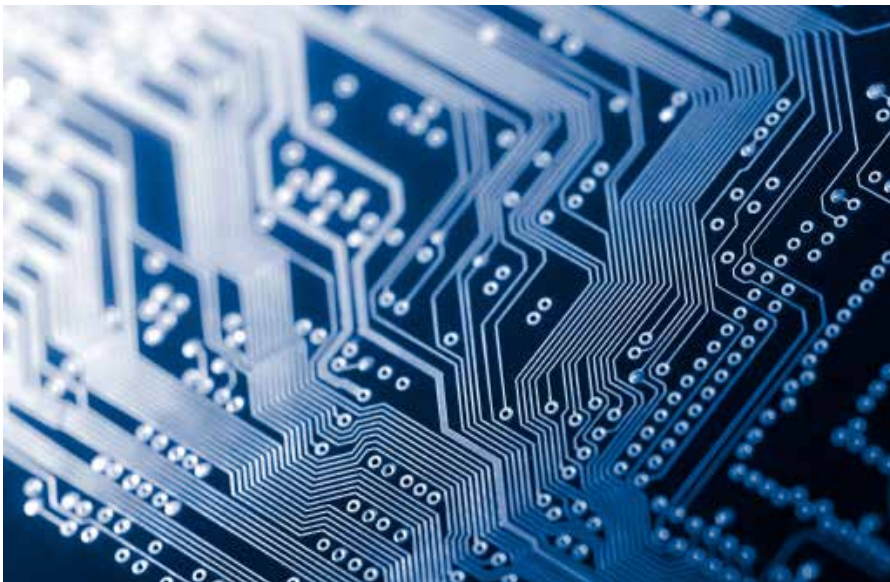


Electronics & Electrical Components Industry in **SLOVAKIA**



Electronics & Electrical Components Industry in Slovakia

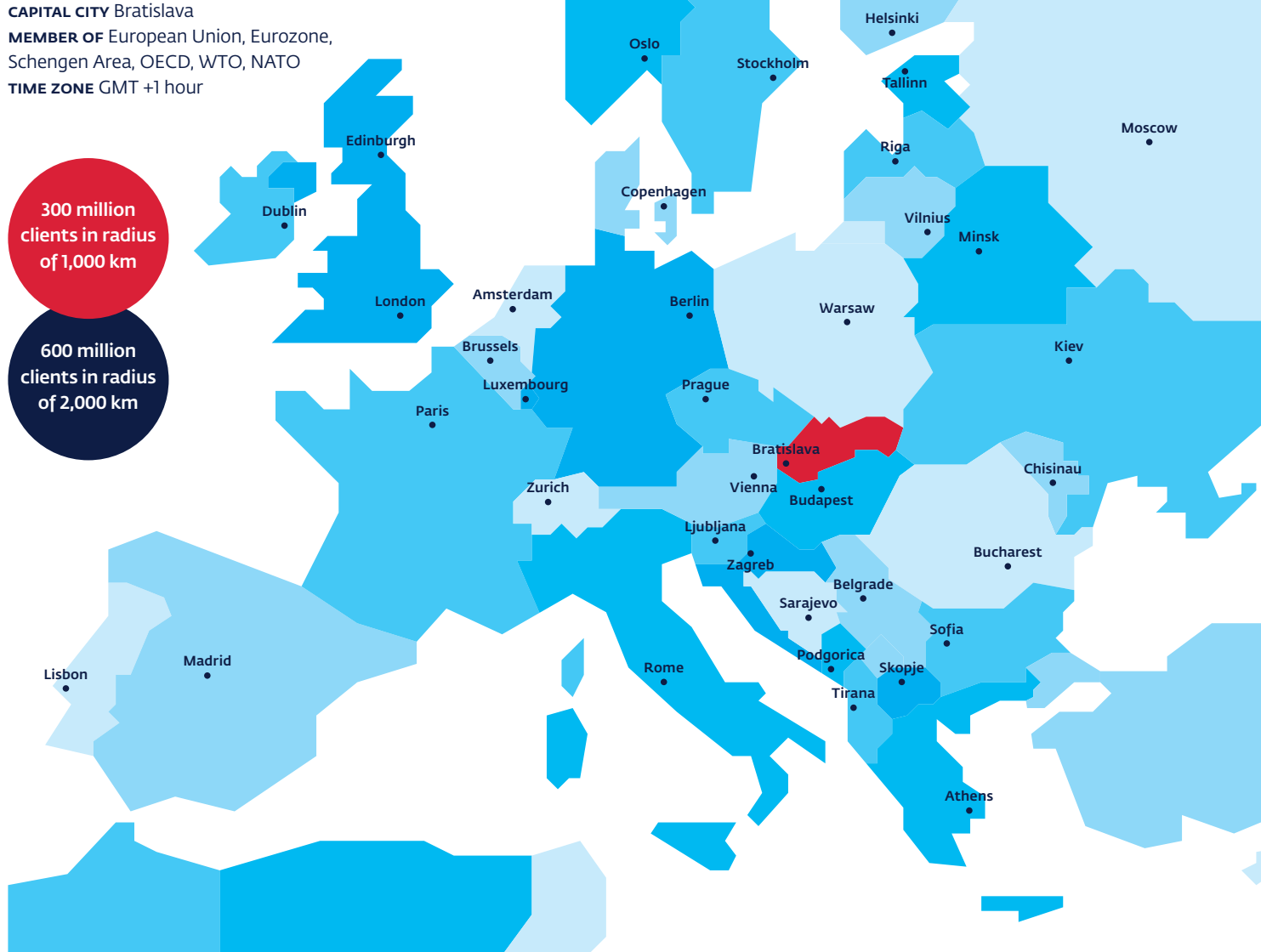
This publication is designed to introduce Slovakia's dynamically growing electronics & electrical components industry (EECI). Herein introduced facts & figures serve to demonstrate sector strengths and to illustrate why Slovakia is an ideal location for doing business in this industry.



TOTAL AREA 49,035 km²
POPULATION 5.4 million
CAPITAL CITY Bratislava
MEMBER OF European Union, Eurozone, Schengen Area, OECD, WTO, NATO
TIME ZONE GMT +1 hour

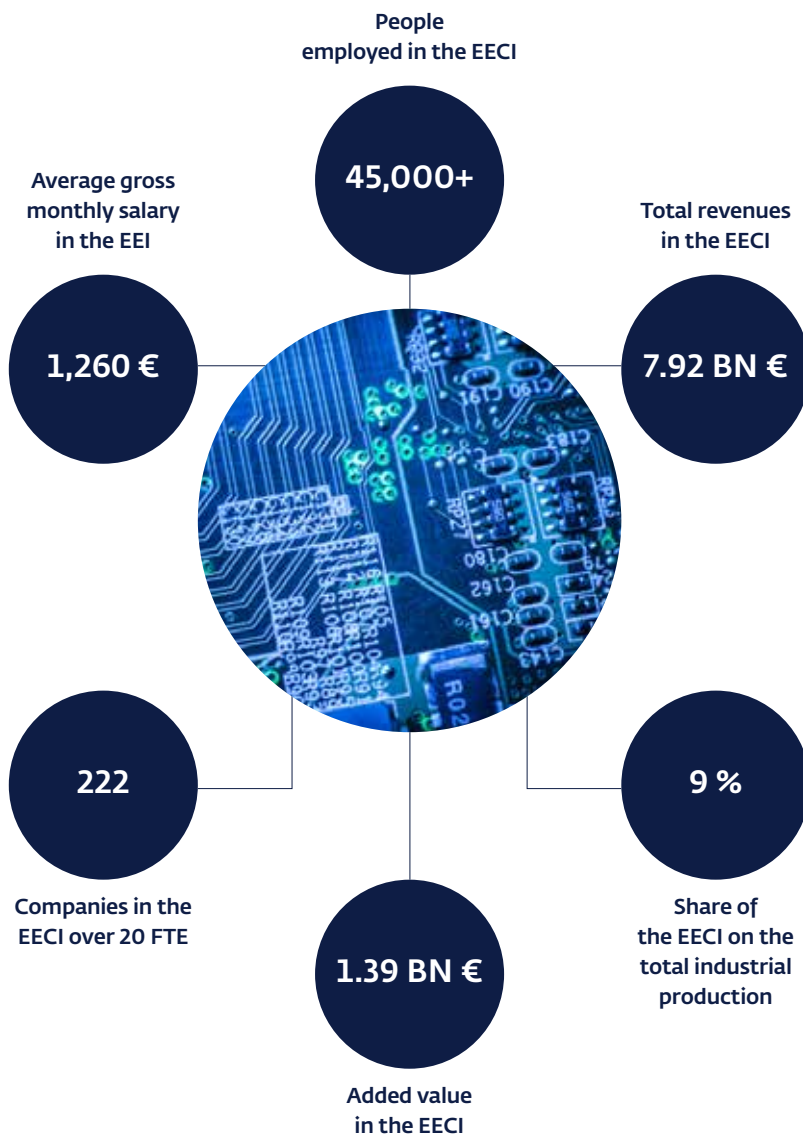
300 million clients in radius of 1,000 km

600 million clients in radius of 2,000 km



Overview of the Electronics & Electrical Components Industry in Slovakia

The Electronics & Electrical Components Industry (EECI) is considered as one of the main pillars of Slovak economy. Current situation on the market reflects both – traditional electronics manufacturing (power generators, telephones, radios, etc.) and new trends especially connected to the growing automotive industry in Slovakia (electric motors, microelectronics, sensors). Ongoing shift towards e-mobility is creating whole new opportunities for all electrical components suppliers. The EECI is one of the strongest contributors to the country's GDP, plays a significant role in the industrial output and is also one of the biggest employers in the country.



*Only companies with more than 20 employees included.
Source: Statistical Office of the Slovak Republic, Yearbook of Industry of the SR 2020



Top 10 Reasons to Invest in Slovakia

- 1 Strategic location in Europe with great export potential
- 2 Political & economic stability
- 3 Euro currency as one of a few in the CEE
- 4 CEE leader in labour productivity
- 5 Cost-effective, skilled and educated labour force
- 6 Excellent multilingual skills
- 7 One of the most open economies in the world
- 8 Great potential for R&D and innovation
- 9 Developed & steadily growing infrastructure network
- 10 Attractive investment incentives

When History Creates Strong Companies — Over 120 Years of Experience

- 1893 — **Helios** — telephones, dynamos, motors (the first electronics company established in Žilina)
- 1902 — **BEZ Transformátory** — transformers (company still in operation)
- 1947 — **Křížík Prešov** — electricity meters (currently Křížík GBI)
- 1949 — **SEZ Krompachy** — switches, sockets, circuit breaks (still in operation)
- 1950 — **Tatramat Poprad** — boilers, ovens (still in operation)
- 1950 — **Tesla Liptovský Hrádok** — telecommunication devices (still in operation)
- 1955 — **Služba Nitra** — fuse boxes, lighting for automotive industry (still in operation)
- 1960 — **Tesla Stropkov** — telephones, home communication systems (still in operation)
- 1975 — **MEZ Michalovce** — electric motors (currently BSH Drives & Pumps)

Example of Successful Transformation — BEZ Transformátory

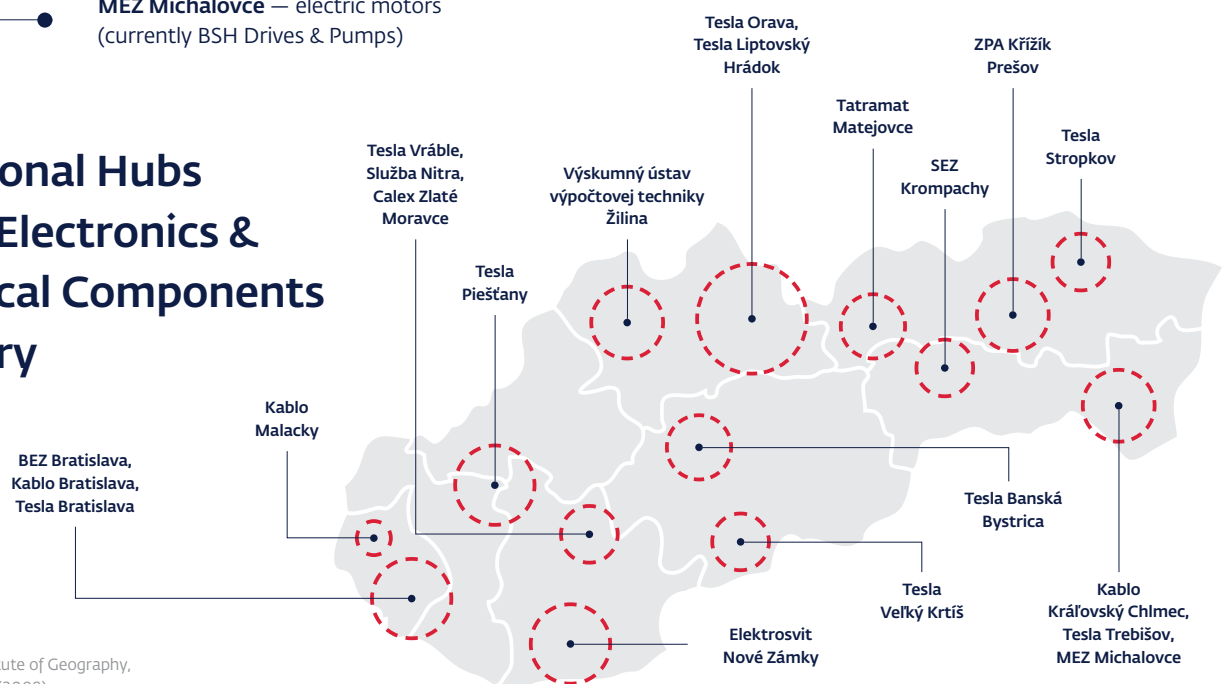


Traditional labour intensive production in the 60s



Current production using modern technologies

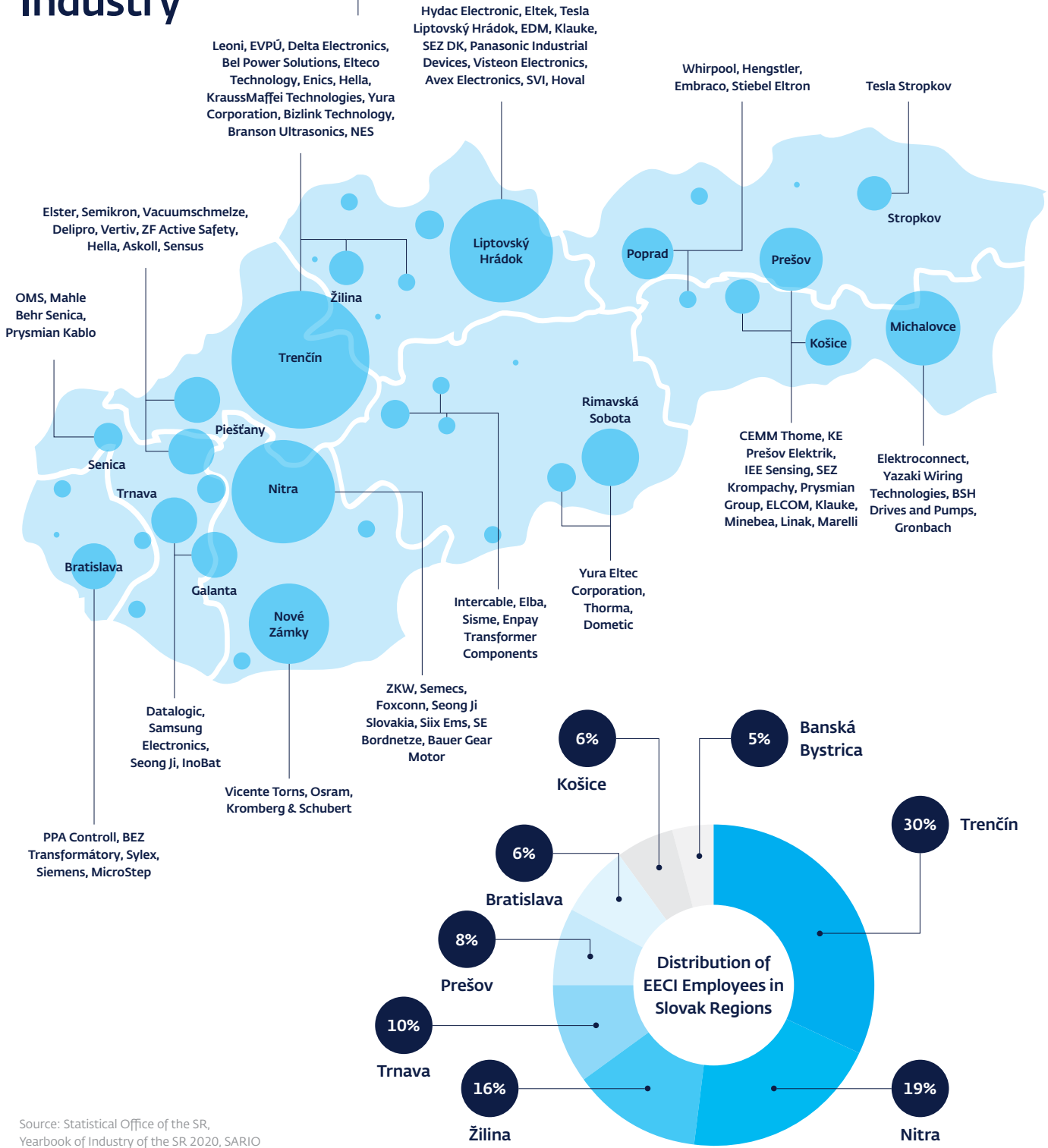
Traditional Hubs of the Electronics & Electrical Components Industry



Source: UPJS, Institute of Geography, Faculty of Science (2008)

Today's Regional Distribution of the Electronics & Electrical Components Industry

Electrical engineering companies are located across whole Slovakia. Some regions have had historically a strong tradition in this sector, others have been shaped by new global players and their suppliers coming to the region (e.g. Minebea in Košice). Significant number of EECI companies are connected to the automotive industry supplier network.



Source: Statistical Office of the SR, Yearbook of Industry of the SR 2020, SARJO

Electronics & Electrical Components Industry in Line with the Automotive Industry



Slovakia is the biggest car producer (per capita) in the world. Beside 4 OEMs in the country (Volkswagen, Kia, Stellantis, Jaguar Land Rover) a huge part of this success comes from more than 350 automotive suppliers.

The dominant position of the automotive industry shapes also the electronics & electrical components sector. In order to meet modern safety and fuel economy requirements, OEMs need to cooperate closely with their electronics suppliers. Thanks to this fact companies linked to car production record excellent results. As a result, some of the companies are able to achieve double-digit growth rates every year.

E-Mobility

Currently, growth of e-mobility sector has begun to fundamentally change the outlook of several key industries such as automotive and EECI.

Slovakia as a major world car manufacturer, is focusing on the technological transformation of the concerned industries. Therefore, the major efforts to transform Slovakia into the electromobility hub of the central Europe had been taken by both, public and private sectors. Some of the Slovak companies have already successfully adapted to these trends due to their high technology and innovation potential.



Source: SARIO

Examples of EECI Suppliers to Automotive

WIRING HARNESSES & ELECTRONIC COMPONENTS
Mahle Behr, Leoni, SE Bordnetze, Calearo, Yazaki, Kromberg & Schubert, Prettl Electrical Systems, JOHRAmont, Yura Eltec Corporation, TFC Cables Assemblies, KE Prešov Elektrik, CRT Electronic, Panasonic Industrial Devices, Mkem, SIIX EMS, Služba Nitra, MTA, CEMM THOME, IEE Sensing, Vacuumschmelze, ZF Active Safety, Visteon Electronics, Marelli, Intercable, Bizlink Technology, Robert Bosch Production, Elektroconnect

EXTERIOR & INTERIOR LIGHTS
OSRAM, SEC, CEMM THOME, Služba Nitra, ZKW, Hella Slovakia Lighting, Hella Innenleuchten Systeme

ANTENNAS
Calearo

Examples of Producers from the E-Mobility Sector



CHARGING STATIONS
MSM Group, Delta Electronics, GreenWay Infrastructure, ejoin



CAR BATTERY & BATTERY PARTS
Nemak, Panasonic Industrial Devices, U.S. Steel, Webasto Convertibles, Intercable

THE LARGEST ELECTRONICS & ELECTRICAL COMPONENTS INDUSTRY COMPANIES IN SLOVAKIA (BY REVENUES)

COMPANY NAME	COUNTRY OF ORIGIN	LOCATION	REVENUES (MIL. EUR)	NUMBER OF FTEs	CORE BUSINESS
Samsung Electronics Slovakia	South Korea	Galanta	1,256	782	LCD moduls and LED screens
Foxconn Slovakia	Taiwan	Nitra	1,004	1,410	LCD and OLED TVs and printed circuit boards
Panasonic Industrial Devices Slovakia	Japan	Trstená	268	1,897	control boards, chargers, speakers, sensors
Whirlpool Slovakia	USA	Poprad	253	1,231	household appliances
Hella Slovakia Lighting	Germany	Kočovce	250*	2,018*	lighting systems
ZKW Slovakia	Austria	Krušovce	226	2,193	headlights for cars, trucks, motorcycles
Visteon Electronics Slovakia	USA	Námestovo	221	588	electronic dashboards
Embraco Slovakia	Japan	Spišská Nová Ves	217	2,132	compressors for household appliances
Leoni Slovakia	Germany	Trenčín	181	2,259	whole cable systems, e-mobility development
Vertiv Slovakia	USA	Nové Mesto nad Váhom	173	1,126	air conditions and power systems
BSH Drives and Pumps	Germany	Michalovce	163	793	electric motors for household appliances
Prysmian Kablo	Italy	Veľké Leváre	131*	317*	optical fibers and telecommunication cables
Semikron	Germany	Vrbové	121	567	power semiconductor modules
Siemens	Germany	Bratislava	113	578	various electrical components
Elster	Germany	Stará Turá	98	621	electronic meters
Delta Electronics (Slovakia)	Taiwan	Dubnica nad Váhom	89	529	power supplies, rectifiers, inverters
ZF Active Safety Slovakia	Germany	Nové Mesto nad Váhom	88	465	automotive safety systems
Enics Slovakia	Switzerland	Nová Dubnica	87	577	printed circuit boards
OSRAM	Germany	Nové Zámky	68*	802*	light bulbs, special light sources and accessories
Datalogic Slovakia	Italy	Zavar	64	227	barcode scanners, printed circuit boards
KraussMaffei Technologies	Germany	Sučany	64	466	electrical cabinets, reactive processing machines
Vicente Tornis Slovakia	Spain	Veľké Kosihy	58	116	electrical wires
Eitek	Taiwan	Liptovský Hrádok	56	580	backup power source devices
Intercable	Italy	Kriváň	56	591	cable systems for automotive
Minebea Slovakia	Japan	Košice	45*	335*	electrical components for automotive
Hydac Electronic	Germany	Tvrdošín	43	361	electrical components for automotive
Dometic Slovakia	Sweden	Fifakovo	41	206	motorhome appliances

*Data for 2019 (last available)

Source: Finstat (2021), Financial statements of the particular companies (2020)

Qualified, Productive & Cost-Effective Labour Force

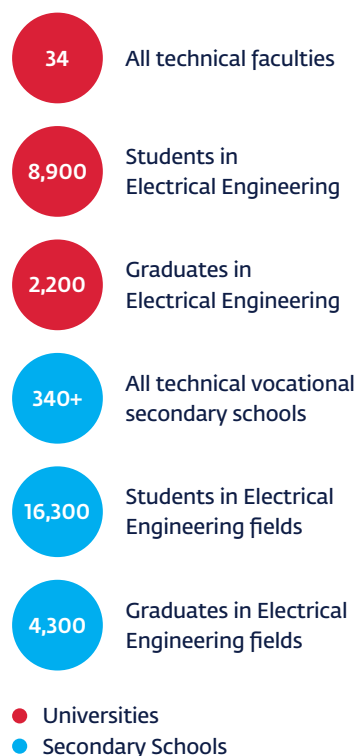
For investors active in electronics & electrical components industry, availability of skilled workforce is a key factor for location selection. Slovak labour force offers outstanding level of productivity and qualification, while still remaining cost-competitive on regional as well as European levels.

More than 1,000 companies and 8,400 students joined the dual education in 2020

DUAL EDUCATION

The Slovak Government has fully implemented a new dual education framework facilitating combination of theoretical education in schools and practical training in companies. The companies joining the new scheme have the advantage of not only benefiting from a prepared and qualified labor force, but also from the possibility to utilize a related tax relief and other financial benefits.

EECI Related Education in Slovakia



AVERAGE GROSS MONTHLY SALARY IN THE EECI (SELECTED POSITIONS/EUR)

POSITION		BRATISLAVA	TRNAVA	NITRA	TRENČÍN	ŽILINA	BANSKÁ BYSTRICA	KOŠICE	PREŠOV
CNC Operative	Min.	1,100	900	1,200	900	900	900	1000	950
	Max.	1,400	1,200	1,600	1,300	1,300	1,300	1,200	1,100
Electrical Operative	Min.	1,100	900	1,100	1,000	1,000	900	1,100	1,000
	Max.	1,700	1,400	1,600	1,400	1,400	1,300	1,400	1,300
Production Operative	Min.	900	850	900	850	850	850	850	800
	Max.	1,200	1,100	1,200	1,100	1,100	1,100	1,200	1,100
Electrical Design Engineer	Min.	1,400	1,400	1,200	1,300	1,200	1,200	1,400	1,200
	Max.	2,100	2,000	1,600	1,900	1,900	1,500	1,800	1,700
Production Manager	Min.	3,300	2,700	2,700	2,300	2,300	2,300	2,600	2,400
	Max.	4,500	4,000	4,000	3,600	3,600	3,300	3,700	3,500

Source: Institute of Education Information & Prognosis of Slovakia for the Academic Year 2019/2020, Grafton Slovakia, 2021

Growing R&D & Innovation Network

Highly qualified workforce at affordable costs, presence of technology cluster and established cooperation between companies and domestic universities motivate companies to establish their R&D divisions in Slovakia.

R&D SUCCESS STORIES IN ELECTRONICS & ELECTRICAL COMPONENTS INDUSTRY



OSRAM

Household & automotive lighting



LEONI

Cable harnesses & switches



ENICS

Circuit boards & related products



ELCOM

Cash registers & industrial PCs



MICROSTEP

Smart plasma cutting CNC machines



BSH Drives and Pumps

Electric motors and pumps

ECCI R&D PLATFORMS RUN BY THE UNIVERSITIES



TECHNICOM SCIENCE PARK Technical University of Košice

Science park focused on research of electrical engineering, automation and control systems.

Working on various projects:

- engineering and certification lab for innovation in electronics
- UWB sensor technologies
- design of electro-mechanical actuator systems



THE NATIONAL ROBOTICS CENTER Slovak University of Technology in Bratislava

Center focused on research, support and development of robotics.

Working on various projects:

- mobile and service robotics
- industrial and medical robotics
- intelligent control methods

Electronics & Electrical Components Industry Platform



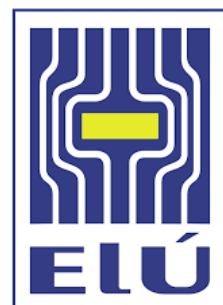
The Association of Electrotechnical Industry of the Slovak Republic (ZEP SR)

- headquartered in Bratislava
- established 1991
- brings together 100 companies in the fields of electrical engineering, electronics, information and communication technologies
- members employ more than 14 000 people

ZEP activities

The aims of the association include supporting research activities in Slovakia by networking companies with technical universities and help to enhance a mutual cooperation.

The Slovak Academy of Sciences



The Institute of Electrical Engineering is currently focused on:

- physics and technology at nanoscale
- III-V compound semiconductors
- microelectronic sensors and detectors
- applied superconductivity & much more

Investment Incentives

The primary goal of the investment incentives is to motivate investors to place their new projects in regions with higher unemployment and to attract projects with higher added value.

MAXIMUM REGIONAL INTENSITIES OF INVESTMENT INCENTIVES IN SLOVAKIA

- additional 10% for medium-sized enterprises
- additional 20% for small and micro-sized enterprises
- additional 10% for investment projects carried out in regions included in Just Transition Plan

INDUSTRIAL PRODUCTION

Minimum conditions (investment amount, number of newly created jobs and share of new technology) are subject to the unemployment rate in the selected district and forms of aid required.

If applying for income tax relief, the following criteria have to be met in regards to particular districts category:

- 3 mil. EUR and 60% share of new technology
- 1.5 mil. EUR and 50% share of new technology
- 0.75 mil. EUR and 40% share of new technology
- 0.1 mil. EUR and 30% share of new technology
- Expansion includes minimum increase in the production volume or turnover by at least 15%

Direct forms of aid are also available, different conditions apply.

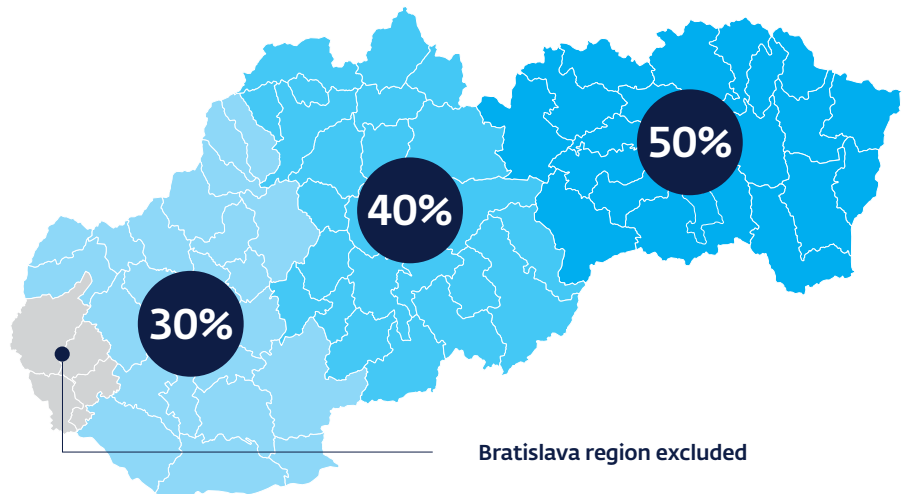
TECHNOLOGY CENTERS

- Minimum investment of 100 ths. EUR on fixed assets in all regions
- Minimum of 10 newly created jobs
- Minimum 1.7 fold of average salary in the district paid to new employees

SHARED SERVICES CENTERS

- Minimum of 25 newly created jobs
- Min 1.5 fold of average salary in the district paid to new employees

*In case of Technology centers or Shared Services Centers, conditions differ for projects from 'Priority areas'. Minimum conditions for SMEs are in principle lowered by half. Please contact us at invest@sario.sk for more information.



ELIGIBLE PROJECTS

The Act on Investment Incentives divides the projects, which may be supported, into four categories:

- Industrial production
- Technology Centers
- Combined Projects of Industrial Production and Technology Center
- Shared Services Centers

ELIGIBLE COSTS

- Costs of land acquisition
- Costs of buildings acquisition & construction
- Costs of new technological equipment and machinery acquisition
- Intangible long-term assets — licences, patents, etc.
- Rent of new land/building
- or**
- Total wage costs of all new employees calculated over a period of 2 years

FORMS OF INVESTMENT INCENTIVES

- Corporate income tax relief
- Cash grant
- Contributions for the newly created jobs
- Rent/Sale of real estate for a discounted price

Positive regional contribution of a new investment projects shall be concluded based on these categories — investment location, number of jobs created, average gross monthly salary of new employees, expected added value and possible qualification of a project respecting definition of a priority area.





AIM INVESTMENT AWARDS DUBAI 2017

CEE & TURKEY REGION
Best Investment Promotion Agency in 2016



SARIO Profile

Slovak Investment & Trade Development Agency (SARIO) is a governmental investment and trade promotion agency of the Slovak Republic. The agency was established in 2001 and it operates under the Slovak Ministry of Economy.

01 INVESTMENT SERVICES

FOR POTENTIAL INVESTORS

- investment environment overview
- assistance with investment projects implementation
- starting a business consultancy
- sector and regional analyses
- investment incentives consultancy
- site location & suitable real estate consultancy

FOR ESTABLISHED INVESTORS

- identification of local suppliers, service providers
- assistance with expansion preparation and execution
- assistance with Industry 4.0 solutions and R&D implementation

02 FOREIGN TRADE SERVICES

IF YOU ARE LOOKING FOR

- Slovak supplier or sub-contractor
- information about Slovak export/trade environment
- sourcing opportunities
- forming a joint venture, production cooperation or other forms of partnership with a Slovak partner

SERVICES FOR EXPORTERS

- information on foreign territories
- customized search for foreign partners
- on-line database of business opportunities
- export Training Centre
- subcontracting assistance

03 INNOVATION SOURCING

- matching local tech companies with the operations of large companies that plan to implement innovative solutions to streamline and optimize their processes
- focused mostly on Industry 4.0 solutions such as digitalization, intelligent automation, and robotics as well as advanced and complex IT solutions for various industries
- based on a database of more than 300 local tech companies which is constantly updated and expanded

04 DIVERSIFICATION ACTIVITIES

- aimed at supporting diversification of the Slovak economy towards high-tech areas with significant growth potential
- systematic building of a knowledge base about these sectors with an aim of increasing their visibility and attractiveness for prospective investors
- focused mainly on such sectors as space, aviation, smart & green mobility, medtech, greentech, gaming, smart cities, data centers, and the hydrogen economy

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