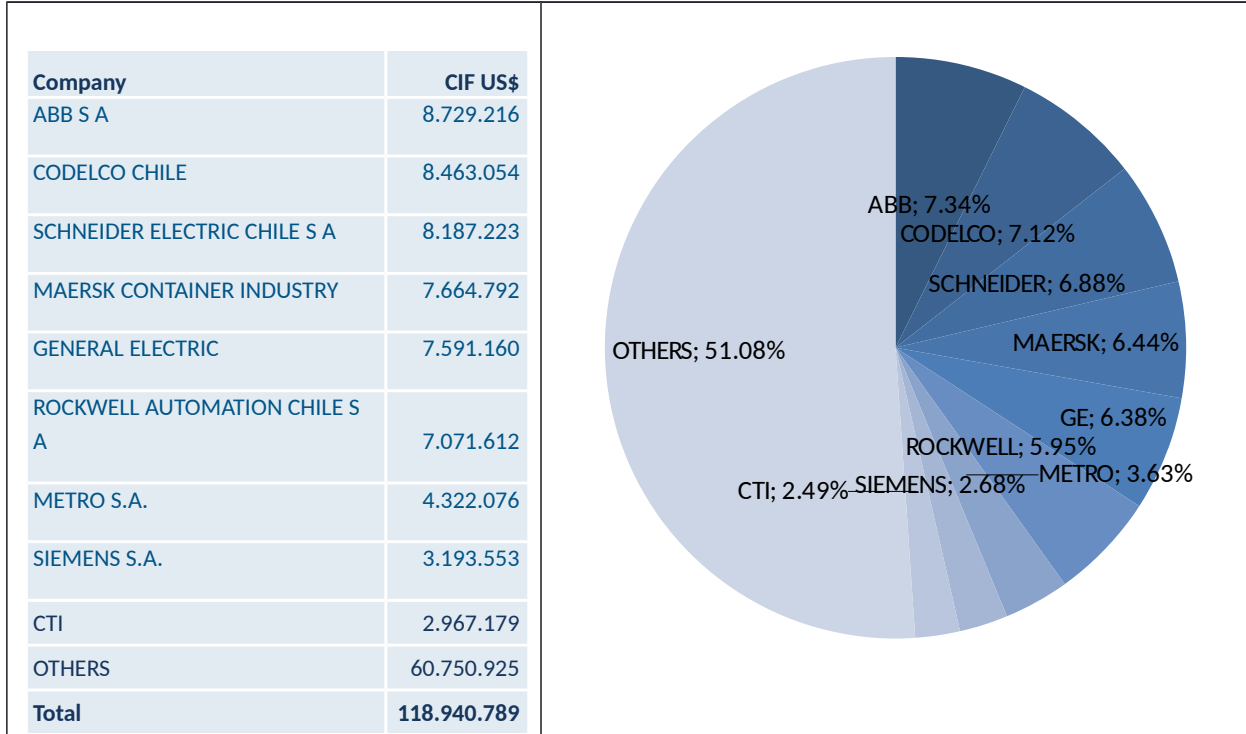
Source: Chilean Customs Statistics

Main importers were subsidiaries of multinational companies and representatives/importers of international brands. Main ones were Indura (subsidiary of the company Air Products from U.S.A.), Alvaro Casanova (local representative of brands such as Gladiator, Neo and Energy) and Proingas (representative of Rehm).

2.1.3.4 Boards, panels and consoles for electric control

The following chart shows main companies importing boards, panels and consoles for electric control in 2017.

Imports by company – CIF value 2017



Source: Chilean Customs Statistics

Main three importers were ABB (11%), Codelco (7%) and Schneider (7%). Imports from automation multinational companies (such as ABB, Schneider, Rockwell, Siemens) correspond mainly to components that, as said before, are also included in these HS codes.

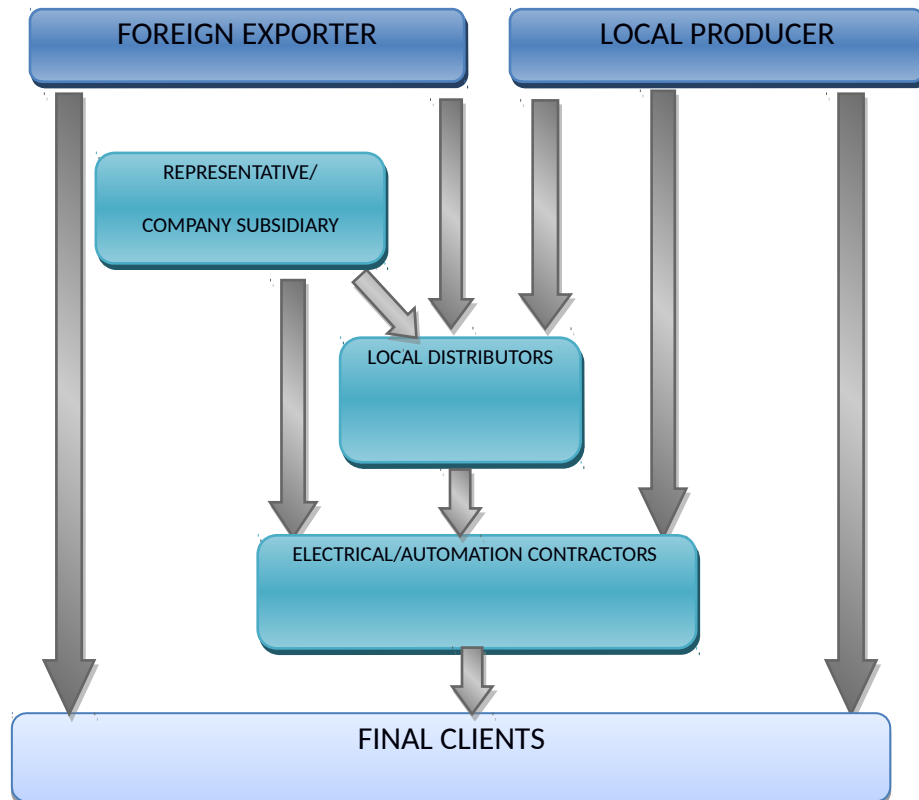
2.2 Exports

Most exports correspond to re-exports of previously imported products or with little re-processing in Chile. They are mainly sent to other countries of the region.

Some exceptions are electric transformers and other minor equipment manufactured by local companies, such as Rhona and Transformadores CH. In 2017, Rhona total exports reached US\$ 1.4 million.

3. Distribution channels

The following chart shows main distribution channels of electrical equipment in Chile.



ANNEX 1 shows the contact data of some of the main producers, representatives and distributors importing electrical equipment

3.1 Representative/Company subsidiary

Representatives are local companies importing and distributing electrical equipment, conducting the whole product supply process. They buy the products to the foreign manufacturers they represent and are responsible of importing them and conducting custom clearance formalities. They are also in charge of the storage, internal transportation, sales and promotion and customer service. Accordingly, they assume almost all the risk of product operation in Chile.

In some cases, some activities (such as storage or distribution) are not directly conducted by them, but subcontracted to third parties.

Representatives usually advise their clients about the best equipment options to fulfil their specific need. They also offer – directly or through third companies - the installation of the products they supply to building companies and final users.

In most cases, representation contracts demand exclusivity, that is to say, local companies cannot represent other competitive brands of the same category.

By the other side, well reputed multinational equipment companies have their own subsidiaries or branches in Chile. Among them are Siemens, General Electric, Rockwell, Schneider, etc.

Most of these companies have been operating in the Chilean market for several years and have created a very good reputation among equipment decision-takers. These companies sell directly and/or through other local distributors. These latest are generally also in charge of equipment installation, maintenance and repair.

Prices of these well-known multinational suppliers are generally quite higher than their competitors, i.e. Asian manufacturers. But they often offer better post-sale service, local availability of spare parts and accessories and guarantees, as well as direct financing.

In some cases and even if a company has a local branch or representative in Chile, equipment is imported directly by the final client. This happens mainly in the case of energy or mining companies importing highly priced equipment.

3.2 Distributors

Electrical equipment distributors could be divided in two groups: hardware distribution chains and small distributors.

3.2.1 Hardware distribution chains

In Chile, there are three main hardware and home improvement distribution chains, selling to building companies, contractors, small hardware stores and final users. These chains are the following:

SODIMAC: Sodimac is the leader with about 36% of the market. The company has subsidiaries in Peru, Colombia, Argentina, Uruguay, Brazil and Mexico. Sodimac has 246 points of sale, 85 of which are in Chile, totalizing a surface of 1.700.000 m². The company accounts annual sales for almost US\$ 5.600 million and 40.000 employees. In Chile, Sodimac operates under three formats; home improvement stores for final clients (Homecenter and Homy), wholesale stores (Sodimac Constructor) for contractors and small building companies and institutional sales to medium and large building companies.

EASY: The Company is part of the Cencosud holding and has subsidiaries in Chile, Argentina and Colombia. In total, Easy has 85 points of sale, 35 of which are in Chile. The company accounts sales for about US\$ 792 million and has around 6.500 employees. It operates business units oriented to different markets; final users, contractors and building companies. In total, they manage around 35.000 different products.

CONSTRUMART: This Company belongs to the SMU holding. It has 36 points of sales all over the country. Construmart is focussed in the sale and distribution of building materials to contractors and building companies, as same as to small hardware stores. In 2016, its total annual sales accounted for around US\$ 370 million.

Hardware distribution chains usually sell small to medium size electrical equipment, importing them directly from foreign companies or buying to local producers. And representatives and to multinational company subsidiaries located in Chile.

3.2.2 Small distributors

Small distributors usually commercialize small to medium size equipment, as well as a wide range of electrical materials and supplies. Many of them are located in regions.

They usually do not import, but buy to local producers, representatives and multinational subsidiaries in Chile. They offer a personalized service mainly to small contractors and final clients

3.3 Electrical and automation contractors

In Chile, electrical works and installations should be conducted by certified electricians. The Electricity and Fuel Superintendence (SEC) is the institution in charge of granting this certification, which should be renewed each five years.

Most electrical equipment - especially medium and big ones - is installed by specialized contactors. These latest often work under turnkey project modality, therefore they buy the equipment and other supplies and sell the project to their clients already finished and operating.

4. Import and commercialization formalities

Electrical equipment imported and commercialized in Chile should meet some formalities. Some of them are the usual to any import, but some are specific for some products, necessary to their entry and further commercialization.

Although most of these formalities are conducted by the importer, it is advisable that the exporter be aware of the documentation and product requirements necessary to fulfil the Chilean regulation.

4.1 Certification of Electrical equipment

Commercialization of electrical products in Chile may require mandatory safety certification established by the government through the Superintendence of Electricity and Fuels (SEC).

The certification is ruled by the Supreme Decree 298/1995. The dispositions of this regulation apply to all fuel products commercialized in Chile and to electrical products that - in accordance with current standards - must be certified for any use or application field.

Most electrical products requiring certification are mainly home appliances or equipment intended to be used by no trained persons. The list also includes some types of electrical material (switches, plugs, cables, etc.) and some hand electrical tools (drills, screwdrivers, polishing machines, etc.).

Some types of generators must be certified previous to their commercialization. This applies to generators not exceeding 1.000V or 500kW powered by fuel or diesel. Tests

should be conducted by previously approved laboratories and under the product requirements ruled by Protocol PC 115.⁸ Diesel generators should

From 2020 on, new diesel and fuel powered generators intended to be installed in the Metropolitan Region should also comply with the maximum limits of pollutant substances (such as carbon monoxide, hydrocarbon, nitrogen oxides, etc.) established by the Atmospheric Prevention and Decontamination Plan for the Metropolitan Region launched in 2017.

The other electrical equipment covered in this survey is not subject to any specific compulsory product certification. Nevertheless, they could be subject to mandatory requirements related to their installation and, therefore, equipment must fully comply with them. These requirements could be, for instance, related to personal safety and to protection in case of fire, earthquake and water flood.

In addition, international certification granted by well-reputed international institutions is often required by clients in the framework of tendering processes.

In terms of efficiency certification, the current Chilean standards and labelling program focuses mainly on appliances used in the residential sector, except for distribution transformers and three-phase induction motors. Since 2007, Chile has a voluntary labeling program defined in technical standard NCh3039, which covers single-phase distribution transformers (from 10 kVA to 833 kVA) and three-phase distribution transformers (from 15 to 2,500 kVA). In both cases, they are dry and liquid-filled distribution transformers with a primary voltage of 34.5 kV or less, and a secondary voltage of 600 V or less, rated for operations at a frequency of 50Hz.

4.2 Import procedures

In the case of any import, Chilean Customs requires that each customs entry be supported by the following documents:

- Commercial Invoice
- Certificate of Origin, if applicable
- International Transport Document (Bill of Lading or Air Way Bill)
- Packing List, when necessary
- Value declaration
- Other Documents (i.e. safety certificates)

⁸ Find protocol PC 115 and other relevant information about certification by clicking in <https://wlhttp.sec.cl/PublicacionProductos/publicacion.do>

All imports of a total value exceeding USD 1.000 (FOB) require the participation of a Customs Broker. Minor imports (less than USD 1.000 FOB) can be cleared directly by importers, following a simplified procedure.

Prior import licenses are not requested by authorities. This is valid for any type of goods.

4.3 Duty fees and taxes

The tax treatment applicable to imports into Chile includes the payment of customs duties, Value Added Tax (VAT) and other taxes (if applicable), all calculated on CIF value and determined under GATT valuation standards. Electrical equipment imports are subject only to duty taxes and VAT.

The ad-valorem customs duty rate is 6%. However, goods originating in any of the countries or regions having signed a Commercial Agreement with Chile and evidencing such condition by means of a Certificate of Origin can be benefited with a reduction or exemption of import duties.

Chile has signed 26 Commercial Agreements with 64 markets, representing 63% of total world population and 86.3% of world GDP. These agreements grant tariff preferences to the import of some products.⁹

India and Chile have signed a Partial Scope Trade Agreement (PSA) giving to some electrical equipment a tariff preference. Products covered in this survey and benefiting of this preference are the ones classified under the following HS codes:

Chapter/code	Description	Tariff preference
85.02	Generators 85.02.11.10 of an output not exceeding 15 kVA 85.02.11.20 of an output exceeding 15 kVA but not exceeding 37.5 kVA 85.02.11.90 others not exceeding 75 kVA	 80% 80% 80%
85.04	Electric transformers - Dielectric liquid filled Transformers	

⁹ Find the list of countries and the complete texts of Commercial Agreements signed by Chile, by clicking on this link: www.direcon.gob.cl/acuerdos-comerciales/

	85.04.21.10 of an output not exceeding 15 kVA 85.04.21.20 of an output exceeding 15 kVA but not exceeding 75 kVA 85.04.21.30 of an output exceeding 75 kVA but not exceeding 150 kVA 85.04.21.40 of an output exceeding 150 kVA but not exceeding 300 kVA 85.04.23.10 of an output exceeding 10.000 kVA but not exceeding 37.500 kVA 85.04.23.20 of an output exceeding 37.500 kVA but not exceeding 75.000 kVA 85.02.23.30 of an output exceeding 75.000 kVA but not exceeding 150.000 kVA 85.04.23.90 Others -Other types of transformers 85.04.31.00 of an output not exceeding 1 kVA 85.04.32.00 of an output exceeding 1 kVA but not exceeding 16 kVA 85.04.33.00 of an output exceeding 16 kVA but not exceeding 500 kVA 85.04.34.00 an output exceeding 500 kVA	80% 80% 80% 80% 80% 80% 80% 80% 80% 80% 80% 80% 80% 80%
85.15	Welding machines 85.15.80.00 Others (like laser or other light or photon beam, ultrasonic, electron beam, magnetic pulse 85.15.90.00 Parts	100% 80%
85.37	Components for electric control (boards, panels and consoles) 85.37.10.00 for a voltage not exceeding 1.000 V 85.37.20.10 for a voltage exceeding 1.000 V but not exceeding 72.5 kV	100% 80%

Additionally, electrical equipment and supplies are subject to VAT (value added tax), which rate is 19%.

4.4 Trademark protection

Even if it is not mandatory, it is strongly recommended that foreign companies register their trademarks if they aim to use them in Chile. They will permit to uniquely identify a company and its products to its customers and to distinguish them from those of its competitors

It is also advisable that, before using a trademark or logo, companies should check if such signs are already registered in identical terms or in similar terms (from a visual or phonetic point of view).

Trademark protection lasts 10 years and its registration can be renewed indefinitely (for periods of 10 years at a time). According to Chilean law, trademarks cannot be revoked for non-use reasons. The owner of a trademark could authorize a third party to use it under a license contract.

The National Institute of Industrial Property INAPI (www.inapi.cl) is the Chilean agency for registering trademarks, copyrights and appellations of origin. The registration procedure can be done in person or via internet, for a fee. According to Chilean law, it is not necessary to hire a lawyer or trademark agent to file a trademark application. Nevertheless, it is highly recommended in the case of companies having foreign residence, which should also appoint a local representative.

5. Market opportunities and conclusions

5.1 SWOT analysis

The following SWOT Analysis is intended to be a useful technique for understanding the Strengths and Weaknesses of India medical equipment and supply producers, and for identifying both the Opportunities open to them and the Threats they face in the Chilean market.

SWOT ANALYSIS

Strengths <ul style="list-style-type: none">• In 2017-18, the total production of Electrical Equipment Industry stood at USD 27.3 billion. It is anticipated to reach US\$ 100 billion by 2022.• Good comparative advantages of the India electric equipment market of manufacturing costs, market knowledge, technology and creativity.• Competitive prices• Wide variety of products.• Existence of experienced Indian producers and exporters.• Duty tax preference (India-Chile Partial Scope Agreement).	Opportunities <ul style="list-style-type: none">• Total market is expected to continue growing in years to come.• Opportunities for low-cost equipment with demonstrable quality.• Opportunities for niche products, especially those incorporating technology advances.• Existence of several well-reputed potential representatives/distributors• Opportunities in the mining, energy and building sectors
Weaknesses <ul style="list-style-type: none">• Lack of awareness of Indian electrical equipment among decision takers.	Threats <ul style="list-style-type: none">• High competition from multinational and largely established companies.• Potential changes in regulation that will increase electrical equipment safety control and need of certification.

5.2 Main opportunities and conclusions

After a slowdown in Chilean economy, main sectors in which electric equipment is more intensely used are expected to grow from 2018. Importantly, it is noticeable that several energy, building and mining projects – which were in stand-by waiting for better conditions– are starting to be reactivated.

According to market actors, there are good opportunities for generating sets with low gas and particle emissions, vis-a-vis the standards generators to be installed in the Metropolitan Region will have to meet from 2020 on. Also, there are good opportunities for generating sets with low fuel consumption, as well as for those which reduce noise and vibration while operating.

Equipment for small-scale energy generating projects is expected to be more demanded, given recent changes in the energy distributed generation. These projects will probably be more attractive for companies, communities and households, given that the maximum installed capacity to inject energy to the network has increased from 100 to 300 kW.

In addition, there are good prospects for equipment for the automation market, specifically at industrial and building level (domotics and inmotics).

Related to welding machines, robotized equipment (MIG, TIG, Laser, etc.) have good possibilities in the Chilean market. Nevertheless, they will not easily replace manual welding machines, which are widely used in the building and metal mechanic industries. In relation with these latest, Indian exporters have good possibilities inasmuch as they can supply good quality equipment, at competitive prices compared to Chile.

Recent changes in electric network quality and safety standards will oblige electric distribution companies to change all current electric consumption meters by smart devices, within the next 7 years. This will translate in a significant demand for electric meters, given that the total estimate number of clients to which meters should be replaced is estimated in 6.5 million.

In addition, there are good opportunities for equipment related to electricity transmission. The government recently awarded – in the framework of a tender process - about 45 new projects aiming to expand for the national transmission system, representing an estimated total of US\$ 273 million.

As seen before, most of electrical equipment used in Chile is imported, with the exception of some types of electric transformers and other minor equipment.

Several international companies, such as Cummins, Perkins, ABB, Schneider, etc., have subsidiaries in Chile and sell their products, as well as their associated services (installation, maintenance, repair, etc.). They also sell through local distributors.

There are also several companies representing electric equipment. In some cases, they have exclusivity contracts with their suppliers, that is, they can only sell equipment from the brand they represent. In other cases, local representatives sell different brands which even compete with each other.

In case of high cost equipment, it is usual that final clients (such as energy and mining companies) import directly. In fact, both multinational subsidiaries and representatives often give to their clients the option to import directly from their manufacturing plants, but take in charge the further installation, maintenance and repair services

Indian exporters willing to sell electrical equipment in Chile are advised to find a local representative or importer, who can be permanently aware of public and private calls for bids, as well as to deal with certification processes (if needed) and import procedures. Moreover, it is very important that the representative can take in charge the training to users and post-sale services (repairing and maintenance), as these activities are requested in almost all tenders.

It is also important to take in mind that local subsidiaries of international brands (such as ABB, Siemens, Rockwell, etc.) - which in some cases are the main importers - have very few possibilities to decide where to import from, as most of the time this decision is imposed to them by the brand.

Setting up manufacturing bases in Chile - alone or in association with Chilean investors - can also facilitate targeting not only the Chilean market but also other markets, taking advantage of the free trade agreements Chile has currently in place.