

ELECTRICAL MACHINERY & CABLES

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PRODUCTION

The Turkish electrical machinery sector vitalized itself in the 1990's by diversifying its products and adopting recent technologies in product design and in production processes. The share of the electrical machinery industry is 4.3% of total exports with a value of US \$ 4.4 billion in 2009.

Turkey produces almost every kind of electrical machinery including: isolated cables and wires; domestic electrical appliances; AC motors; small motors for domestic electrical appliances; all types of power transformers, distribution transformers, and measurement transformers, power generators and electrical equipment such as breakers, contactors, fuses, capacitors, relays, panels and cells; insulators; indoor installation materials and accumulators; batteries; lighting materials; electric carbons and uninterrupted power sources.

The Turkish electrical machinery industry is composed of more than 5,000 companies with medium and small sized companies dominating the industry. The number of people employed in this sector is approximately 56,000. Manufacturing sites are mainly located in the Marmara, Central Anatolia and Aegean Regions of Turkey. İstanbul, Bursa, Konya, İzmir, Ankara and Kayseri are the major cities in electrical machinery and parts production.

Isolated Cables and Wires

Isolated cables and wires have the largest share in the total exports of the Turkish electrical machinery industry. The share of the cables and wires subsector equals 32% of the exports of the electrical machinery industry. The electrical cables industry in Turkey is composed of medium and large sized establishments as well as small sized plants, with most situated in İstanbul. With more than 374 cable manufacturers in addition to the plants of multinational cable companies, Turkey has a large potential for cable production. There were 12 cables and wires companies in Turkey's top 500 industrial enterprises in 2008 (Sarkuysan Elektrolitik Bakır San. ve Tic. A.Ş; Er-Bakir Elektrolitik Bakır Mamulleri A.Ş; Hes Hacılar Elektrik San. ve Tic. A.Ş; Türk Prysmian Kablo ve Sistemleri A.Ş; Nexans Türkiye Endüstri ve Tic. A.Ş; Demirer Kablo Tesisleri San. ve Tic. A.Ş; Pamukkale Kablo San. ve Tic. A.Ş; Bemka Emaye Bobin Teli ve Kablo San. Tic. A.Ş; Vatan Kablo Metal End. ve Tic. A.Ş; Ak Kablo İmalat San. ve Tic. A.Ş; Tümka Kablo Sanayi A.Ş.). 7,796 people are employed in the cables sector. There are approximately 23 firms operational in the isolated enamelled winding wire industry, which is an important component of electrical cables. The majority of them are composed of small-capacity plants, with a production capacity of about 25,000 tons. Although the capacity of these establishments is relatively small compared with European firms, these plants use high technology.

Transformers

The share of the transformers subsector equals 17% of the exports of the electrical

machinery industry. Power and distribution transformers and measurement transformers are produced effectively in Turkey. The production of power and distribution transformers is realized by nine large and medium sized companies. "Areva T&D Enerji Endüstrisi A.Ş." and "BEST- Balıkesir Elektromekanik Sanayi Tesisleri A.Ş." entered Turkey's top 500 industrial enterprises in 2008. The capacity of distribution and power transformers in these plants is about 27,000 MVA. The technology used in these factories is compatible with world standards and the quality of Turkish engineering in power transformers is high. In addition, there are 12 large companies which produce measurement transformers up to 400 KV. The measurement transformers industry is competitive in world markets with its technology and product quality.

Domestic electrical appliances

The domestic electrical appliances industry is one of Turkey's well-established and dynamic sectors. The Turkish domestic electrical appliances sector has a wide product range from electrical shavers to microwave ovens. Sector production has been rising continuously since the 1950s. In terms of quantity, domestic electrical appliances production was about 16 million units in 2009. Among domestic electrical appliances refrigerators are the most important items with nearly 6.1 million units produced and 4.8 million exported in 2009. There are approximately 800 firms operational in the domestic electrical appliances sector employing 18,433 workers. Seven companies were in Turkey's top 500 industrial enterprises list of 2008 (Arçelik A.Ş; BSH Ev Aletleri San. ve Tic. A.Ş; Vestel Beyaz Eşya San. ve Tic. A.Ş; Indesit Company Beyaz Eşya Sanayi ve Ticaret A.Ş; Kumtel Dayanıkl Tüketim Malları Plastik San. ve Tic. A.Ş; Doruk Ev Gereçleri San. Ve Tic. Ltd. Şti; Erna-Maş Makina Tic. ve San. A.Ş;) Production lines are mostly in the Marmara, Aegean and Central Anatolia regions of Turkey. The main factories are located in İstanbul, Manisa, Eskişehir, Bolu, Gebze, Bursa, İzmir, Ankara, Kocaeli, Yalova, Kayseri, Konya and Bilecik.

Electric generator and motors

Electric generator industry exports comprise 4.3% and electric motor industry exports comprise %1.7 of the exports of Turkish electrical machinery. In Turkey, the production of small capacity motors for domestic electrical appliances is successfully carried out by nine medium sized companies. In addition, there are a few large companies producing specialized high capacity electric motors up to 160 KW. The number of companies which specialize in the production of electric motors, generators and transformers is 608 and employ 5,653 people. There were two generator companies in the Turkey's top 500 industrial enterprises in 2008: Akxa Jeneratör San. A.Ş. and Genpower Jeneratör San. ve Tic. A.Ş.

The production of other important electrical equipment such as medium voltage breakers, relays and protection systems; low voltage panels and cells; ceramic insulators and power generators; contactors; fuses; capacitors; indoor installation materials;, lighting materials; accumulators and batteries is carried out by medium and large sized companies in an efficient way. For medium voltage breakers, the annual production capacity of the large sized companies is 22,750 units. Technology and quality are being improved continuously. The production of low voltage panels and cells meets domestic demand. Annual production capacity of the companies operational in the sector is about 190,000 cells. There are 2 medium scale companies in the ceramic insulator sector. Also, there are a

large number of small scale producers, amounting to a total capacity of 2,500 tons/year.

The Turkish electrical machinery manufacturers/exporters follow EU technical standards and norms. It is obligatory to affix the “CE Mark” in the Turkish market.

EXPORTS

At present, electrical machinery industry exports comprise 4.3% of total exports. The total export value of electrical machinery was US \$ 4.4 billion in 2009. Turkish-made electrical machinery is exported to almost 200 countries throughout the world. In 2009, Iraq was the major buyer of Turkish electrical machinery. Other principal export markets of Turkish electrical machinery are the United Kingdom, Germany, France, Turkmenistan, Italy, Saudi Arabia, the United Arab Emirates, the Russian Federation, Qatar, Libya and Belgium.

The main export products are insulated wires and cables, electric transformers, domestic electrical appliances, and electric boards and panels. Among product groups, insulated wires and cables have the largest share in the total exports of electrical machinery. The share of insulated wires and cables in the exports of electrical machinery is 32%. Producer and exporter firms in the cable sector are competitive in international markets with their capacity, technology, service and quality. In spite of intense competition in international markets, Turkish cable exports are expected to increase further.

The other significant export product, electric transformers account for 17% of the total exports of the sector. Major export markets for transformers are: Qatar, Saudi Arabia, Iraq, the UAE, Turkmenistan, Bahrain, Germany, the Netherlands, Algeria and the United Kingdom.

Turkey's Export of Electrical Machinery (Value: US\$ million)

PRODUCTS	2007	2008	2009
Insulated wires and cables	1.705	2.087	1.404
Electric transformers	583	844	753
Domestic electrical appliances	572	727	613
Electric boards, panels	207	323	368
Electrical apparatus for switching not exceeding 1000V	526	436	330
Electric generating sets and rotary converters	213	251	187
Electric accumulators	153	193	148
Parts of electric boards, panels	84	98	95
Parts of electric motors, electric generating sets	86	99	78
Electric motors and generators	91	97	75
Electrical apparatus for switching exceeding 1000V	53	68	66
Electrical machinery having individual function	19	26	30
Electrical lamps-bulbs	18	22	23
Insulating fitting for electrical machinery	15	23	21
Electronic integrated circuits	15	20	14
Electrical insulators	6	9	8
Electric batteries	4	2	8

Carbon electrodes	3	5	6
Printed circuits	22	7	5
Electrical capacitors	3	5	5
Electro magnets	3	4	5
Diodes, transistors	5	6	4
Electrical resistors	4	3	4
TV tubes	2	2	1
Electrical parts of machinery	0,9	0,2	0,3
Others	155	179	148
TOTAL	4.548	5.537	4.401

Source: Turkish Statistical Institute- TurkStat

TRADE FAIRS of 2010:

“WIN WORLD OF INDUSTRY 2010” Automation and electro-technology fair, in İstanbul in February,

“LIGHTECH 2010” Lighting and electrical equipment and fixtures, automation and technologies fair in İstanbul in March,

“KONELEX 2010” 5. Electric, electronic, electro-mechanic, energy, automation and lighting fair, in Konya in May

“3. Automation, Electric - Electronic, Energy Fair” in Adana in June

“BROADCAST, CABLE & SATELLITE EURASIA 2010” in İstanbul, in October

“4. Cables & Wires, Cable Accessories and Grouping, Electro-Isolation Materials ve Equipment Fair” in İstanbul in October

“ELECO 2010” 8. Electric, electronic, automation, lighting and communications fair and symposium, in Bursa in November

“WEM Electrical Machinery Fair” in İstanbul in November