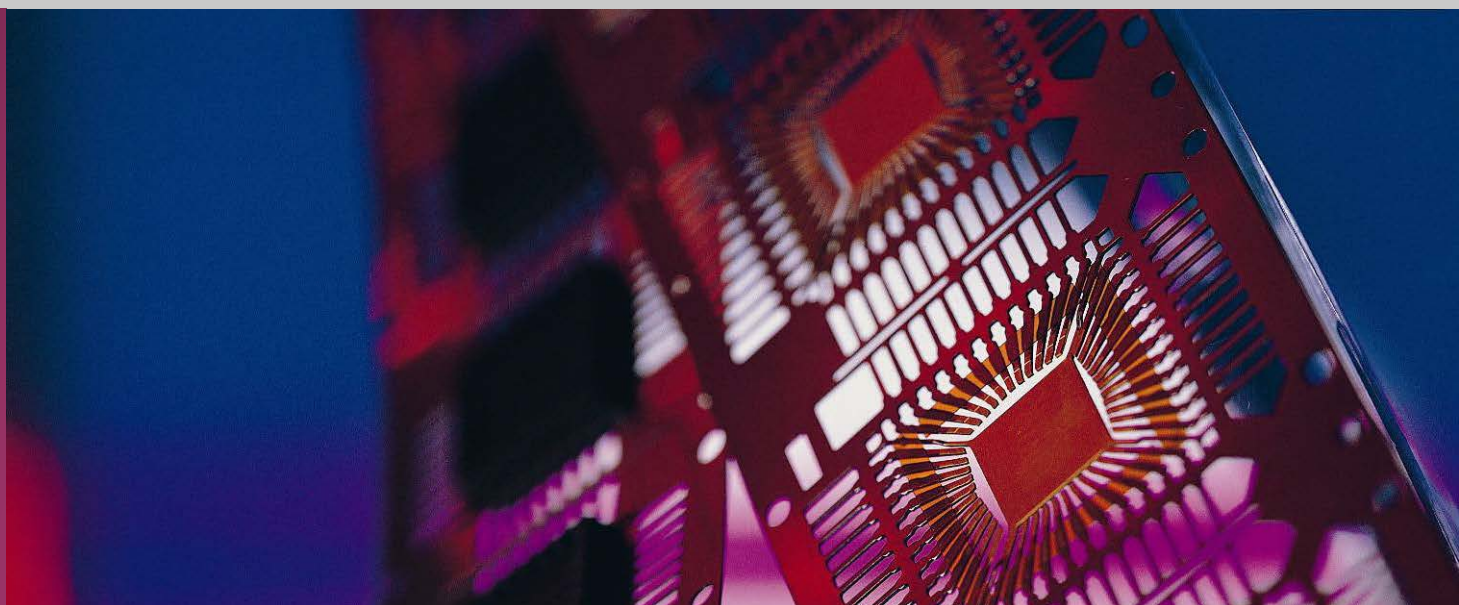


# ELECTRICAL ENGINEERING INDUSTRY



**S A R I O**

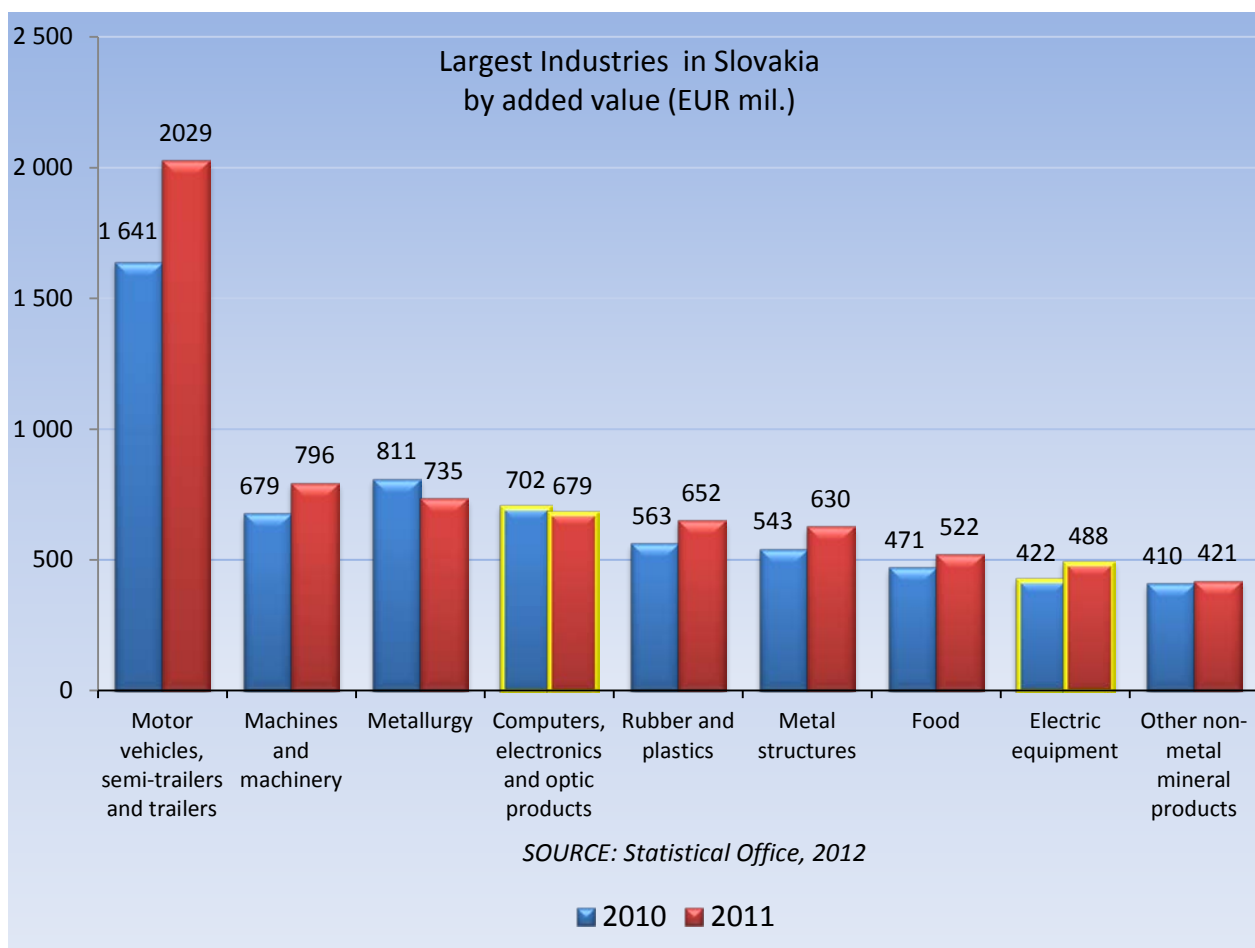
Slovak Investment  
and Trade Development Agency

## General information

Slovak industry has been experiencing big structural change in last 20 years. Electrical engineering industry (EEI) representing one of the basic pillars of modern industry and the entire Slovak economy, experiences a period of extensive growth, with the onset of modern companies and decline of production in many outdated operations.

Prior to the crises, the fast growing quantitative parameters of EEI outran the development in efficiency, profitability and overall industry importance. During the last years, EEI kept going the same direction since economical crisis has struck. Industry in total is decreasing but **profitability and added value keep increasing steadily**. This was reflected in employment rates that kept declining, in 2011 by 1,5% and at the same time resulted into growth of average wage in industry by 6,5%.

According to data of the SR Statistics Office, 189 companies employing over 20 employees were active in the EEI in 2010. In 2011, there were 203, which only confirms the growing tendencies. Most of the new companies belong to foreign investors. By total revenues, EEI ranks third behind machinery industry (including car manufacturing) and electricity, gas and steam supplies. There is a total of 377 thousand people employed in Slovak industry. With **41 700 employees**, EEI is even one of the largest employers. It employs 7 percent of all industry workers. Further, it is the second most important exporter (behind machinery industry), with a highest share in the Slovak industrial export.



Electrical engineering industry in Slovakia – basic figures:

	2010	2011	2010/2011(%)
Total revenues (EUR mil)	8 874	8 519	-4,10%
Profit / Loss (before tax, EUR mil)	320	373	+16,50%
Number of staff (full time equivalent)	42475	41781	-1,60%
Average monthly wage (as an average of wages for two branches according to NACE, EUR)	753	802	+6,50%
Added value (EUR mil):	1 123	1 166	+3,90%
- Manufacture of computer products	702	679	-4%
- Manufacture of electric equipment	422	488	+15%

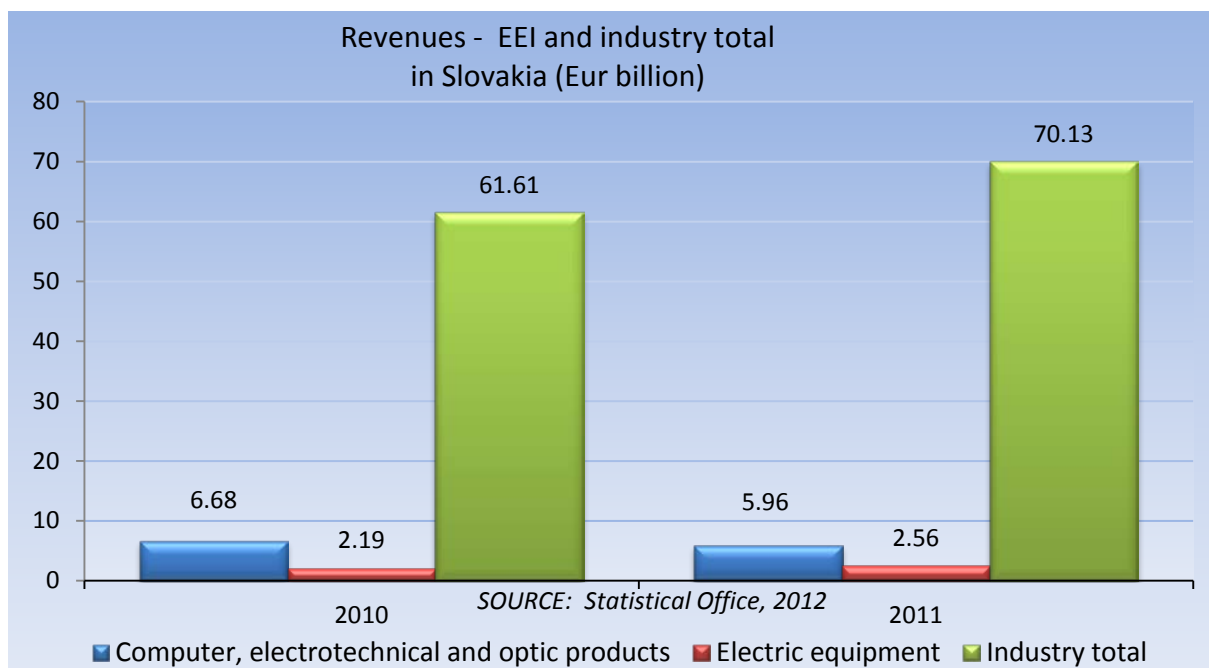
Source: Statistical Office of the SR, 2012

## Revenues

In last decade, total revenues of EEI companies kept growing with double digit dynamics. This was happening especially thanks to the largest EEI´s producer – Samsung Electronics Slovakia in Galanta. In 2011, with revenues of EUR 3,17 billion, which represent 37% of the whole sector revenues, this company ranked fourth among all industrial companies EEI.

Mentionable fact is that the whole Slovak industry grew in 2011 by 14% while EEI went down by almost 4%.

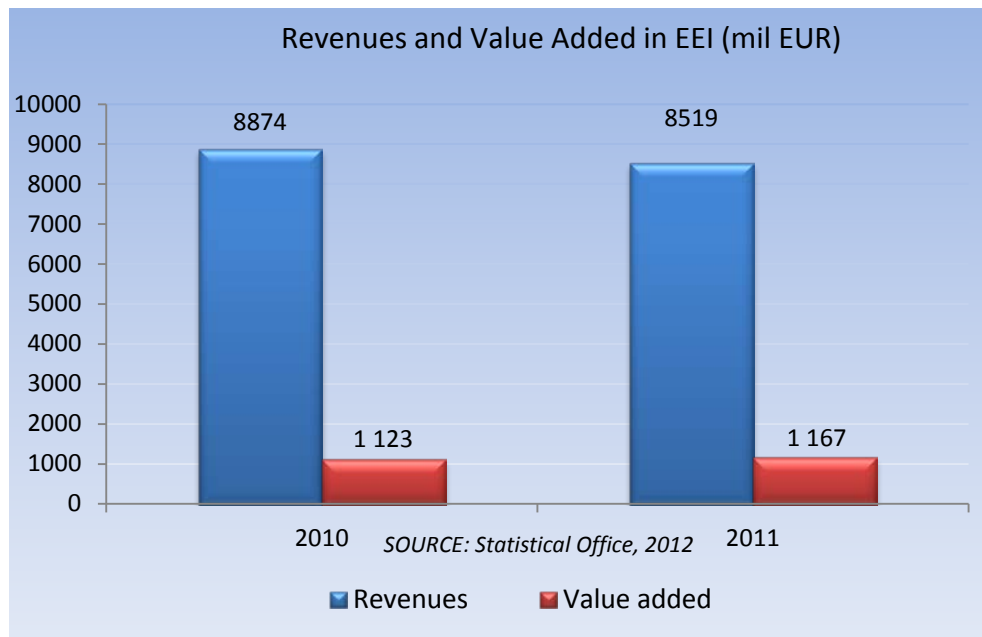
In 2011, EEI generated **12% of the total revenues** of the entire **Slovak industry**, and 9% of its added value.



## Added Value

In years 2003 to 2007, added value in EEI increased the most among all industries in Slovakia – it had more than doubled. .

It reached EUR **1,167 million in 2011** when increased by 15% comparing to 2010. The further growth of the EEI added value is expected to slow down as most of the actions that companies could make to produce more effectively already took place. Some of the largest companies reduced supplies from external resources and took over their agenda. For example Samsung LCD Slovakia implemented new technologies what caused its supplier Hansol shutdown the whole plant or centralization of Foxconn factory actions that made some of their suppliers redundant.



## Employment

In 2008, companies in EEI employed over 50 thousand people. After the crises struck, seven thousand jobs were erased and employment dropped by 1,5% in 2011 as well. Two major players Samsung in Galanta and Foxconn in Nitra, switched to single-shift operation line and number of employees dropped from over 4 000 to 2 000. Despite the downsizing, EEI is still **large employer**, with 11% of available workforce in Slovak industry, i.e. 41 thousand people. When adding the manufacturers of cable bundles (statistically registered in the manufacturing of motor vehicles and accessories), the more accurate number would be close to **60 thousand people working directly and indirectly in EEI**.

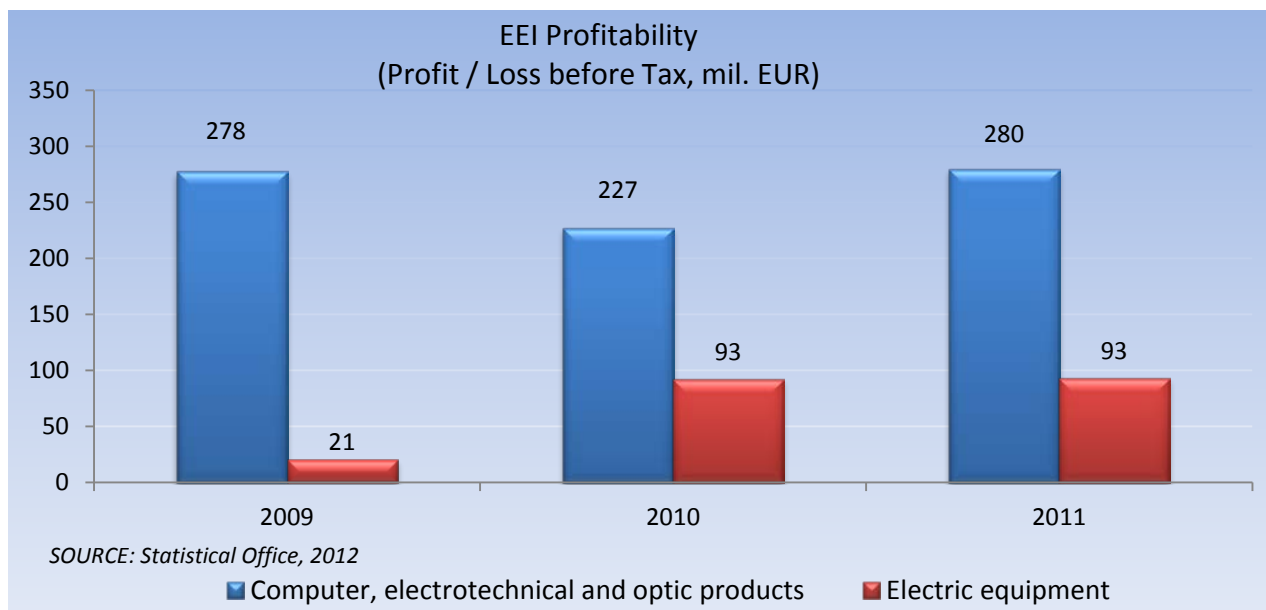
**Average salary in EEI increased by 5,2%, to EUR 846 in 2012.** Salaries increased in reaction to the downsizing especially less qualified workforce with lower salaries. Therefore, real growth of wages in EEI did not take place and wages are about national industry average EUR 857 in 2012.

Crisis has accelerated gradual relocation of simple manual production from Slovakia to cheaper locations. Most of the expanding and new plants in EEI already represent production with higher added value.

## Profitability

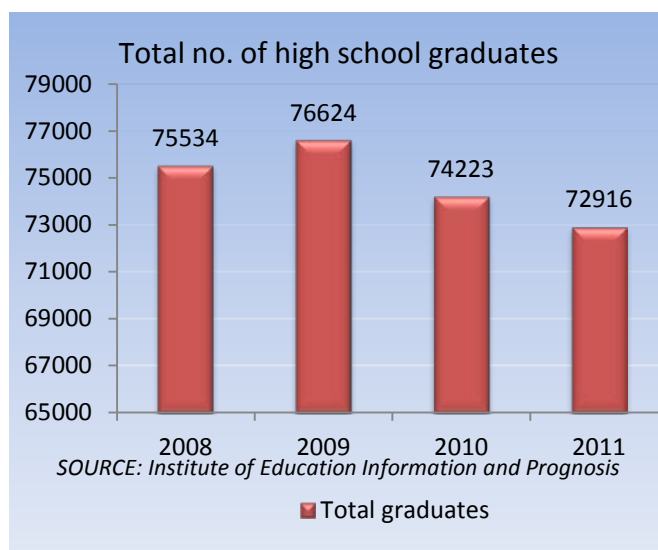
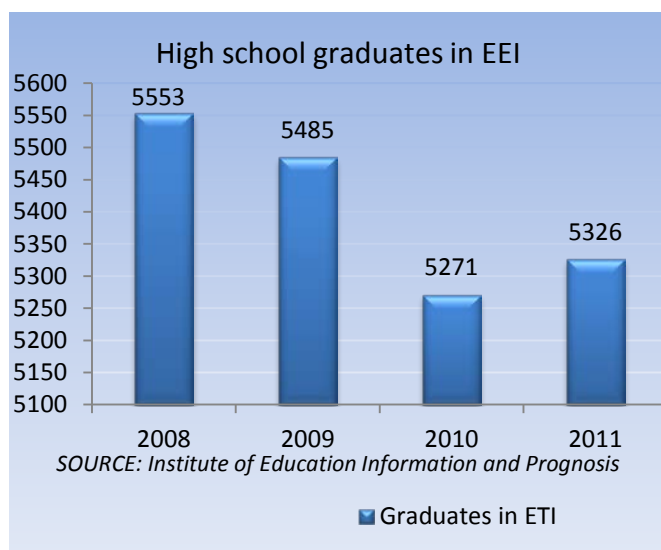
In terms of profitability, 2011 was year of consolidation on market of computer products. Years before were influenced by price war that had cut profits by 22% (for example Samsung profits went down by half) and now the profits are reaching same amounts as before. On the other hand electric **equipment grew largely** and it pulled the whole EEI forward. In this field is again visible effort of companies to try to find potential resources on their own.

There are about 25% of all companies that did not generate positive numbers at all, but most of them are subsidiaries of larger foreign companies and internal concern price setting usually only calculates with minimum profit margin of manufacturing plants.



## Education in Electrical Engineering

Cooperation of EEI producers and universities in the field of education and R&D has growing tendency. For example, Siemens and Alcatel have long term cooperation with the Slovak University of Technology in Bratislava. Magneti Marelli with the Technical University of Košice, Emerson with University of Žilina and Trenčín. Talented student of universities have opportunity to attend **internships** and later on, to become a full-time employees.



There are over 40 secondary and vocational schools with specialization on electrical engineering in Slovakia.

List of secondary school and no. of students in the field of electrical engineering and related studies:

Name of the school	Region of	Location	No. of students
Electrical engineering SOŠ Frassatiho	Bratislava	Bratislava-Staré Mesto, Vazovova 12	191
Electrical engineering SPŠ	Bratislava	Bratislava-Staré Mesto, Zochova 9	386
SOŠ	Bratislava	Bratislava-Ružinov, Ivanská cesta 21	445
SOŠ	Bratislava	Bratislava-Rača, Na pántoch 7	81
Electrical engineering SOŠ	Bratislava	Bratislava-Vajnory, Rybníčná 59	197
SOŠ	Bratislava	Bratislava-Devínska Nová, J. Jonáša 5	248
Electrical engineering SPŠ	Bratislava	Bratislava-Dúbravka, Karola Adlera 5	228
SPŠ	Banská Bystrica	Banská Bystrica, Hurbanova 6	543
SOŠ	Banská Bystrica	Banská Bystrica, Školská 7	884
Technical SOŠ	Banská Bystrica	Žiar nad Hronom, Dr. Janského 10	327
Electrical engineering SPŠ	Košice	Košice-Sever, Komenského 44	592
Railway SOU	Košice	Košice-Staré Mesto, Palackého 14	448
SOŠ	Košice	Košice-Šaca, Učňovská 5	412
Automotive SOŠ	Košice	Košice-Juh, Moldavská cesta 2	659
Technical SOŠ	Košice	Michalovce, Partizánska 1	1114
SOŠ	Košice	Rožňava, Hviezdoslavova 5	421
Mechanical engineering SPŠ	Košice	Spišská Nová Ves, Hviezdoslavova 6	368
Engineering SOŠ	Košice	Spišská Nová Ves, Markušovská cesta 4	775
SOŠ	Nitra	Komárno, Bratislavská cesta 10	264
SOŠ	Nitra	Komárno, Petófiho 2	560
SOŠ	Nitra	Levice, F. Hečku 25	351
Technical SOŠ	Nitra	Tlmače, Kozmálovská cesta 9	286
SOŠ polytechnic	Nitra	Nitra, Dvorčianska 629	400
SPŠ	Nitra	Nitra, Fraňa Kráľa 20	333
SOŠ	Nitra	Vráble, Ul. 1. mája 500	185
SŠ - SPŠE S. A. Jedlika	Nitra	Nové Zámky, Komárňanská 28	857
SPŠ	Nitra	Štúrovo, Svätého Štefana 81	200
Technical SOŠ	Nitra	Šurany, Nitrianska 61	245
SPŠ	Nitra	Šaľa, Nivy 2	531
SOŠ	Nitra	Zlaté Moravce, Slov.národ.povstania 2	425
SPŠ	Prešov	Bardejov, Komenského 5	415
Technical SOŠ	Prešov	Humenné, Družstevná 1737	371
SPŠ	Prešov	Poprad, Mnoheľova 828	595
Electrical engineering SOŠ	Prešov	Poprad - Matejovce, Hlavná 1400/1	269
SOŠ of Transport	Prešov	Prešov, Konštantínova 2	398
Electrical engineering SPŠ	Prešov	Prešov, Plzenská 1	587
SOŠ	Prešov	Sabinov, SNP 16	318
SPŠ	Prešov	Snina, Partizánska 1059	339
Technical SOŠ	Prešov	Stará Ľubovňa, Levočská 40	278
Electrical engineering SOŠ	Prešov	Stropkov, Hviezdoslavova 44	162
SOŠ	Trenčín	Bánovce nad Bebravou, Farská 7	348
SOŠ Juraja Ribaya	Trenčín	Bánovce nad Bebravou, Partizánska 76	434
SPŠ	Trenčín	Dubnica nad Váhom, Obrancov mieru 1	567
SOŠ	Trenčín	Dubnica nad Váhom, Štúrova 1388/23	577
SPŠ	Trenčín	Myjava, SNP 413/8	357
SOŠ	Trenčín	Nové Mesto nad Váhom, Bzinská 11	350
SOŠ	Trenčín	Stará Turá, Športová 675	282
SOŠ of Engineering	Trenčín	Považská Bystrica, Športovcov 341/2	550
SOŠ	Trenčín	Handlová, Lipová 8	798
SOŠ	Trenčín	Púchov, Terézie Vansovej 1054/45	116
SOŠ	Trenčín	Trenčín, Pod Sokolice 14	233
Electrical engineering SPŠ	Trnava	Piešťany, Nám. SNP 8	408
Technical SOŠ	Trnava	Piešťany, Nová 5245/9	266

Electrical engineering SOŠ	Trnava	Gbely, Učňovská 700/6	146
SPŠ	Trnava	Trnava, Komenského 1	587
Electrical engineering SOŠ	Trnava	Trnava, Sibírska 1	670
Technical SOŠ	Žilina	Čadca, Okružná 693	597
SPŠ	Žilina	Kysucké Nové Mesto, Nábřežná 1325	737
SOŠ of Engineering	Žilina	Kysucké Nové Mesto, Športová 1326	505
Electrical engineering SOŠ	Žilina	Liptovský Hrádok, Celiny 536	378
SOŠ mechanical engineering	Žilina	Martin, Červenej armády 25	831
SPŠ	Žilina	Martin, L. Novomeského 5/24	327
SOŠ of Transportation	Žilina	Martin-Priekopa, Zelená 2	403
SOŠ tech.	Žilina	Nižná, Hattalova 471	668
SPŠ	Žilina	Tvrdošín, Sídl. Medvedzie I. 133/1	525
Electrical engineering SOŠ	Žilina	Žilina, Komenského 50	576
Transportation Academy	Žilina	Žilina, Rosinská cesta 2	748
<b>Total</b>			<b>29672</b>

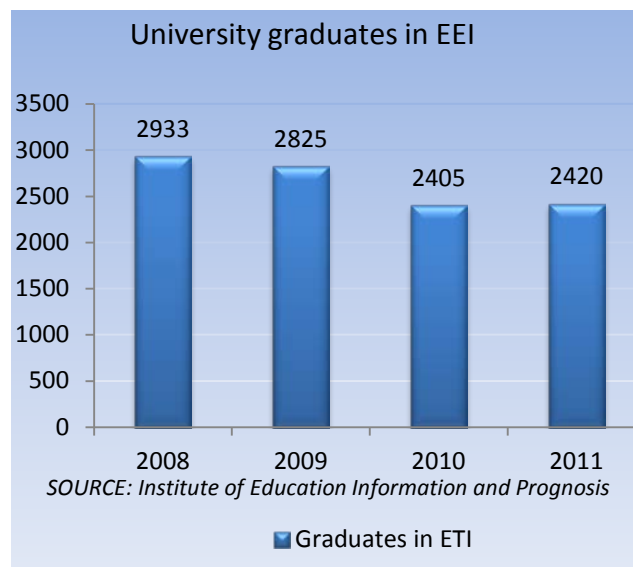
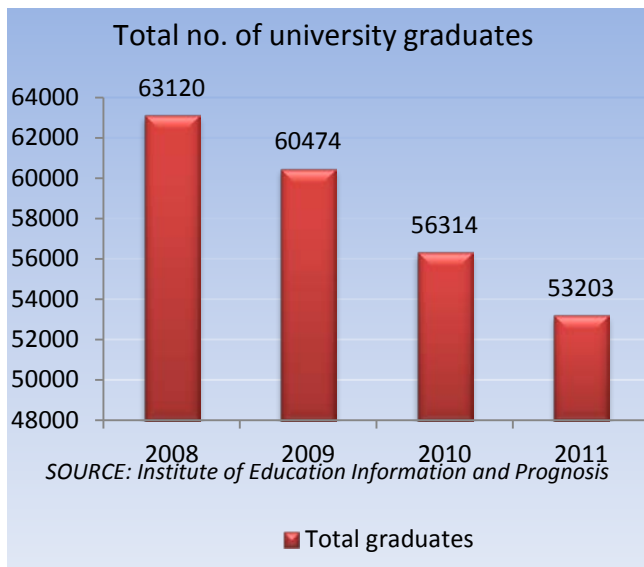
Source: Institute of Education Information and Prognosis

Abbreviations: SŠ- secondary school, SOŠ- Secondary vocational school, SPŠ- Secondary industrial school,

Apart from secondary schools, also universities are focusing on EEI and providing bachelor, engineer, master and doctoral level of studies.

List of universities and no. of students in the field of electrical engineering and related studies:

Faculty / university	Graduates	Students of I and II degree	Students of doctoral studies
Faculty of Informatics and Information Technologies STU	296	1128	57
Faculty of Mechanical Engineering STU	551	1705	146
Faculty of Material Sciences and Technology STU	1292	3235	152
Faculty of Electrical Engineering and Information Technology STU	709	2387	307
<b>Slovak University of Technology in Bratislava (STU)</b>	<b>2848</b>	<b>8455</b>	<b>662</b>
Faculty of Manufacturing Technologies TU	498	1245	48
Faculty of Mechanical Engineering TU	362	2302	148
Faculty of Electrical Engineering and Informatics TU	1091	2445	153
Faculty of Aeronautics TU	497	1025	36
<b>Technical University of Košice (TU)</b>	<b>2448</b>	<b>7017</b>	<b>385</b>
Faculty of Mechanical Engineering ŽU	362	1295	142
Faculty of Electrical Engineering ŽU	460	1537	82
Faculty of Management Science and Informatics ŽU	320	1402	52
Faculty of Special Engineering ŽU	328	1066	43
<b>University of Žilina (ŽU)</b>	<b>1470</b>	<b>5300</b>	<b>319</b>
Faculty of Special Engineering TnUAD	203	585	28
Faculty of Industrial Technologies TnUAD	113	348	35
<b>University of Trenčín (TnUAD)</b>	<b>316</b>	<b>933</b>	<b>63</b>
<b>Summary for the SR</b>	<b>7082</b>	<b>21705</b>	<b>1429</b>



## SWOT Analyses of EEI in Slovakia

### Strengths

- skilled but still relatively cheap workforce comparing to other EU countries
- EEI has tradition, knowledge & experience base exists
- disposable existing industrial infrastructure
- elimination of over-employment and productivity growth
- large FDIs delivered strong multiplier effect open, fully integrated and large EU market
- tight link of EEI to Slovak strong automotive industry automation in automotive industry provides opportunity for hardware and software suppliers.

### Weaknesses

- insufficient links between R&D and production high proportion of the production of low value-added
- high share of low value-added production
- high energy, raw materials and import intensity of production
- lack of investment capital of domestic companies.
- insufficient use of domestic raw materials and supplies

### Opportunities

- entry of new investors into existing production facilities
- strong and dynamic automotive sector provides opportunities for EEI manufactures
- moving of intensive manufacturing, development and customer support to Slovak plants
- available potential in research and development
- liberalization of energy market as well as building energetic infrastructure.

### Threats

- relocation of existing facilities to third countries with even lower labor costs possible labor shortage in the investment attractive regions - Western Slovakia.
- lower level of territorial and qualifying labor mobility
- high dependence of the economy on the external environment and cycles

SOURCE: Ministry of Economy of the Slovak republic



## Top EEI companies in Slovakia

Most EEI companies, are concentrated in Western Slovakia. Clusters concentrating EEI production of foreign investors are located mostly in **Western Slovakia** – Galanta (Samsung Electronics Slovakia), Nitra (Foxconn Slovakia, Osram), Trenčín (Halla Climate Control, Emerson, AU optronics), but there also are a few places with strong electrotechnical presence in the **East of Slovakia**: Poprad (Whirlpool Slovakia), Kechnec (Magnet Marelli Electronic Systems, IEE Sensing Slovakia), Krompachy (Panasonic AVC Networks), Michalovce (BSH Drives and Pumps).



Largest EEI companies in Slovakia by revenues (EUR mil.):

NO	Company	2010	2011
1.	Samsung Electronics Slovakia, s.r.o., Galanta	3247	3167
2.	Foxconn Slovakia, s.r.o., Nitra	1426	1042
3.	Samsung Electronics LCD Slovakia, s.r.o. Voderady	362	625
4.	Whirlpool Slovakia, s.r.o., Bratislava	283	264
5.	Emerson, a.s., Nové Mesto nad Váhom	184	248
6.	Universal Media Corporation (Slovakia), s.r.o., Bratislava	160	236
7.	BSH Drives and Pumps, s.r.o., Michalovce	169	201
8.	Halla Climate Control Slovakia, s.r.o., Ilava	171	201
9.	Panasonic AVC Networks Slovakia, s.r.o., Krompachy	146	124
10.	Osram, a.s., Nové Zámky	109	120
11.	Delta Electronics (Slovakia), s.r.o., Dubnica nad Váhom	140	116
12.	Panasonic Industrial Devices Slovakia, s.r.o., Trstená	103	111
13.	Elster, s.r.o., Stará Turá	100	105
14.	PPA Controll, a.s. Bratislava	60	102
15.	Semikron, s.r.o., Vrbové	75	91
16.	Magnet Marelli Slovakia, s.r.o., Bratislava	72	87
17.	Askoll Slovakia, s.r.o., Nové Mesto nad Váhom	82	80
18.	ZKW Slovakia, s.r.o., Krušovce	49	70
19.	OMS, s.r.o., Dojč	59	69
20.	Leoni Slovakia, s.r.o., Nová Dubnica	55	62

Source: TREND Analyses

**Samsung Electronics Slovakia** has been the largest EEI company in Slovakia for several years. From production commissioning in 2002 until 2007, its revenues were growing sharply to EUR 3,4 billion. In 2009, they dropped slightly to 3,17 billion, in 2010 reached 3,24 billion and in 2011 decreased to 3,16 billion. However, the plant improved its profitability and added value by introducing new products in last few years and implementing deeper automatization in production line which means more robots and less people. This is one of reasons why number of employees dropped significantly by 10% in 2011. Samsung has announced long time expected initiatives in R&D field and the management is requesting government financial support in total of EUR 28 million. Advantage in time of crisis is, that Samsung in Galanta has its sister company located near its own in Voderady where LCD modules are being finalized and afterwards they are manufactured into complete TV in Galanta. **Samsung in Voderady** reached noticeable increase of revenues despite the fact that number of employees decreased by 17%, this is because structural changes within company resulted into fact, that Voderady's Samsung no longer manufactures LCD panels but only completes those imported from Korea. Despite problems that Samsung is currently facing, it still remains the most important player in EEI which covers one third of revenues among whole industry.

**Whirlpool Slovakia**, American washing machines manufacturer has been present in Slovakia for twenty one years. In all those years, the Poprad plant became leading European manufacturer of Whirlpool and other affiliated brands of washing machines. In terms of accounting reporting accumulated loss in excess of EUR almost 8 million and capacity used to two thirds, it does not seem like an EEI leader. However, it is one of the examples of internal company accounting "exporting" profits from the Slovak factory as part of optimisation within the entire concern.

**Foxconn Slovakia** is the former plant of Japanese Sony, which left it in 2008 as the largest and most modern group TV sets plant in the world. After the commissioning of the Nitra plant, the company increased manufacturing capacity from 2 to 4 million of manufactured TV sets per year in 2009. Year 2011 negatively influenced whole plant – orders went down by one third as well as amount of TV produced from 2,6 million in 2010 by half million in 2011. Number of employees decreased from four thousand in 2008 to 1300 in 2012 and for the first time since Hon Hai Precision Industry bought company from Sony corporation in 2010, the production was limited to only one shift a day. Foxconn Slovakia is now part of Hon Hai Precision Industry which is one of world largest EEI companies with portfolio including brands such as Apple, Samsung, Toshiba or Dell and employing 1,2 million people around the world.

Japanese Panasonic has two daughter companies in Slovakia. Thereby, both hold an important position in the Slovak EEI industry. **Panasonic AVC Networks Slovakia** in Krompachy manufactures DVD players and recorders, Blue-ray and also 3D Blue ray players and Blue-ray recorders. Both Panasonic subsidiaries are experiencing problems due their mother company crisis – profit is in red numbers and it dropped from EUR 720 million to negative EUR 7,47 billion in one year, company is now planning to reduce number of staff by 17 000 in next few years among 18 000 of people already dismissed worldwide. Presently, Panasonic AVC Networks Slovakia employs 900 people. The second Slovak daughter of the concern, smaller in terms of revenues, but larger in terms of staff count, is based in Trstená in Orava. **Panasonic Electronic Devices Slovakia** has two manufacturing plants in Trstená and Stará Ľubovňa, where it manufactures control cards, sources, tuners, chargers, remote controls, as well as iPod adapters, switch elements for steering wheels and speakers for cars. As of 2011, it employed 1,290 people on the average. Executive officers had announced EUR 1,5 million new technology investment plan in 2011 that is setting direction more into automotive industry as a supplier and new production plant will be build near Volkswagen Bratislava.

The largest EEI company in Eastern Slovakia is based in Michalovce. **BSH Drives and Pumps** manufactures electric engines for household appliances and is the largest supplier of drives for BSH group including Bosch and Siemens, as well as Gaggenau, Neff, Thermador, Ufesa, Viva and Constructa. Up to 85% of its production head for concern factories in Poland, followed by Germany, Spain, Turkey, Italy and USA. In 2011, over 7 million electric engines were produced in Michalovce. In Michalovce, BSH Drives and Pumps employs over 829 people with 150 agency employees during the high season.

American based electrical engineering company **Emerson** is presented in Slovakia over 20 years. Company has a plant in the former VUMA (Výskumný ústav mechanizácie a automatizácie) complex in Nové Mesto nad Váhom where it operates seven different sections providing various services and manufactures different products for industrial uses or individual consumers. Portfolio includes industrial air-conditioning systems, energetic solutions for information technologies market or producing electrical control devices. Revenues of this company increased in 2011 significantly by over one third to EUR 248 million and company is planning to expand production line and increase number of currently 1360 people employed.

*SOURCE: Ministry of Economy of the Slovak republic*

## Useful contacts

- The Association of Electrotechnical Industry of the Slovak Republic  
Kominárska 2/4  
831 04 Bratislava  
[www.zep.sk](http://www.zep.sk)
- Ministry of Economy of the Slovak Republic  
Mierová 19  
827 15 Bratislava 212  
[www.economy.gov.sk](http://www.economy.gov.sk)

**Slovak Investment  
and Trade Development Agency**

Trnavska cesta 100

821 01 Bratislava

Slovak Republic

Tel: +421 2 58 260 100

Fax: +421 2 58 260 109

E-mail: [invest@sario.sk](mailto:invest@sario.sk)



SARIO is „The Best European Investment Promotion Agency  
in High Tech for year 2007“

**www.sario.sk**