



### INDUSTRY



## **ELECTRONICS**



#### **ELECTRONICS**

Worldwide information and data processing technologies have demonstrated remarkable development in recent years. Taking a place among the developed countries in the 21st Century, often called "the information age", depends upon progress in the electronics and communication sectors. Similarly, the Turkish electronics industry is continuously working to produce innovative, high quality and globally competitive products.

The Turkish electronics industry began to develop rapidly in the second half of the 80's. The introduction of colour TV broadcasting and the acceleration in telecommunication investments boosted development. Furthermore, the revolution in telecommunication technologies which took place during those years, increased the growth of the sector. Most of the Turkish companies started operations through foreign license agreements. The licensors originated from the Netherlands, Germany, Japan, the USA, Canada, France, the United Kingdom, Denmark and Italy. Today the sector is a mature industry and has reached a significant level in technical knowledge.

The electronics industry is examined in subsectors:

- Lighting devices (some kinds of lambs and flashing signs)
- White goods (conditioner, refrigerators, washing machines, dishwashing machines, oven, cooker and grill)
- Components, Integrated Circuits and Other Machines (circuit elements, printed circuit boards, picture tubes, coils and transformers, acoustic elements, connection elements, electronic relays)
- Data processing devices (article, account and IT machines)
- Electrical machines and energy group (electric poer systems, generators, transformers, accumulators etc.)
- Switchgears and panels (electric circuit equipments, panels for electricity control and distribution)
- Telecommunication equipments (telecommunication cables and wires, transmission equipment, telephone and telegraph automatic exchanges, enduser equipment (telephone, teleprinters, telefax etc.), transmitters and receivers for wireless telephone/telegraph equipment, receiver/transmitter antennas for wireless telephone equipment)
- Brown goods/ others (video recorder, radio, telephone, projector etc.)
- Brown goods/TV (TV sets)
- Musical instruments (musical instruments and their parts)
- Optical instruments and devices (optical devices, lenses, glasses, spectacle frames)
- Clocks and watches (clocks, watches and their parts)
- Audiovisual devices (microphone, speaker, gramophone, tape recorder, transmitter etc.)
- Medical devices (devices for medical, surgical, dentistry, veterinary, breathing apparatus and orthopedic devices)
- Software sector (visual supports, cards etc.)
- Measurement and indication devices (compasses, precision scales, counters, devices for chemical and physical analysis)

There are approximately 2,033 manufacturing companies in the field of electronics.

The Turkish electronics industry manufacturers/exporters follow European and international standards and norms. The obligation to affix the "CE Mark" to products began in the local market in 2002. At the same time, Turkish manufacturers have been closely following the developments closely, in international quality and environmental standards.

#### **FOREIGN TRADE**

#### **EXPORTS**

The Turkish electronics industry, founded on high added value, innovation, creativity, and extensive research, develops products not only for the local market but also for overseas. The exports of the sector have demonstrated a constant increase since 1990. This is mainly due to intensive R&D efforts and production aligned with the needs of the export markets.

Electronics industry products having the most recent technology are supplied to the Turkish market simultaneously with Europe. Turkish electronics industry exports are primarily directed to European markets. In 2017, the Turkish electronics industry realized exports to roughly 200 countries. The total value of electronics exports sector increased by 3.9% compared to the previous year and reached US \$10.2 billion in 2017. As in production, consumer electronics and telecommunication equipment were the main items in exports.

Turkish Electronics Industry Exports (US \$ 1,000)

Products	2015	2016	2017	Ratio (2017) (%)	Change (2016/17) (%)
Electrical Machines and Energy Group	3.178.296	3.198.533	3.178.296	31,3	0,6
White Goods	2.231.353	2.406.616	2.231.353	23,5	7,9
Brown Goods/TV	1.358.525	1.423.003	1.358.525	13,9	4,7
Switchgears and Panels	1.108.039	1.163.685	1.108.039	11,4	5,0
Measurement and Indication Devices	326.351	362.416	326.351	3,6	11,6
Medical Devices	284.994	319.162	284.994	3,1	12,0
Electrical Home Appliances	256.314	277.218	256.314	2,7	8,2
Lighting Devices	279.137	252.802	279.137	2,5	-9,4
Telecommunication Equipments	240.738	211.646	240.738	2,1	-12,1
Components, Integrated Circuits and Other Machines	173.866	183.361	173.866	1,8	5,5
Data Processing Devices	122.736	122.142	122.736	1,2	-0,3
Optical Instruments and Devices	89.089	121.482	89.089	1,2	36,4
Audiovisual Devices	89.486	109.833	89.486	1,1	22,7
Clocks and Watches	34.194	45.886	34.194	0,4	34,2
Software Sector	23.312	12.371	23.312	0,1	-46,8
Musical Instruments	9.557	9.484	9.557	0,1	-0,8
Brown Goods/Others	78.817	59.211	31.390	0,0	0,7
Total	10.536.019	9.865.197	10.250.327	100,0	3,9

Source: Ministry of Trade

Turkish Electronics Industry Exports by Countries (US \$)

Countries	2015	2016	2017	Ratio % (2017)
England	1.362.748.082	1.206.839.662	1.331.485.482	13,0
Germany	1.096.640.276	1.065.628.883	1.105.377.713	10,8
France	739.378.220	725.658.771	704.399.520	6,9
Italy	434.012.055	384.996.135	405.038.245	4,0
Iraq	567.203.872	321.260.058	342.589.650	3,3
Saudi Arabia	456.028.776	425.198.687	304.695.143	3,0
Spain	278.053.733	281.979.586	302.713.276	3,0
Poland	185.597.258	182.495.495	228.469.078	2,2
Israel	209.551.473	192.011.167	216.096.493	2,1
Bulgaria	126.109.208	143.865.751	215.656.825	2,1
Turkmenistan	466.692.821	234.682.113	201.736.771	2,0
Iran	177.989.309	186.458.729	200.854.494	2,0
Holland	180.407.732	211.010.845	196.874.412	1,9
USA	123.439.602	134.588.918	190.663.723	1,9
Romania	119.206.705	150.803.914	182.642.790	1,8
Others	4.012.959.977	4.017.718.855	4.121.033.322	40,2
Total	10.536.019.099	9.865.197.569	10.250.326.937	100,0

Source: Ministry of Trade

When export countries are analysed, it could be seen that the European Union is the most important market for the Turkish electronics sector. England is the top exporting country of the sector with a 13.0% rate and Germany (10.8%), France (6.9%) are the following export markets. Apart from the European Union countries, peripheral countries (such as Irak, Turkmenistan) and the USA are the other important exporting countries for the sector.

Turkish Electronics Industry Imports (US \$ 1,000)

Products	2015	2016	2017	Ratio (%) (2017)	Change (2016/17) (%)
Components, Integrated Circuits and Other Machines	2.049.080	4.411.035	5.458.139	20,5	23,7
Telecommunication Equipments	4.829.633	4.894.539	4.458.019	16,8	-8,9
Electrical Machines and Energy Group	3.834.891	4.297.436	3.630.544	13,7	-15,5
Switchgears and Panels	2.161.948	2.174.039	2.473.545	9,3	13,8
Measurement and Indication Devices	2.062.733	2.118.596	2.471.290	9,3	16,6
Data Processing Devices	2.620.088	2.227.219	2.358.212	8,9	5,9
Medical Devices	1.738.024	1.736.558	1.713.916	7,4	13,6
Optical Instruments and Devices	779.807	746.557	797.376	3,0	6,8
Electrical Home Appliances	633.739	491.985	531.232	2,0	7,9
Lighting Devices	690.044	515.189	502.117	1,9	-2,5
Brown Goods/Others	475.560	523.745	417.472	1,6	-20,3
White Goods	426.774	391.809	415.284	1,6	6,0
Brown Goods/TV	603.634	463.270	310.070	1,2	-33,1
Audiovisual Devices	1.711.885	1.444.977	1.942.247	1,1	9,0
Clocks and Watches	299.339	260.422	283.900	1,1	9,0
Software Sector	281.293	226.680	171.481	0,6	-24,4
Musical Instruments	34.201	31.274	34.272	0,1	9,6
Total	25.231.207	26.956.795	27.969.118	100,0	3,1

Source: Ministry of Trade

The total import of the electronics sector increased 3,1 % compared to the previous year and recognized 26,5 billion US Dollars in 2017. The import value of the components, integrated circiuits and other machines has the biggest ratio in 2017 total import with 20,5% ratio and 5,4 billion US Dollars. Telecommunication equipments (16,8 % ratio) and electrical machines and energy group (13,7 % ratio) are the other important imported goods in electronics sector.

Countries	2015	2016	2017	Ratio (2017)
China	9.545.643.991	10.696.542.060	9.159.096.152	32,7
Germany	2.464.153.182	2.822.455.830	2.714.082.356	9,7
Vietnam	939.566.884	947.457.507	2.255.286.389	8,1
USA	1.250.303.518	1.257.193.187	1.362.179.605	4,9
Malaysia	218.561.947	471.497.826	942.382.349	3,4
South Korea	1.861.338.041	1.269.140.014	887.066.375	3,2
Taiwan	661.243.025	534.933.026	853.796.391	3,1
Italy	842.806.515	862.777.553	838.938.116	3,0

France	775.953.806	742.763.009	786.128.557	2,8
Thailand	206.434.344	365.393.469	779.947.766	2,8
Japan	484.417.952	633.992.250	640.801.665	2,3
Poland	535.532.584	584.526.418	605.807.863	2,2
Czech Republic	446.188.992	531.455.194	585.254.161	2,1
Spain	393.056.979	497.158.791	483.265.950	1,7
England	364.416.051	371.092.065	405.349.745	1,4
Others	4.241.590.140	4.368.417.278	4.669.734.769	16,7
Total	25.231.207.951	26.956.795.477	27.969.118.209	100,0

Turkish Electronics Industry Imports by Countries (US \$)

Source: Ministry of Trade

If the import countries are analysed, it could be seen that China (32.7%) has the highest ratio in total imports. Although the export countries are concentrated in the European Union, the import countries are diversified.

#### TRADE FAIRS

Fairs in Turkey

#### **USEFUL LINKS**

- General Secretariat of Istanbul Minerals and Metals Exporters' Union: http://www.immib.org.tr/en
- Turkish Electronics Industrialists Association http://www.tesid.org.tr
- Turkish Electro Technology (Electrical Electronics and Services Exporters' Association)
   http://www.tet.org.tr/en





# Discover the potential

#### Prepared by

Directorate General of Exports

www.trade.gov.tr

ihrticari@ticaret.gov.tr

Call Center +90 850 808 04 04