

WELCOME!



CLEANTECH INNOVATION AND BUSINESS EXCHANGE SLOVAKIA-SWITZERLAND

20th May 2022 | Swiss National Museum, Zurich



Stadt Winterthur 


SMARTCITY
ALLIANCE

Zürcher Hochschule
für Angewandte Wissenschaften

zhaw

Transformation to Swiss Smart Cities and best practices

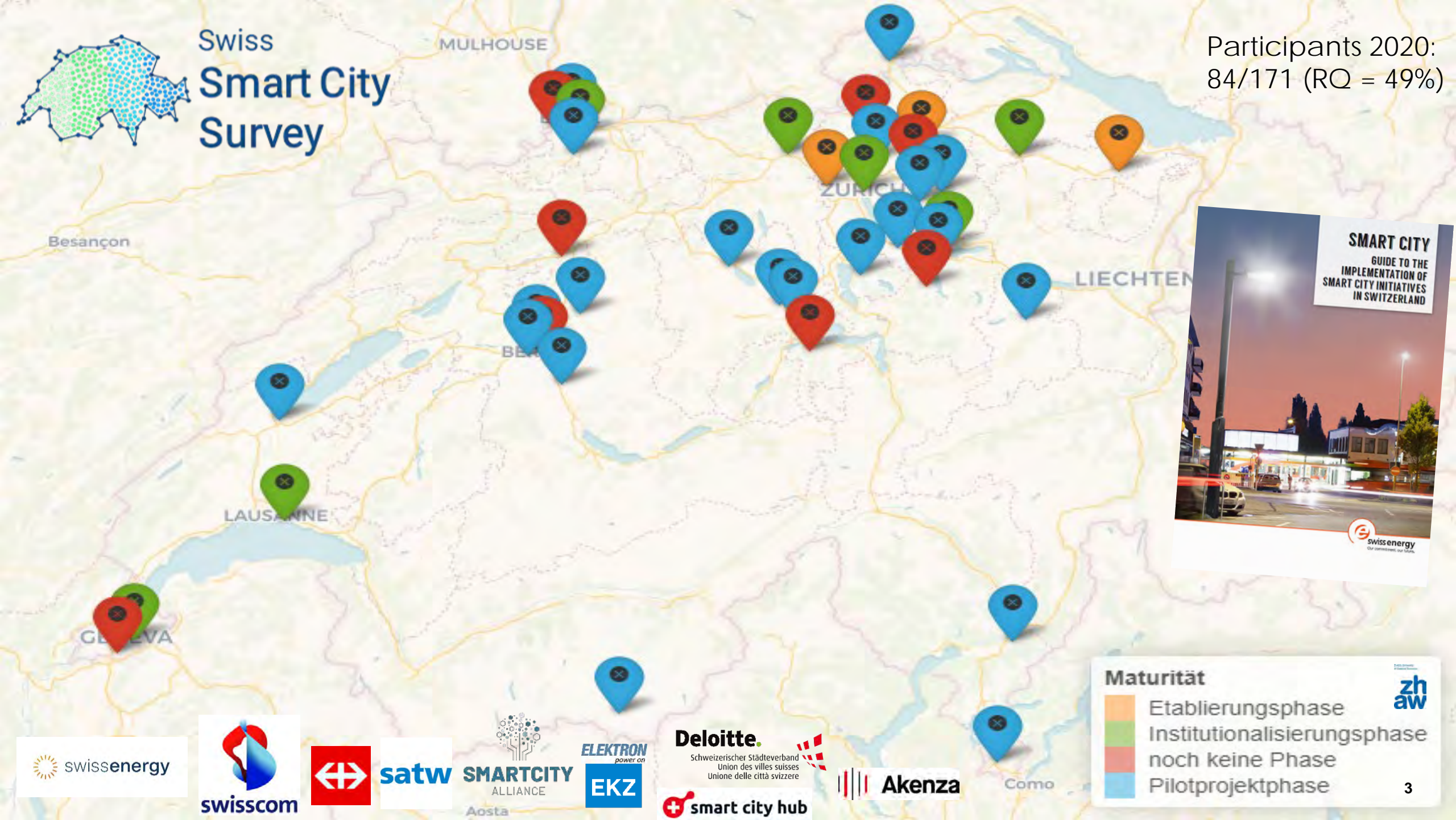
ZHAW Smart Cities & Regions, Winterthur
Prof. Vicente Carabias, cahu@zhaw.ch
Zurich, 20th May 2022

 **smart city hub**



Swiss Smart City Survey

Participants 2020:
84/171 (RQ = 49%)



Maturität

Orange	Etablierungsphase
Green	Institutionalisierungsphase
Red	noch keine Phase
Blue	Pilotprojektphase

zhaw

Smart City KTT 2022+

Stadt Winterthur



Swiss Smart City Survey 2.0



satw

EKZ

Schweizerischer Städteverband
Union des villes suisses
Unione delle città svizzere



ELEKTRON
power on

Deloitte.

Swiss Smart Cities Booster



Co-Creating Smart Solutions for Smart Communities, Cities and Regions



CAS at ZHAW



Sustainable Smart Cities & Regions – Data, Energy and Mobility

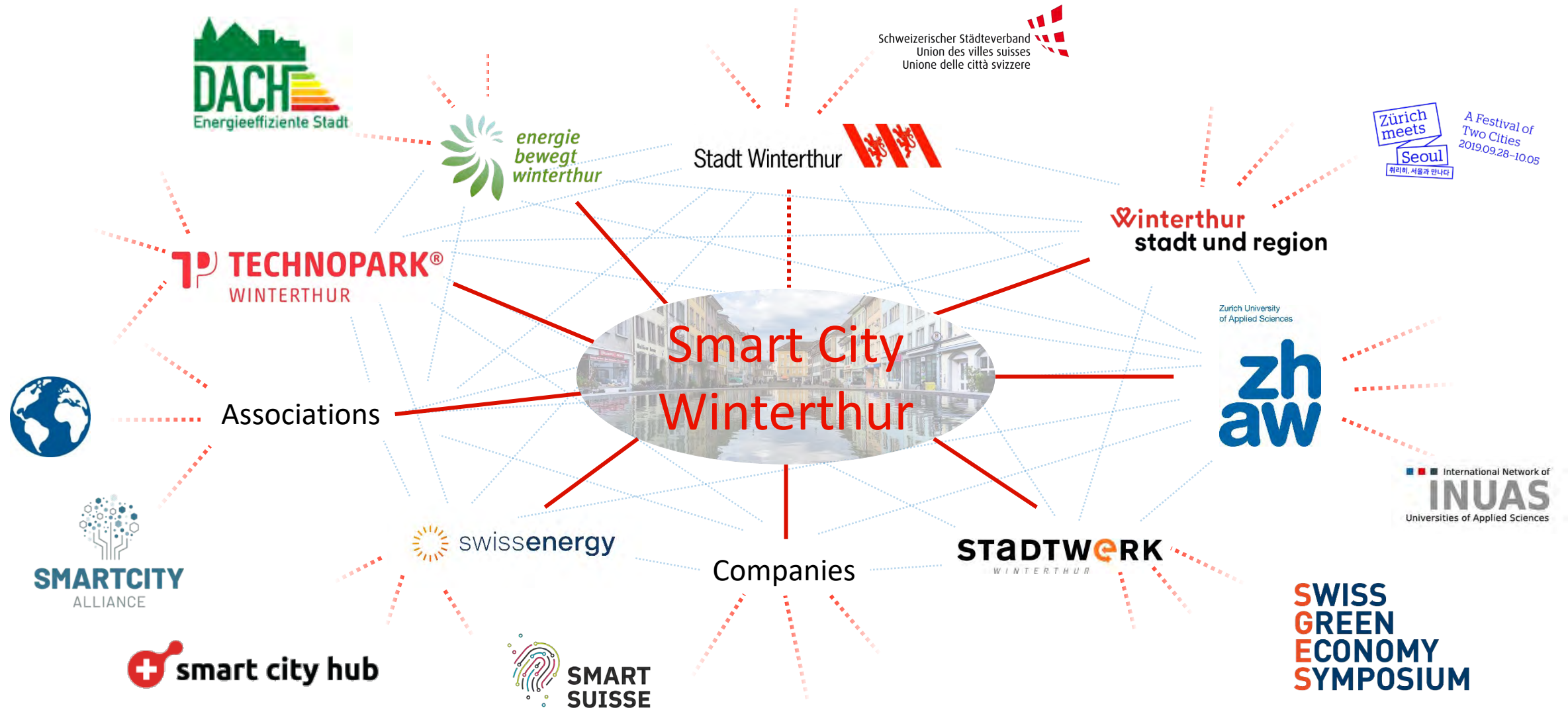


<https://www.swissmartcities.org/>



Ecosystem SmartCity@win.ch

Stadt Winterthur





Stadt Winterthur

Smart City Winterthur Pilot Projects 2020

More information available online on
www.stadt.Winterthur.ch/smartcity



News | 08.06.20

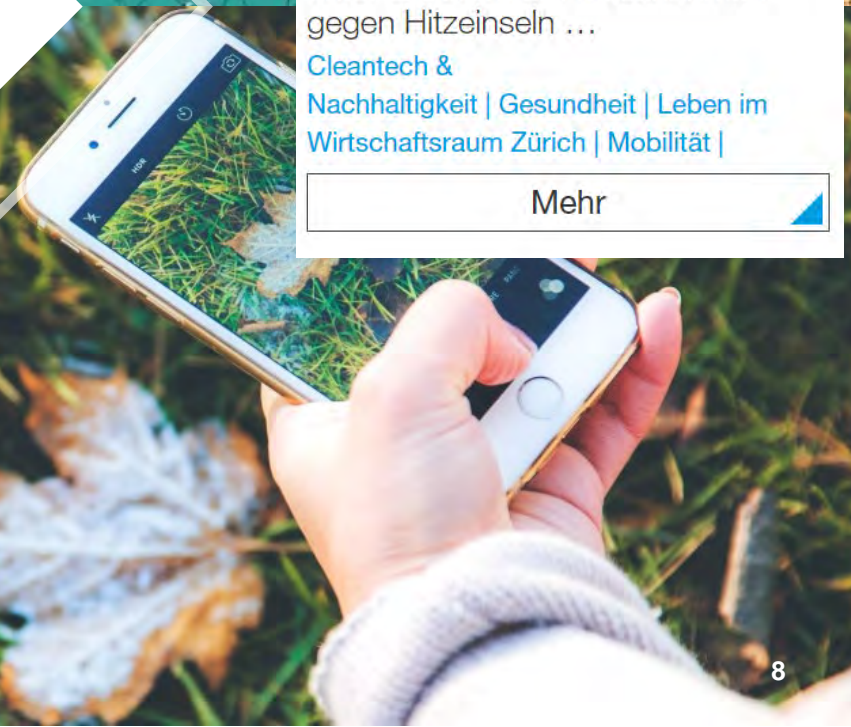
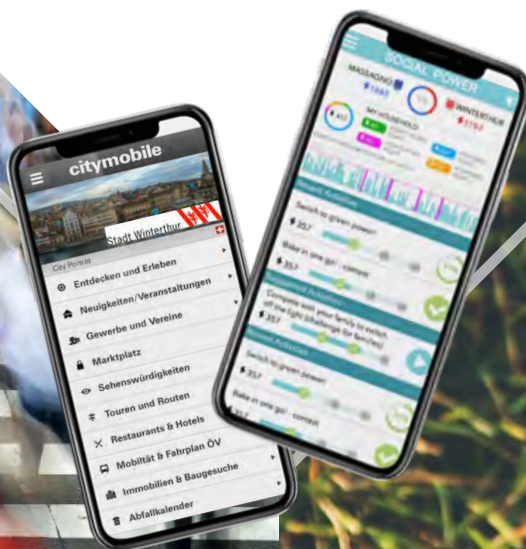
Smart City Winterthur erhält Schub

Winterthur – Winterthur präsentiert vier Smart City-Projekte für 2020. Bei diesen Pilotprojekten geht es unter anderem um Massnahmen gegen Hitzeinseln ...

Cleantech &

Nachhaltigkeit | Gesundheit | Leben im Wirtschaftsraum Zürich | Mobilität |

Mehr



Slovak Innovation and Energy Agency

Switzerland
May 2022

• **Peter Blaškovič**, Director general •

The Mission

Support energy efficiency and innovation

administer various financial schemes and funds to support selected SDGs in Slovakia (RES, energy efficiency, innovations....)

Monitor & Evaluate

operate the national monitoring system of energy efficiency

Inform and advise

building awareness of RES and innovations among target groups

Participate

in international cooperation and represent Slovak Republic in international projects

Educate and connect

provide specialized training and informal education

We contribute to the Bright Future of Slovakia since 1952.



Flagship projects



Green for Households



Increasing usage of RES in Slovakia. Allocation of 100 mill. € for a target group of more than 790 000 homeowners.

Let's Innovate!



The strategic goal is to increase competitiveness of enterprises, support innovative solutions and to stimulate innovation and cooperation processes among enterprises and RTO through innovative consulting and direct financial assistance - innovation vouchers.

Live with Energy



Over 10 years of building the awareness on RES, energy efficiency, green transition and new energy sources (H2).

National Energy Efficiency Monitoring






We are the delegated entity that is operating the national energy efficiency monitoring tool and we became the respected body to consult and address the energy efficiency, mainly in building sector.

Call for the renovation of public buildings

44 million for municipalities, cities, and higher territorial units, but also for state administration and public organizations.

The aim of the support is to

-  reduce the energy intensity of buildings
-  increase the energy efficiency of buildings
-  promote the use of renewable energy sources

Reusable energy sources will contribute to solving the energy crisis.



Thank you for your interest and attention

www.siea.sk



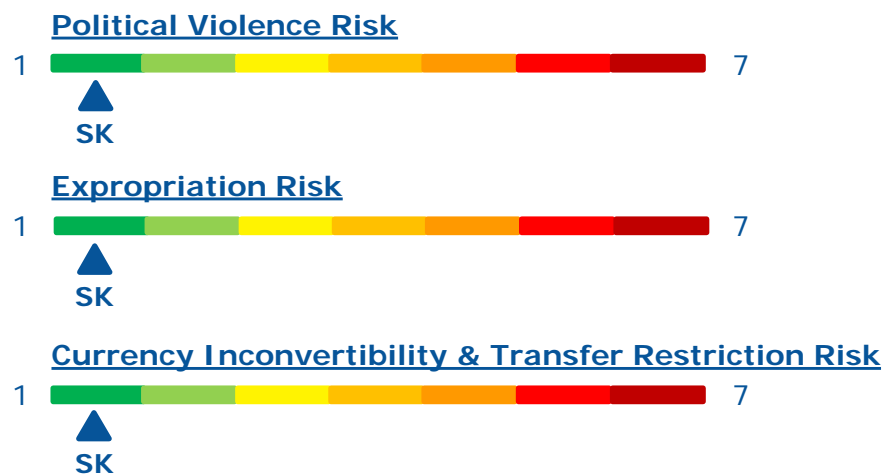
SLOVAK BUSINESS ENVIRONMENT, INVESTMENT OPPORTUNITIES AND CLEANTECH VISION

ROBERT ŠIMONČIČ, 20.5.2022



ONE OF THE SAFEST COUNTRIES FOR INVESTORS IN EUROPE

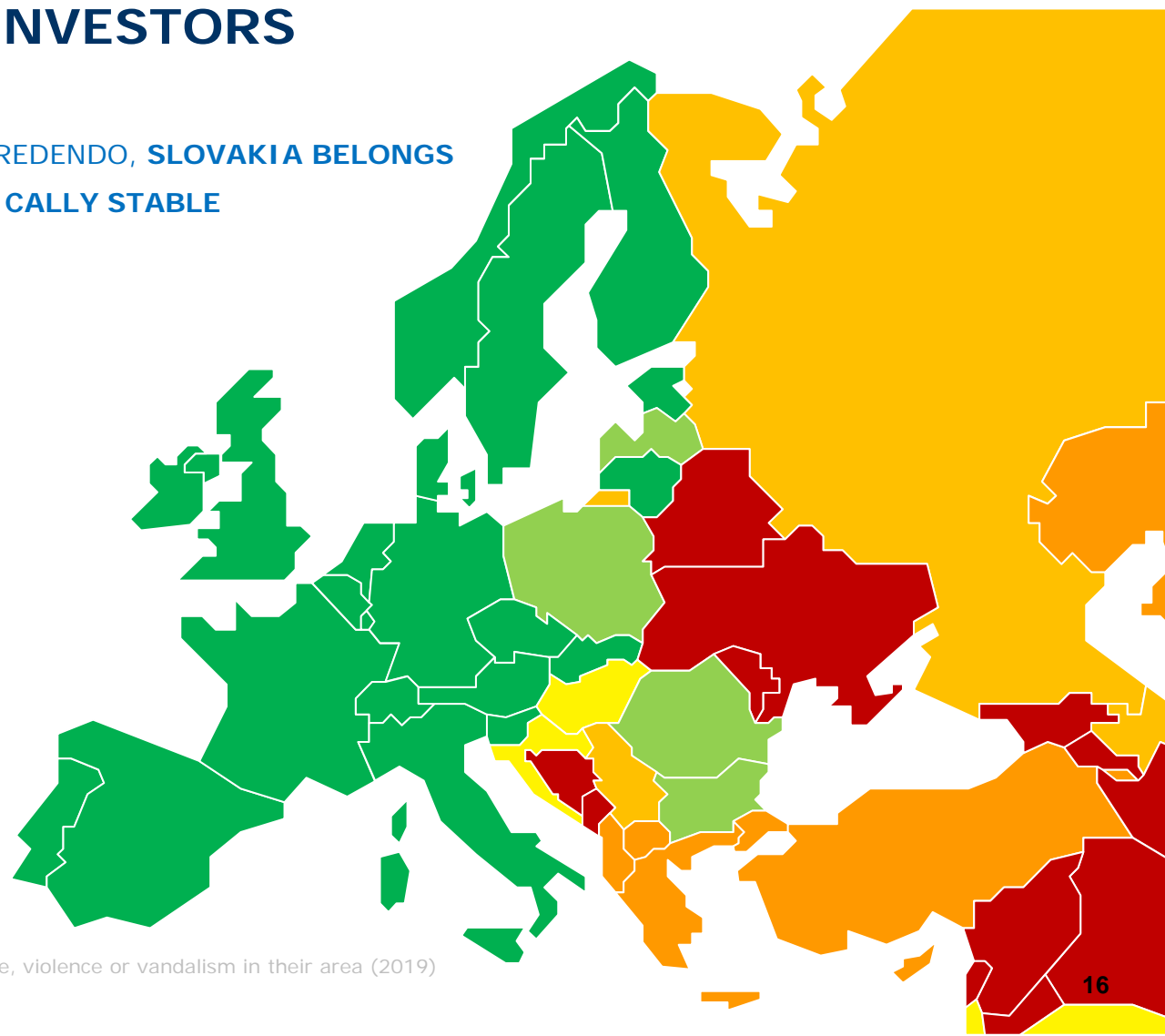
ACCORDING TO POLITICAL RISK ANALYSIS OF CREDIT INSURANCE GROUP CREDENDO, SLOVAKIA BELONGS TO A GROUP OF COUNTRIES WITH THE SAFEST AND THE MOST POLITICALLY STABLE ENVIRONMENTS IN EUROPE.



EUROSTAT:

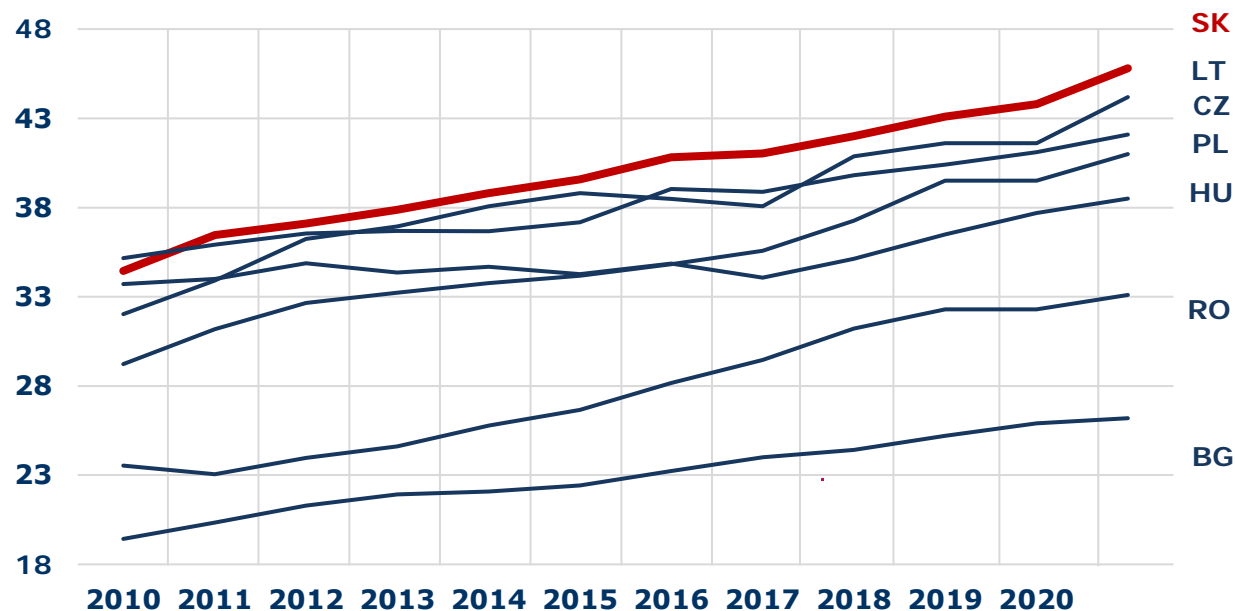


AMONG TOP 5 SAFEST COUNTRIES IN THE EU



THE HIGHEST LABOUR PRODUCTIVITY IN CEE

GDP (IN PPS) PER HOUR WORKED (IN USD)



LEADER IN AUTOMATION – NO. 20 GLOBALLY

Slovakia has **175 industrial robots** per 10,000 employees, one of the highest rates in CEE (World average = 126)



FDI & TECHNOLOGY TRANSFER LEADER IN CEE

In the extent of **bringing new technology** to host country. 17th place worldwide (out of 132 countries)



THE HIGHEST SHARE OF ADDED-VALUE EMPLOYMENT IN CEE

Jobs in **medium-high technology manufacturing** and **knowledge-intensive services** in the CEE region



ONE OF THE LOWEST NUMBER OF LOST WORKING DAYS DUE TO INDUSTRIAL ACTIONS IN THE EU

per 1,000 employees thanks to existing **tripartite dialogue** – platform ensuring low level of industrial action



THE HIGHEST SHARE OF PEOPLE WORKING AT NIGHT IN THE EU

almost **every 4th** in the automotive industry

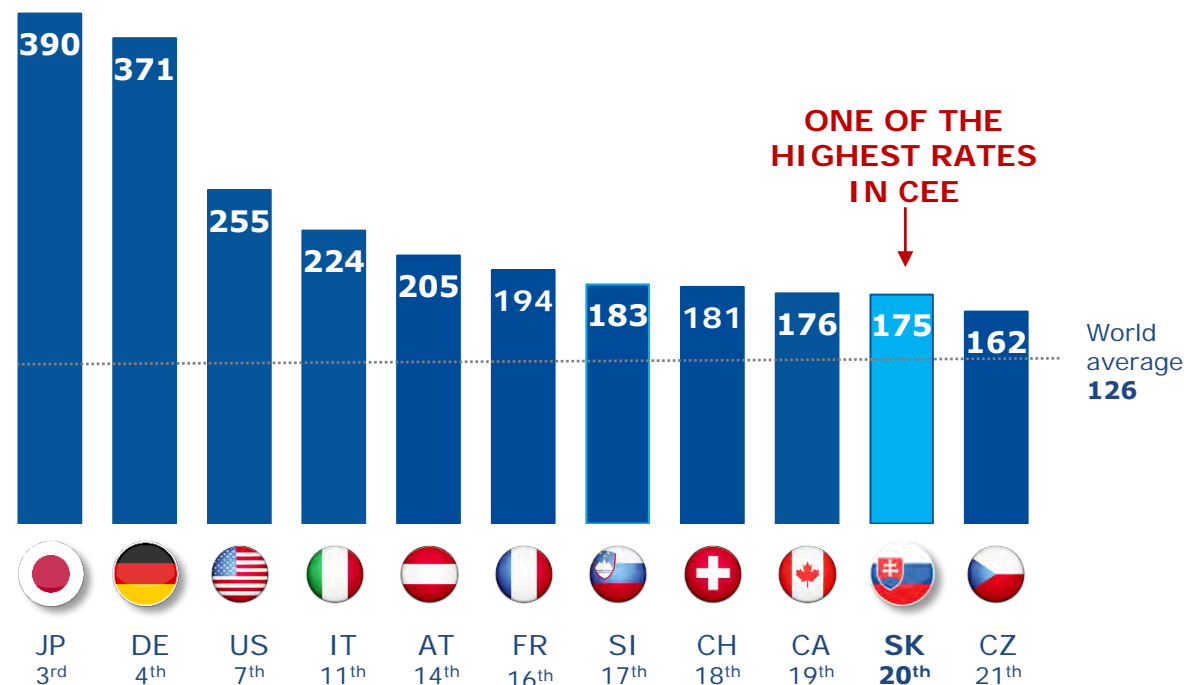
AMONG WORLD LEADERS IN AUTOMATION

SLOVAKIA BELONGS TO **TOP 20** COUNTRIES WITH THE HIGHEST NUMBER OF INSTALLED ROBOTS IN THE MANUFACTURING INDUSTRIES PER 10,000 EMPLOYEES.

SLOVAKIA IS
THE WORLD'S
20TH LARGEST
ROBOT
MARKET

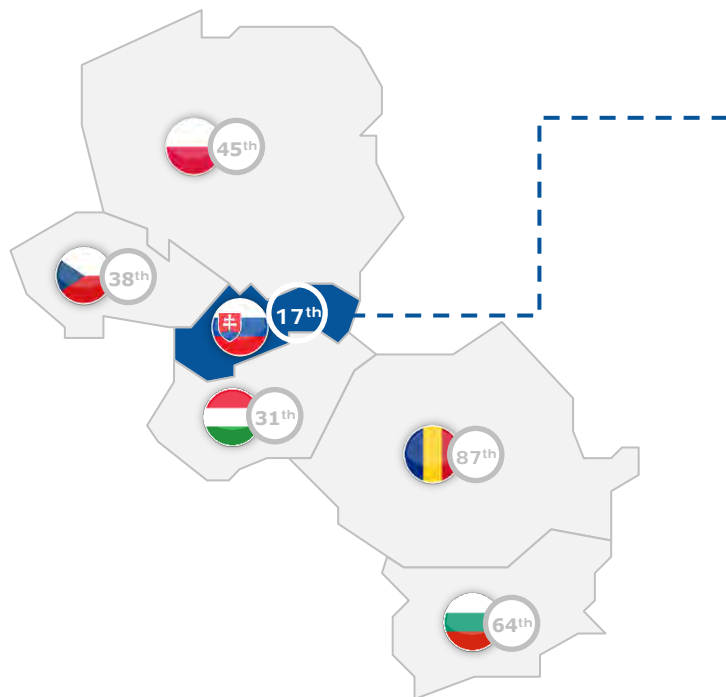


- There were **175 robots per 10,000 workers** in 2020, according to International Federation of Robotics.
- The number of robots used in Slovak companies has **increased to 222%** compared to 2015 figures.
- **Car and electrical engineering** industries remain to be leaders in implementing robotic devices.
- Robots are mostly implemented in **handling, welding, painting, metal industry, logistics** and as **service robots**.



FDI & TECHNOLOGY TRANSFER LEADER IN CEE

MANY FOREIGN COMPANIES ALREADY DISCOVERED THE **ABILITY OF SLOVAK WORKFORCE TO EFFECTIVELY ADOPT TO NEW TECHNOLOGIES AND OPERATIONS** THEY ARE BRINGING TO THE COUNTRY. THANKS TO THIS QUALITY, **FDI BECAME A BACKBONE OF THE SLOVAK ECONOMY.**



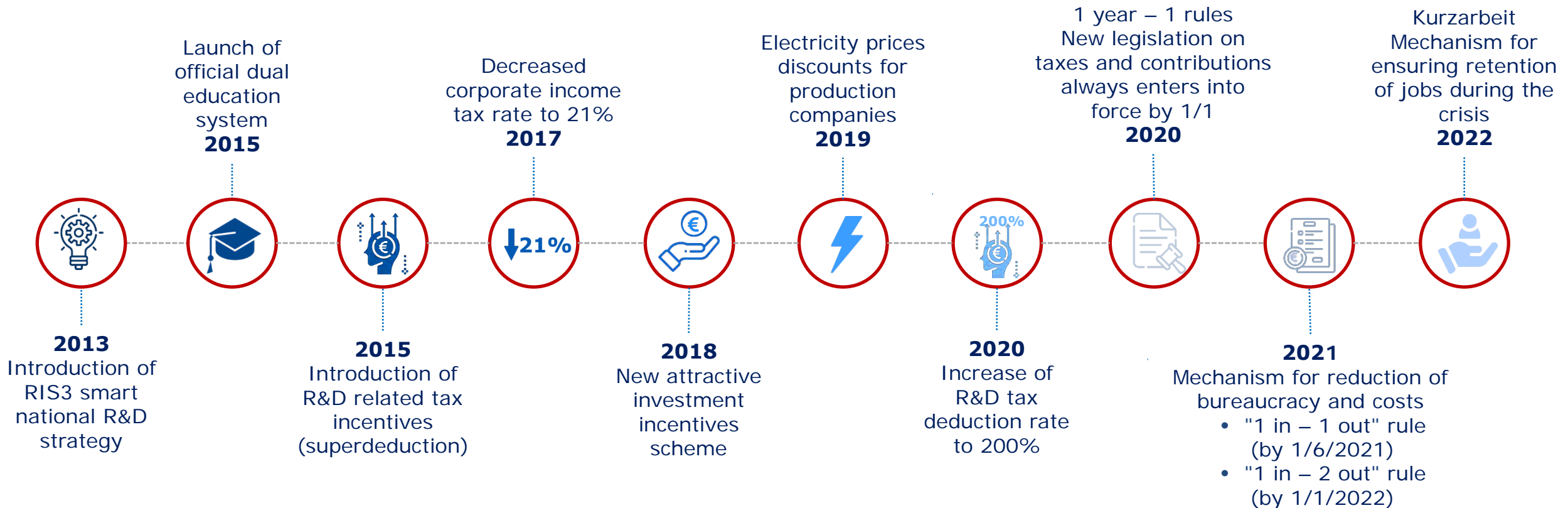
SLOVAKIA RANKS 1st IN THE REGION IN FDI AND TECHNOLOGY TRANSFER

- | The ranking reflects the **capability of the country to successfully adopt new technologies** brought by foreign direct investors
- | Slovakia holds **17th place worldwide** (out of 132 countries)



CONTINUALLY IMPROVING BUSINESS ENVIRONMENT

THERE ARE SEVERAL RECENT ACTIVITIES AND MEASURES INTRODUCED BY THE SLOVAK GOVERNMENT **TO INCREASE THE QUALITY OF THE SLOVAK BUSINESS & INVESTMENT ENVIRONMENT:**

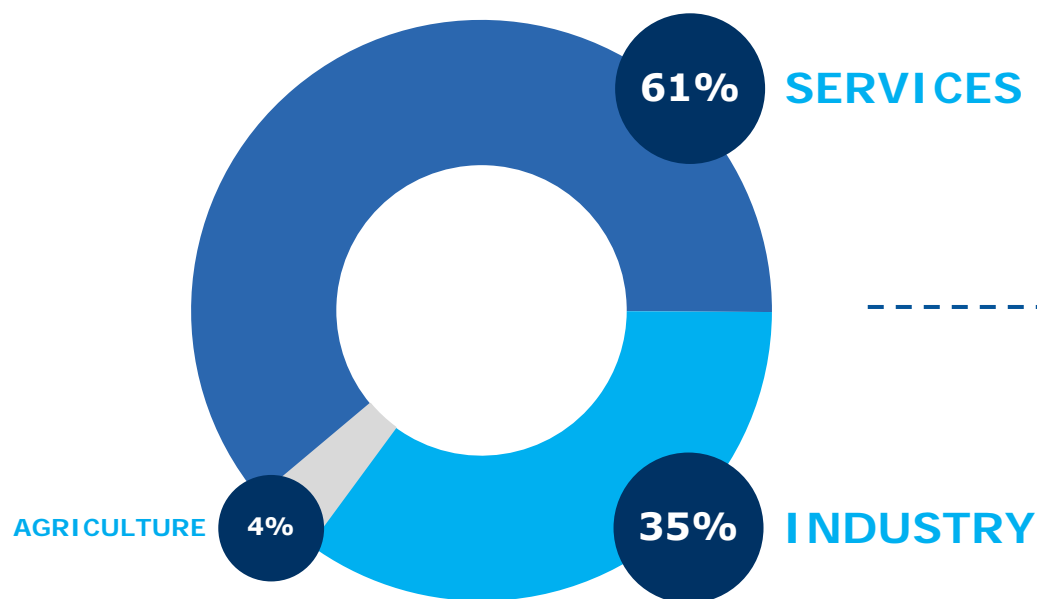


SLOVAKIA HAS ONE OF THE BEST COUNTRY CREDIT RATINGS IN THE CEE

CREDIT RATING AGENCY	SLOVAKIA	CZECH REPUBLIC	HUNGARY	POLAND	BULGARIA	ROMANIA	SERBIA	TURKEY
 STANDARD & POOR'S	A+ Stable	AA- Stable	BBB Stable	A- Stable	BBB Stable	BBB- Stable	BB+ Positive	B+ Negative
 Moody's Corporation	A2 Stable	Aa3 Stable	Baa2 Stable	A2 Stable	Baa1 Stable	Baa3 Stable	Ba2 Stable	B2 Negative
 Fitch Ratings	A Stable	AA- Negative	BBB Stable	A- Stable	BBB Positive	BBB- Negative	BB+ Stable	B+ Negative
 JCR Japan Credit Rating Agency	A+ Stable	AA- Stable	A- Stable	A Stable	n/a	BBB Negative	n/a	BB Stable
 R&I NOW Rating and Investment Information	A+ Stable	AA- Stable	BBB+ Stable	A Stable	n/a	n/a	n/a	BB- Negative
OECD Country risk	-	-	-	-	3	3	4	5

STRUCTURE OF THE SLOVAK ECONOMY CORRESPONDING TO DEVELOPED ECONOMIES

**SLOVAK GDP COMPOSITION BY
SECTOR OF ORIGIN**



ICT



SSCs & BPO



R&D and Design



Logistics &
Transportation



Wholesale
& Retail



Financial &
Insurance Services



Real Estate



Tourism



Automotive
Industry



Mechanical
Engineering



Electrical
Engineering



Pharmaceuticals
& Medical Devices



Food
Products



Wood Processing
& Paper



Chemical &
Rubber Industry



Defense &
Aerospace
Industry



Metallurgy



Textile
Industry



Energy
Sector



Construction

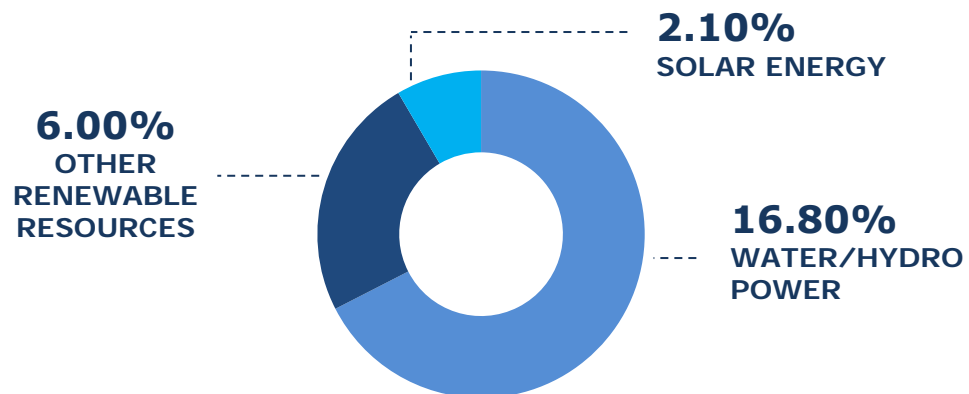


CLEANTECH VISION OF SLOVAKIA

GREEN ENERGY IN SLOVAKIA

- 1 Slovakia has one of the greenest energy mixes in Europe. In total, **more than 78% of power in Slovakia was produced from low-carbon sources** (renewables and nuclear energy) in 2020.
- 2 Nuclear power production amounts to about **55% of total production**.
- 3 Coal powerplant Nováky (the last coal-fired plant in Slovakia) is currently downscaling and **is planned to be fully closed by December 2023**.
- 4 **The share of renewables currently represents about 25% of total production**. Please refer to the graph below for its breakdown. According to predictions the share of renewable resources is expected to reach about 27.3% by 2030.

COMPOSITION OF RENEWABLE SOURCES IN SLOVAKIA



GREEN ENERGY SOLUTIONS FOR COMPANIES

100%

Of the **electricity** consumption can be covered by the **Guarantees of Origin** (proving the renewable source of energy) – already available

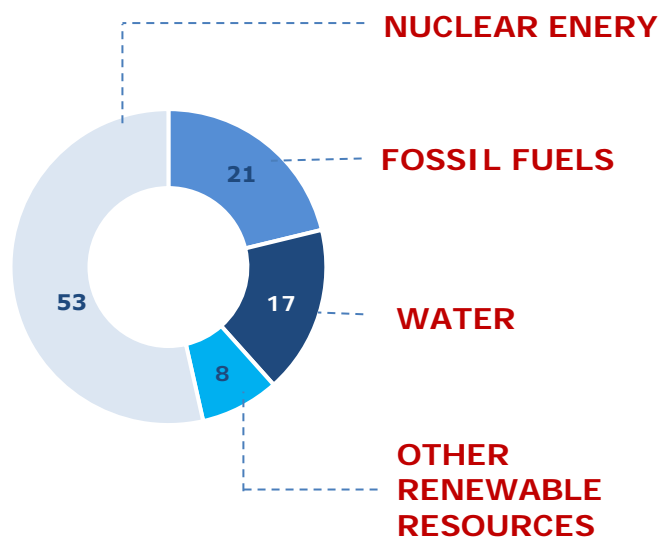
100%

Of the **gas** consumption can be covered by the **Guarantees of Origin** (proving that **biogas** is consumed) – available since 2023

SHARE OF INDIVIDUAL SOURCES IN ELECTRICITY PRODUCTION

78% OF ELECTRICITY PRODUCED IN SLOVAKIA COMES FROM LOW-CARBON ENERGY SOURCES. THIS SHARE IS EXPECTED TO GROW EVEN FURTHER DURING UPCOMING YEARS.

ELECTRICITY PRODUCTION IN 2020



Nuclear energy

- expected rapid growth & energy self-sufficiency due to opening of the third plant block in **Mochovce**.

Fossil fuels

- The last coal-power plant Nováky is scheduled to be fully stopped by December 2023.

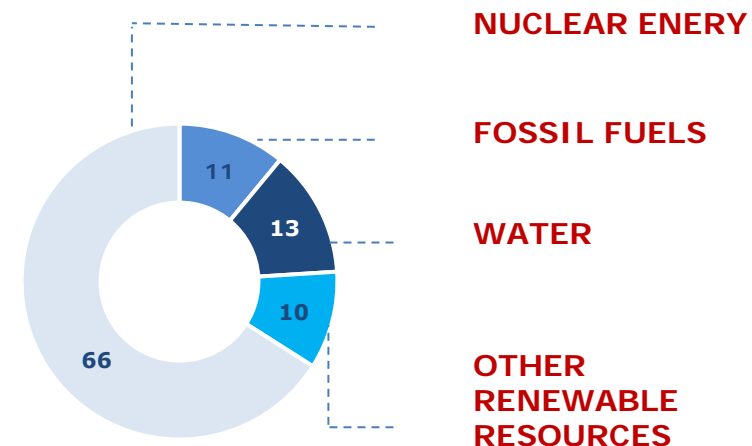
Water sources

- **Slovakia has 26 big** & over **200 small** water power plants.

Renewable sources:

- Expected growth due to **amendment to the act on renewable resources**.

PROJECTED ELECTRICITY PRODUCTION IN 2025



CLEANTECH SECTOR IN SLOVAKIA ACROSS VARIOUS SEGMENTS

SLOVAK COMPANIES PROVIDE UNIQUE SOLUTIONS IN EVERY SEGMENT OF THE CLEANTECH INDUSTRY.

✓ Waste Management

✓ Water Management

✓ Circular Economy

✓ AgroTech

✓ Energy Storage

✓ Energy Efficiency

✓ E-mobility

✓ Hydrogen Technologies



Water purification
systems



Quality of water
monitoring system



Waste water
treatment



Biobased materials
research



Biofertilizers
customization



Biofertilizers
productions



Plastic waste recycling



Recycling technology
production



Renewable energy
management systems



Renewable energy
production systems



Photovoltaics production



AI driven virtual power
plants



E-mobility charging
systems



Smart waste
management systems



Biodegradable waste
management



Battery systems

ELECTRIC MODELS PRODUCED IN SLOVAKIA

BEV



VOLKSWAGEN E-UP!



PEUGEOT E-208

PHEV



VOLKSWAGEN TOUAREG EHYBRID



AUDI Q7 TFSI E



KIA XCEED PLUG-IN HYBRID



PORSCHE CAYENNE E-HYBRID



AUDI Q8 TFSI E



KIA CEED SPORTWAGON PLUG-IN HYBRID



PORSCHE CAYENNE COUPÉ E-HYBRID



LAND ROVER DEFENDER 110 P400E



KIA SPORTAGE PLUG-IN HYBRID



JAGUAR
LAND ROVER
ELECTRIFICATION
PLAN

2024

First electrified Land
Rover to be produced

2030

Electrified versions of
all JLR models

E-MOBILITY PRODUCTION AND FORECAST

2019

Share of APV* on car export increased from 1% in 2018 to 24% in 2019

(gasoline 54%, diesel 22%, hybrid 14%, PHEV, 3%, BEV 7%).

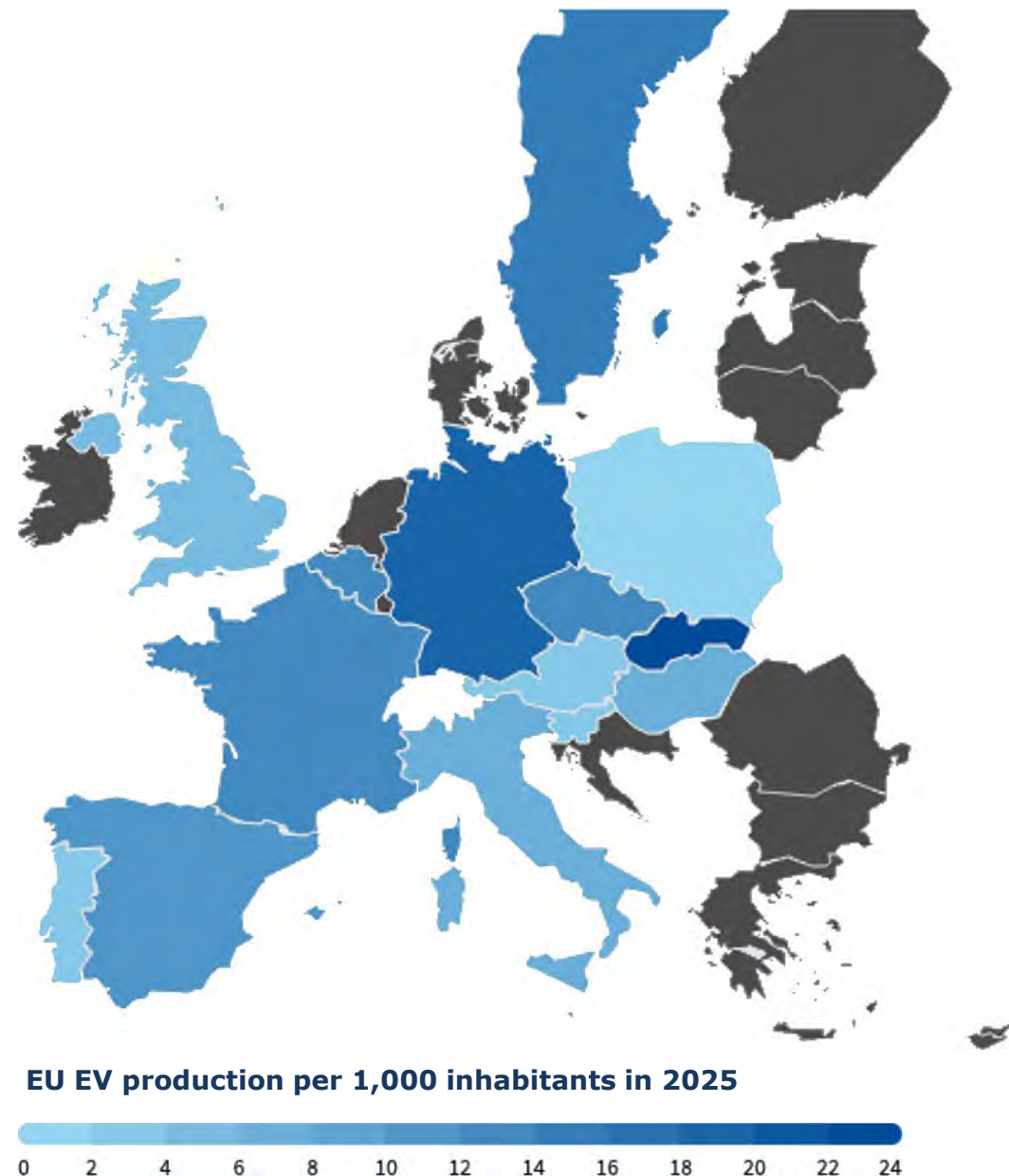
2025

Slovakia has by far the highest forecasted production of electric vehicles in Europe

(25 BEVs produced per thousand inhabitants in 2025).

4 OEM
In EV

Four different carmakers planning to produce EVs at large scale in 2025
(VOLKSWAGEN, JAGUAR LAND ROVER, KIA, STELLANTIS)



E – MOBILITY SECTOR IN SLOVAKIA

NUMBER OF E-MOBILITY SUPPLIERS AND SOLUTION PROVIDERS ARE ALREADY ESTABLISHED IN SLOVAKIA.



ELECTRO MOTORS AND COMPONENTS:

BSH Drives and Pumps, Eiben, Elektrokarbon, Sisme, Slovres, ZF Active Safety, VEM, Mobility & Innovation



CHARGING STATIONS

GreenWay Infrastructure, Ejoin, SEAK



BATTERY/ CHARGING COMPONENTS

Panasonic, Intercable, InoBat
Van Doren Engineers, NES, Voltia Automotive, Webasto
Convertibles, Tirn Technology, MACH Trade, InoBat, NEXPLUS,
UNI - TECH



MACHINERY AND EQUIPMENT COMPONENTS

U.S. Steel, Transmisie engineering



Producer of bodyworks for minibuses. The product range of completed vehicles contains maximal capacity of seats from 12 to 36 places, appropriate for all types of specific transport



Production of fully electrified- & hydrogen-based minibuses



SMART mobility cluster under the lead of SIEMENS and Slovak Technical University in Bratislava. Collaboration is focused on R&D of SMART, autonomous vehicles, alternative drives and progressive vehicle construction

Development and integration of autonomous solutions for e-vehicles at Slovak Universities

SLOVAK HYDROGEN ECOSYSTEM

NATIONAL HYDROGEN STRATEGY

STRATEGIC ROLE OF THE STATE IN THE USE OF HYDROGEN TECHNOLOGIES

- Cooperation with industry, R&D and educational institutions
- Creation of a **framework for hydrogen use & policies to stimulate demand for hydrogen**
- Implementation of **support measures for development** of innovative products, technologies and industrial solutions
- Support of **production and use of green and blue hydrogen** (construction of electrolyzers, utilization of electricity from the reserves of nuclear power plants)

PRIORITY AREAS FOR R&D AND INNOVATION

- Material research (absorbent materials, ceramic materials)
- Development of fuel cells & hydrogen compression methods
- Hydrogen production and storage (electrolyzers y equipment development)
- Hydrogen utilization technologies (green hydrogen production, underground storage)

INSTITUTIONS



MINISTRY OF ECONOMY OF THE SLOVAK REPUBLIC

- National Hydrogen Strategy supervision



SLOVAK NATIONAL HYDROGEN ASSOCIATION (NVAS)

- Supporting deployment of hydrogen technologies



SLOVAK INNOVATION AND ENERGY AGENCY

- Financial support of hydrogen projects



SLOVAK INVESTMENT AND TRADE DEVELOPMENT AGENCY

- Promotion of Slovak hydrogen-related investment environment



RESEARCH & DEVELOPMENT

ESTABLISHMENT OF THE HYDROGEN TECHNOLOGY RESEARCH CENTER (CVT) IN KOŠICE



TECHNICAL UNIVERSITY OF KOŠICE (FACULTY OF MECHANICAL ENGINEERING)

- Hydrogen Technology Lab: design of **metal hydride compressor**, model of hybrid hydrogen automobile



P. J. ŠAFÁRIK UNIVERSITY IN KOŠICE (FACULTY OF SCIENCE)

- Development of hydrogen adsorption materials (Metal-organic frameworks - MOFs)



SLOVAK ACADEMY OF SCIENCES (INSTITUTE OF MATERIALS RESEARCH):

- Development of materials with high hydrogen storage capacity (high-entropy alloys)

COMPANIES



Production of hydrogen (power to gas technology) for internal consumption

Project focused on storage of energy in underground geological structures in the form of natural gas and hydrogen

IPCEI Project 2020 – 2030 focused on lowering CO2 emissions in the heavy duty transport sector

WHO WE ARE AND WHAT WE DO?



MINISTRY
OF ECONOMY
OF THE SLOVAK REPUBLIC



OUR MISSIONS



1. INVESTOR SUPPORT

- Investment promotion
- Assistance for potential investors and established companies



2. FOREIGN TRADE SUPPORT

Supporting Slovak companies on the global market



3. INNOVATION SOURCING

Interconnecting Slovak R&D capacities with international companies

Thank you

ROBERT SIMONCIC
CEO, SARIO

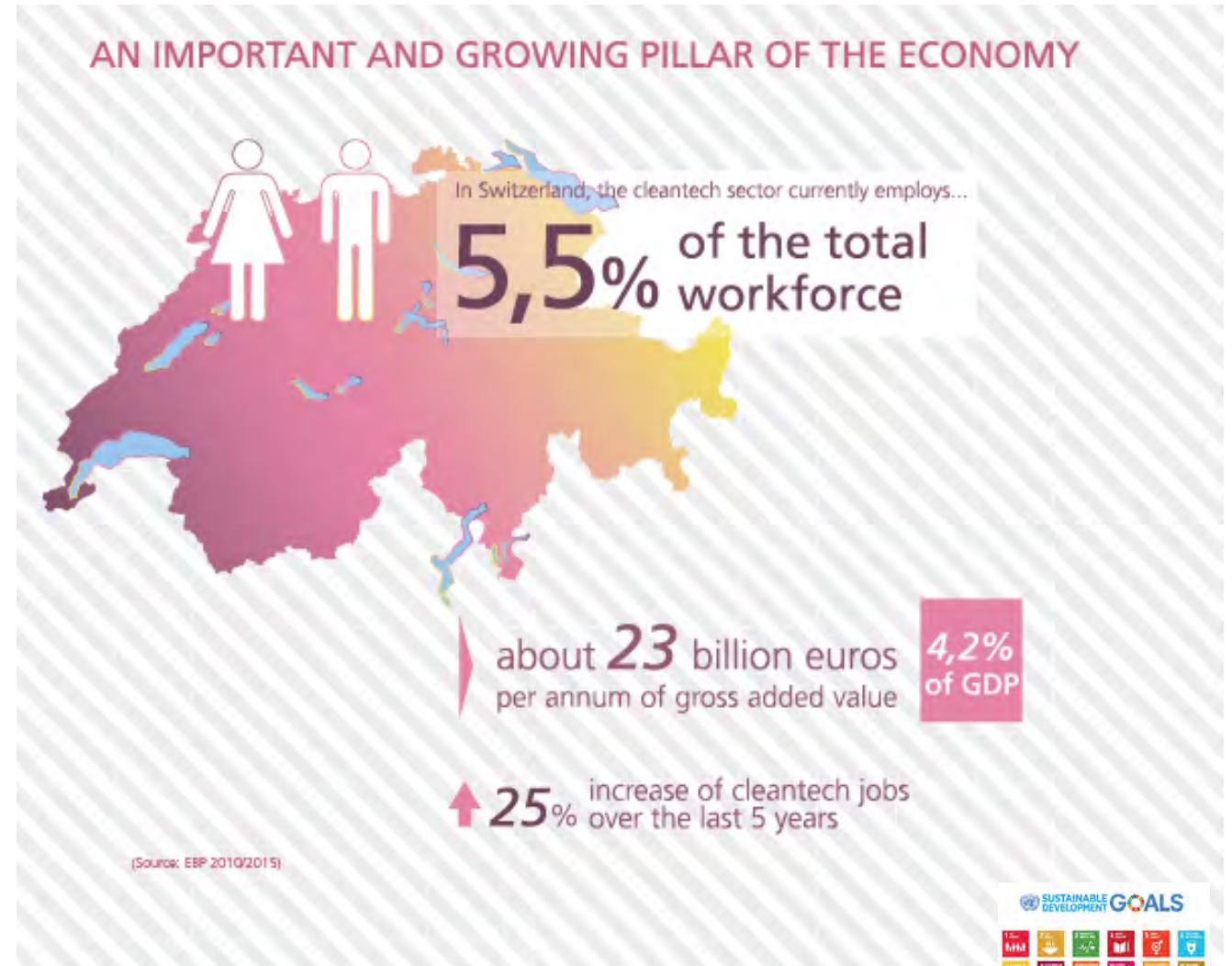
E: Robert.simoncic@sario.sk



CLEANTECH SOLUTIONS FROM SWITZERLAND

David Avery, Head of Cleantech, Switzerland Global Enterprise

Cleantech, a key and growing segment in Switzerland



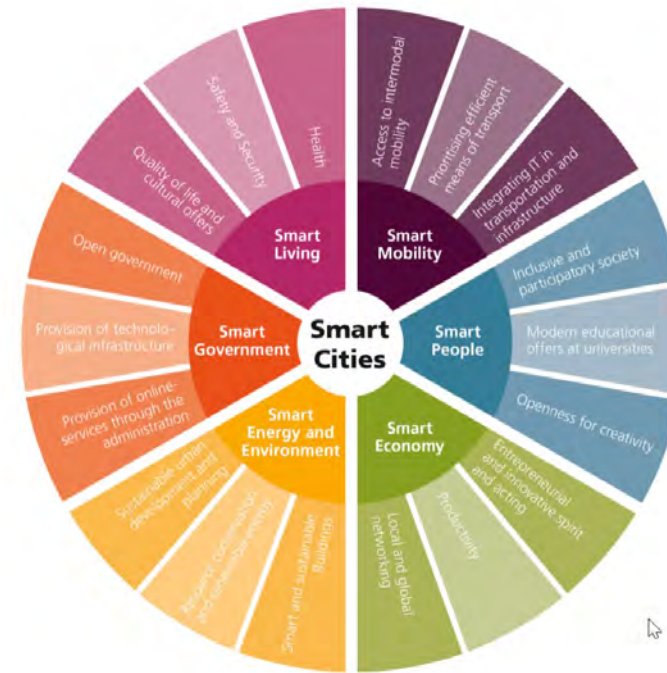
Smart Cities – Technologies for a green urban future



SCO
SMART CITY
OBSERVATORY

City	Smart City Rank 2020	Change	Smart City Rating 2020
Singapore	1	— (0)	AAA
Helsinki	2	▲ (+6)	AA
Zurich	3	▼ (-1)	AA
Auckland	4	▲ (+2)	AA
Oslo	5	▼ (-2)	AA
Copenhagen	6	▼ (-1)	AA
Geneva	7	▼ (-3)	AA
Taipei City	8	▼ (-1)	A
Amsterdam	9	▲ (+2)	A
New York	10	▲ (+28)	A

Source: The Institute for Management Development (IMD) Lausanne 2020 Smart City Index



Source: EnergieSchweiz

- 84 cities participated
- More than 57% are actively pursuing projects



Technologies: Smart IOT and monitoring

Industrial monitoring
Gas leakage



Source: Distran

Water quality



Source: bnovate

Smart water metering



Source: Droople

Smart grid digital
management platforms



Source: depsys

Air quality: CO₂,
particulates, VOC



Source: Plair

Smart metering (water,
electricity, heat, cooling,
gas)



Source: GWF



Source: adaptricity



Technology: Building and renovation

EMPA: NEST – real life testing



Source: EMPA NEST

Energy Production, Efficiency,
Transportation and Storage

Active Buildings



Source: Umwelt Arena Schweiz

Innovation in Solar PV:
coloured panels for roofs and walls



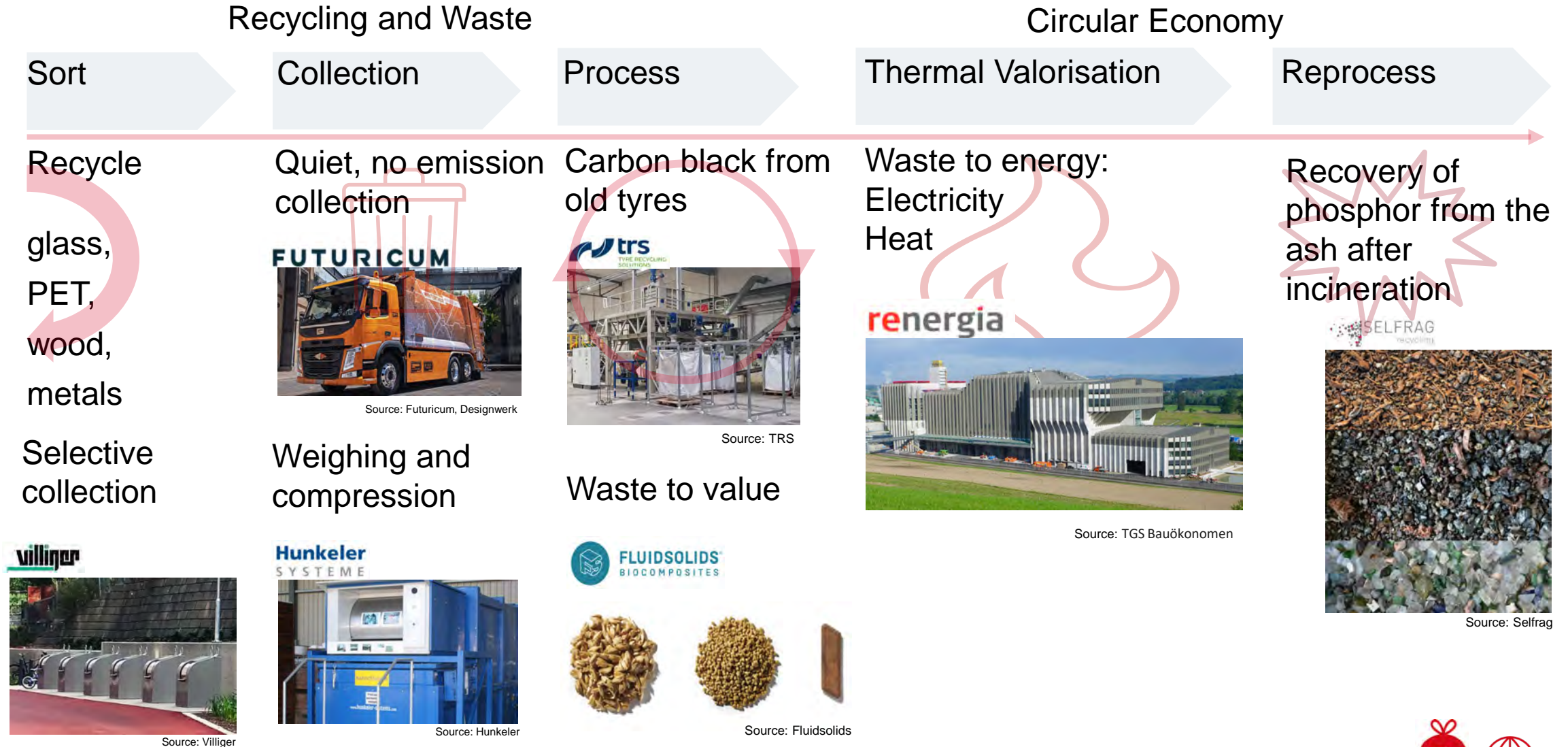
Source: Solaxess

3D printed concrete

MOB 3D



Technologies: Waste processing



Technologies: Electrification of mobility and transportation options



Hess busses and rapid charging



Source BERNMOBIL - Hess

Microlino mobility solutions



Source: microlino

EGO movement cycles and cargo



Source: EGO movement

Futuricum electric waste collection



Source: Futuricum, Designwerk

FUTURICUM

Leclanché battery powered ferry



Source: Leclanché

Kyburz utility vehicle



Source: Kyburz



Technologies: Rail and power generation

Swiss national railways (SBB CFF FFS)



Source: SBB

90% electricity from hydropower
Ambitious plans for energy savings
20% by 2025

Hydropower and more: floating solar production



Source: Romande Energie

Swiss national railways, production of green electricity from hydropower



Source: SBB

Smart grid and load management

Run of river power generation



Source: Alpiq

Gösgen - upgraded to increase efficiency by >10%



Technologies: Transportation



Source: Hydros spider

Introduction of Green Hydrogen network for commercial vehicles



Source: Hyundai Hydrogen mobility



Source Green GT

Development of fuel cells and commercial vehicles



Source PostAuto

Joint research – Fuel cell powered Citaro busses



Technologies: Carbon Capture and Storage

Air and Environment

Direct air capture

Derivative processes

Carbon Storage

 climeworks



Source: Climeworks AG

Extracting CO₂ directly from the air

 Synhelion



Source: Synhelion AG

Making Synthetic fuel using sunlight and CO₂

 neustark



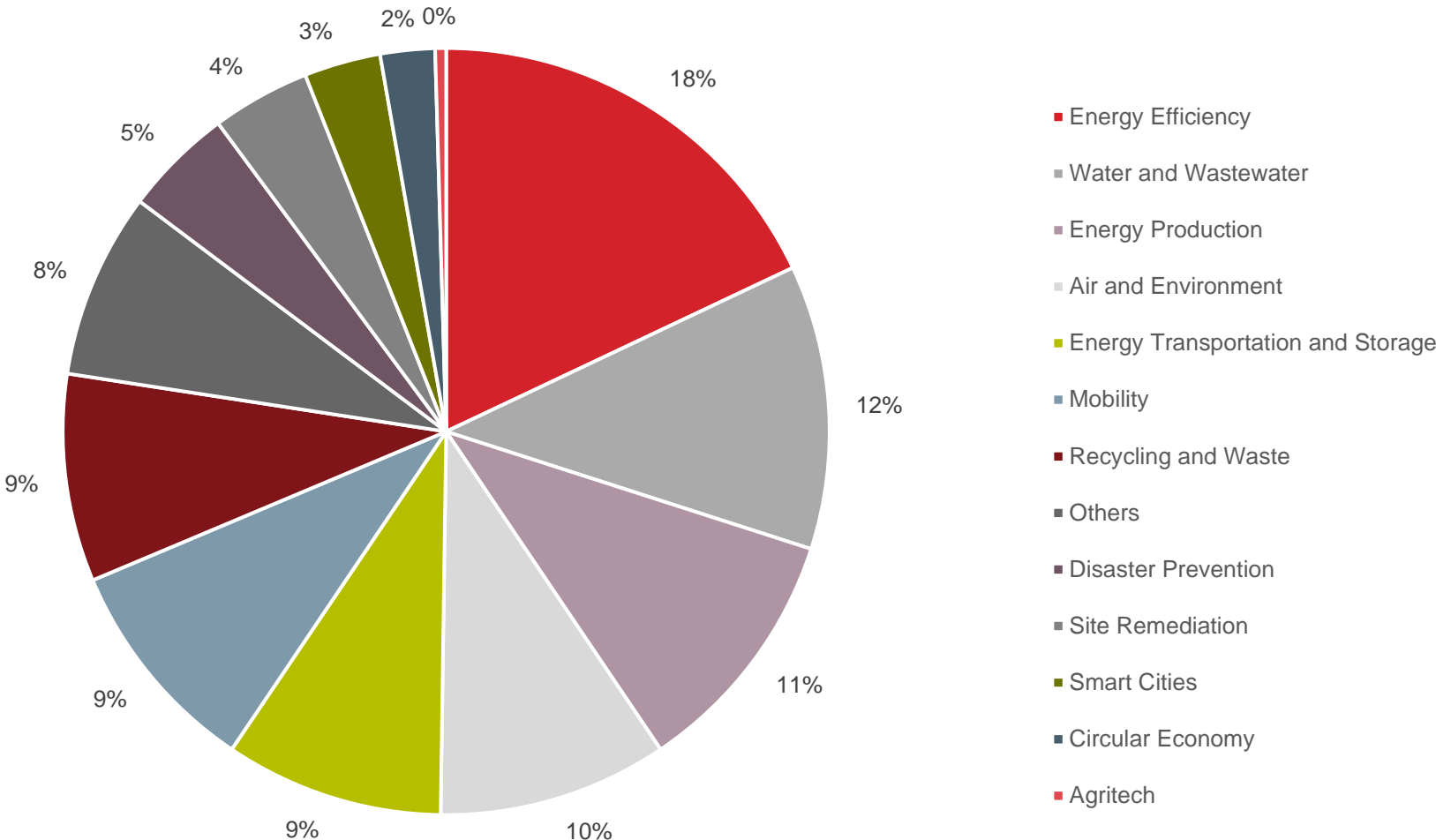
Source: neustark AG

Binding CO₂ into concrete

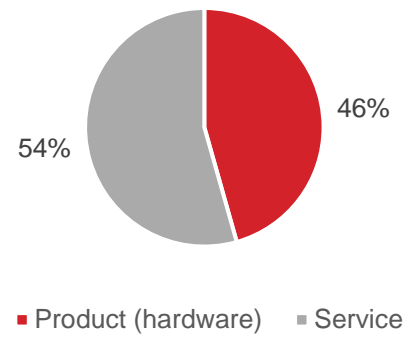


Swiss cleantech company interest in Slovak Republic : Cleantech CUBE www.sge.com/cube

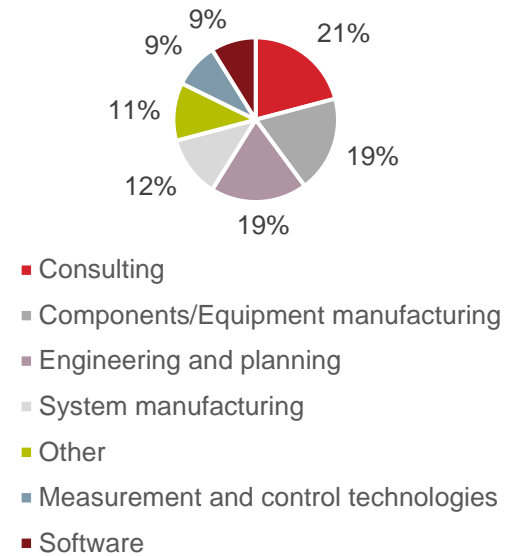
Cleantech Sector of business



Type of business



Category of business



Further information about Swiss cleantech



cleantech overview

<https://swisscleantechreport.ch/>



circular economy



- The circular economy report examines the move to a circular business model in many business sectors and the role of cleantech

• <https://www.cleantech-alps.com/en/etudes/details/the-circular-economy-an-economic-and-environmental-opportunity-for-switzerland-0-1932>

agritech



- Agritech in Switzerland promotes key advances of cleantech being used for agricultural applications
- <https://www.cleantech-alps.com/en/etudes/details/agritech-in-switzerland-the-panacea-that-squares-the-circle-of-productivity-and-climate-protection-0-1974>

MAY 19-21, 2022

SLOVAK Business Delegation

Zurich, Switzerland

INSTITUTIONS



Slovak Academy of Sciences

SAS is the **leading scientific institution of the Slovak Republic**. It implements excellent fundamental and applied research in a wide range of disciplines. It fulfills many irreplaceable societal tasks. An important task of SAS is the education of the young scientific generation

www.sav.sk



Slovak Investment and Trade Development Agency

Investment and trade development agency established under the Ministry of economy of the Slovak republic. Responsible body for incoming investments and support of international trade.

www.sario.sk



Slovak Innovation and Energy Agency

We raise awareness about energy efficiency, renewable energy sources and innovations in all fields of economy and provide expert consulting in those areas. We represent the Slovak Republic in international projects and institutions.

<https://www.siea.sk>



Swiss-Slovak Chamber of Commerce

Facilitating economic contacts between Slovakia and Switzerland, cooperation with Embassy of Switzerland in Slovakia, cooperation with S-GE and SEC (Chamber of Commerce Switzerland Central Europe). HSSR is providing information and organizing events for members.

www.hssr.sk



Kempelen Institute of Intelligent Technologies

KInIT is an independent, non-profit institute dedicated to intelligent technology research. We bring together and nurture experts in artificial intelligence and other areas of computer science, with connections to other disciplines, which include energy domain.

www.kinit.sk

MAY 19-21, 2022

SLOVAK Business Delegation

Zurich, Switzerland

UNIVERSITIES



Technical University of Košice & Promatech

Technical University in Košice - a founding member of the Slovak Battery Alliance, member of Slovak National Hydrogen Association, member of the European Junior Water Management Programme and is a part of research consortia Center Promatech.

www.tuke.sk

www.promatech.sk



Faculty of Electrical Engineering and Information Technology STU in Bratislava

Faculty of Electrical Engineering and Information Technology of Slovak University of Technology in Bratislava offers internationally accepted university study, intensive research and development, cooperation with partners in Slovakia and abroad.


www.fei.stuba.sk

MAY 19-21, 2022

SLOVAK Business Delegation

Zurich, Switzerland

GREEN TECHNOLOGIES/WASTE MANAGEMENT



((SENSONEO))

Sensoneo j.s.a.

Sensoneo is a global enterprise-grade smart waste management solution provider that enables cities and businesses to manage their waste cost-efficiently, be more environmentally responsible and improve the well-being of people.

www.sensoneo.com



JRK Slovensko s.r.o.

JRK Slovensko is a long-term partner of Slovak local governments in the field of waste management, especially in solutions for biodegradable waste. The team includes experts who have extensive experience with the introduction of kitchen waste collection and the production of quality compost in a professional composting plant. The company has developed its own system of electronic waste registration, which will bring a realistic view of the state of waste, economic efficiency and the opportunity to fairly reward citizens. An integral part of the company's solutions is communication and education of citizens, in order to achieve maximum success in the implementation of new solutions for waste.

<https://www.menejodpadu.sk>



SAFTRA Photonics, s.r.o.

The company developed and patented "PickMoITM nanotechnology" designed for selective and sensitive detection of organic molecules (water, pharmaceutical, food industry, medicine). It currently operates in the EU and USA markets.

<https://www.saftra-photonics.org>

MAY 19-21, 2022

SLOVAK Business Delegation

Zurich, Switzerland

ICT/ARTIFICIAL INTELLIGENCE



ESET, spol. s r.o.

For over 30 years, ESET® has been developing industry-leading IT security software for businesses and consumers worldwide. ESET's high-performing products allow all to enjoy the full potential of technology.

www.eset.com



Tachyum s.r.o.

With development centers in Slovakia and the USA, Tachyum develops a high-performance, universal processor chip for data processing, artificial intelligence (AI) and supercomputers (High Performance Computing - HPC).

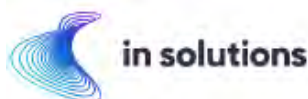
<https://www.tachyum.com>



3IPK, a.s.

3IPK is a B2B blockchain Software as a Service (SaaS) platform providing digital solutions improving transparency and traceability in various industries (food, fashion, etc) as a technology enabler for the concepts of circular economy.

www.3ipk.com



IN solutions s.r.o.

In solutions Ltd is an R&D company focused on the development of high-efficient information systems for businesses and running two successful spin-offs in aviation and aerospace:

- an SW platform for aircraft operators (my-air-seat.com)
- the ground-satellite connection provider (groundcom.space)

www.insolutions.io



ELIA, s.r.o.

ELIA is dedicated to the development of customized software solutions for clients in various fields. Within 17 years, the company has won several awards and ISO 9001:2016 Certificate.

www.elia.sk

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SLOVAK Business Delegation

Zurich, Switzerland

ENERGY



InoBat Energy j.s.a.

The goal of InoBat Energy is to develop and produce stationary battery storage systems for storing and management of electricity. Solutions of InoBat Energy focus on industrial sized clients, distribution networks or other large facilities with high fluctuating and high energy consumption. Their aim is to improve energy utilization and to maximize inclusion of renewable energy resources into the energy mix of its clients.

<https://inobatauto.eu>



Voltia Automotive s. r. o.

The Voltia is European e-mobility specialist launched in 2015. It supports original equipment manufacturers by broadening the usability of their mass-market electric light commercial vehicle (LCV) models.

www.voltia.com



PowereX j. s. a.

PowereX is a Slovak green-tech company aiming to revolutionize the operation of the electricity grid. It will act on its customers' behalf as an energy aggregator and smart trader. PowereX provides efficient energy management system which is capable to aggregate energy sources into a virtual power plant platform. The PowereX platform, powered by intelligent optimization algorithms, deep learning and AI, brings higher stability and resiliency to the electricity grid and significantly reduces end-users' net spend on electricity and net income of power producers. This is due to increased flexibility utilization of electricity consumers and producers. In addition, flexibility gained in this way is mostly carbon free which contributes to decarbonization of the energy sector. PowereX currently operates portfolio with size of 8 MW.

www.powereX.io



SPP CNG s.r.o.

The main activity is the sale of alternative fuel CNG. In 2022/23, we include LNG, hydrogen and biomethane in our portfolio of activities. The company's goal is to bring ecological and sustainable solutions in transport.

www.sppcng.sk



Slovak gas and oil association

Slovak Gas and Oil Association is a representative of renowned companies operating in the Slovak Republic and in the field of gas engaged in the industrial and municipal use of natural gas and oil in Slovakia, as well as research, concept, design, construction, and operation of equipment for:

- gas extraction and treatment
- underground storage
- purchase and sale of gas
- gas transit

www.spnz.sk

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SLOVAK Business Delegation

Zurich, Switzerland

INNOVATIONS/TECHNOLOGY



SPINEA, s.r.o.

SPINEA, s.r.o. is a modern Slovak engineering company engaged in the development, production and sale of high-precision reduction gears, sold under the TwinSpin® trademark, and high-precision actuators DriveSpin®. SPINEA® is currently the only originally European manufacturer of high-precision reduction gears and actuators and competes globally in this segment with three Japanese companies. The company was founded in 1994 and was inspired by the invention of the Slovak designer Ing. Bartolomej Janek, CSc., the transformation of the planetary motion of the reducer wheels into the rotary motion of the flanges. The start of mass production of internationally patented high-precision gearboxes began in 1999.

SPINEA® enjoys the membership of international robotics associations, such as the International Federation of Robotics, EU Robotics as well as the German Engineering Federation - VDMA.

www.spinea.com



SPINEA Technologies s.r.o.

SPINEA Technologies operates as a full-service provider in customer development and production of high-precision mechatronic positioning units and nodes. Provides services in the development phase of products, including: design concepts, 3D version of the product design documentation, prototype testing, simulation, analysis, and optimization of the product design, production, testing, and modification of the prototypes, final construction documentation.

www.spinea-technologies.com



Ecocapsule s.r.o.

Company manufactures off-grid, mobile micro dwelling unit.

www.ecocapsule.sk



Revol TT Consulting s.r.o.

RTC is middle size technology company with around 90 employees based in Trnava with 3 main division = Technology Applications Development, Precise Production and Scientific Division. At Scientific division we work with top research institutions all around the world as ITER, F4E, CERN, GSI, ESS, JINR, Argonne, ASG, Berkeley University, CEA,... Scope from our work is mostly Research, Special Production, Engineering, Special project management.

www.rtc.tech

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Zurich, Switzerland



Foss Fibre Optics, s.r.o.

FOSS Fibre Optics is a company with long-term experience in manufacturing and developing fibre optic cabling for various applications, including OnBoard Optics, harsh environment/military grade assemblies.

www.fossfibreoptics.com



Research Institute for Man-Made Fibers a.s.

Company is active in the research of PP, PA, PET, biodegradable and other chemical fibres, their applications, production of colour and additive masterbatches for mass-dyeing of fibres, films and plastics, development and engineering of equipment and machinery for chemical and related industries. Testing and certification services are offered in state accredited laboratories according to ISO/IEC 17025:2005.

Company acts as a EU Notified Body no. 1634 in the area of textile toys.

www.vuchv.sk



NiceVisions s.r.o.

Nice Visions is an innovative and creative studio creating solutions for the integration of renewable energy sources in urban areas (solar panels, urban wind farms, etc.). One of their main priorities is the transition to a zero-carbon future.

www.nicevisions.com



KELEX s.r.o.

Company KELEX s.r.o. (LTD) is an ISO certified company active in two industrial sectors:

1. Design and production of low voltage electrical switch boards for various industry sectors as energetics, renewable resources, machinery industry, technological equipment production, production of transport equipment, marine, or civil engineering.
2. Production of HVAC units for track vehicles.

Export share over 90%, main customers: Stadler Rheintal, Knorr Bremse, Engie Axima, Cern etc.

www.kelex.sk

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SLOVAK Business Delegation

Zurich, Switzerland

HEALTHCARE



Biomedical Engineering, s.r.o.

The company was one of the first in the world to introduce the use of 3D printing for custom-made medical implant purposes. Using a personalized approach has moved the level of Slovak implantology healthcare provided to the level of the top countries in Europe and the world. Currently, Biomedical Engineering, s.r.o., in collaboration with FME, TUKE is developing a new generation of innovative materials and implants for regenerative medicine with the promise of their early clinical adaptation and use in manufacturing hospitals around the world.

www.biomedicalengineering.sk

THANK YOU • ĎAKUJEM • DANKE

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