

SPBEC

ENGINEERING
FOR INDUSTRY

WWW.SPBEC.COM

SAINT-PETERSBURG ELECTROTECHNICAL CO. (SPBEC) IN A NUTSHELL

Fully private

Established in 1995 in Saint-Petersburg, Russia

Leader in engineering and EPC/EPCM® services for factories

> 1300 clients in 4 continents

> 600 employees



ABOUT

 **1700** PROJECTS

 **1300** CLIENTS

 **600** EMPLOYEES

 **18** PROJECT LOCATIONS

MISSION

WE ACCESS OUR SOLID FOUNDATION OF ENGINEERING KNOWLEDGE AND EXPERIENCE TO TAKE ON FULL RESPONSIBILITY FOR OUR CLIENTS' COMPLEX PROJECTS AND MOVE THEM FROM DESIGN TO INSTALLATION AND BEYOND.



OUR SERVICES FOR FACTORIES

For new factories and modernization projects:

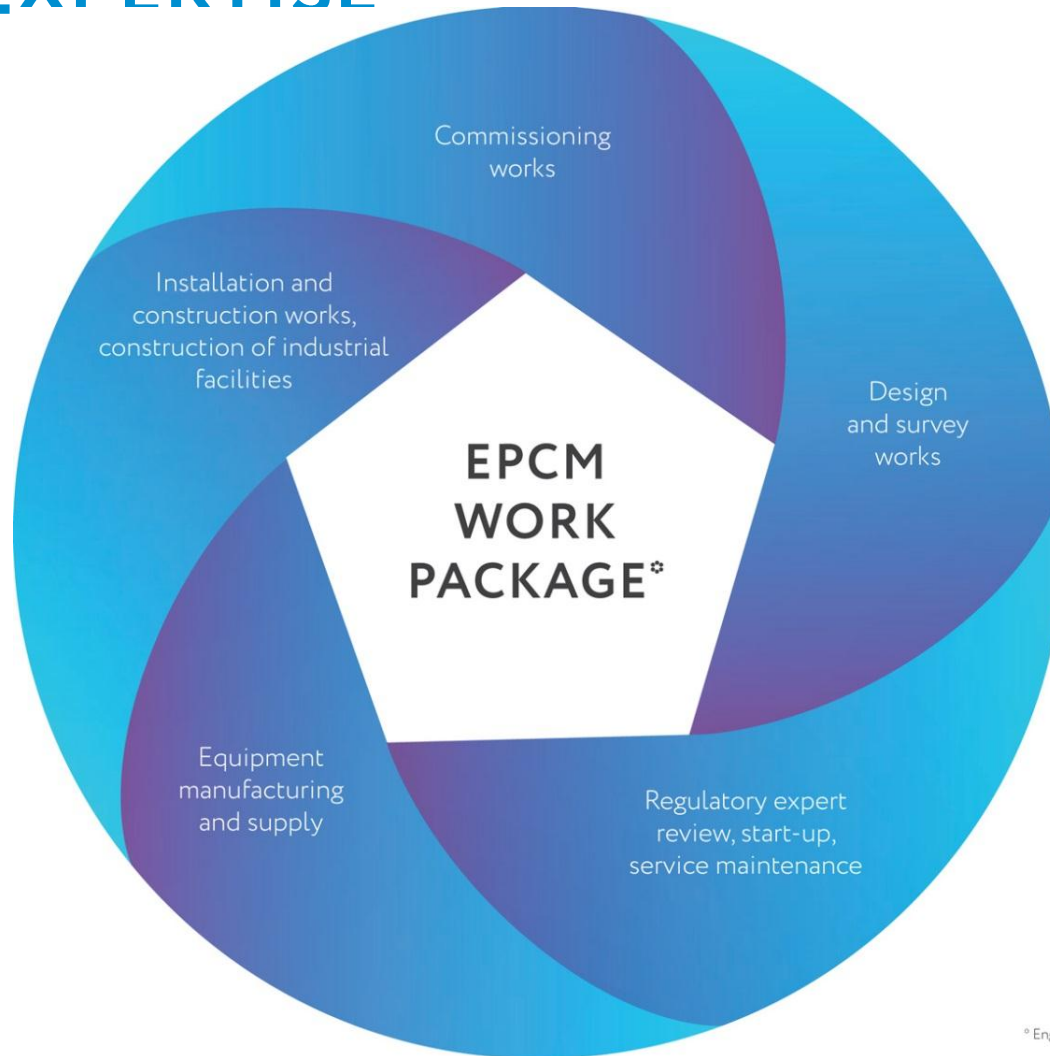
- ☐ Automation including installation and commissioning
- ☐ Electric Power Distribution including installation and commissioning
- ☐ Engineering, Procurement, Construction (Management) (EPC/EPCM)

WHY SPBEC?

- ❑ Client orientation that allowed a growth from 1 to 600 employees in 20 years
- ❑ Innovation focus supported by cooperation with universities
- ❑ Experience with flagship **European/international companies** and their requirements
- ❑ Deep knowledge of the **Russian/CIS markets** (e.g. russian technical standards, specific documentations)
- ❑ Readiness to conduct projects in “difficult countries” anywhere in the globe
- ❑ We are ready to present our solutions **exactly for your plant/manufacture after object inspection**

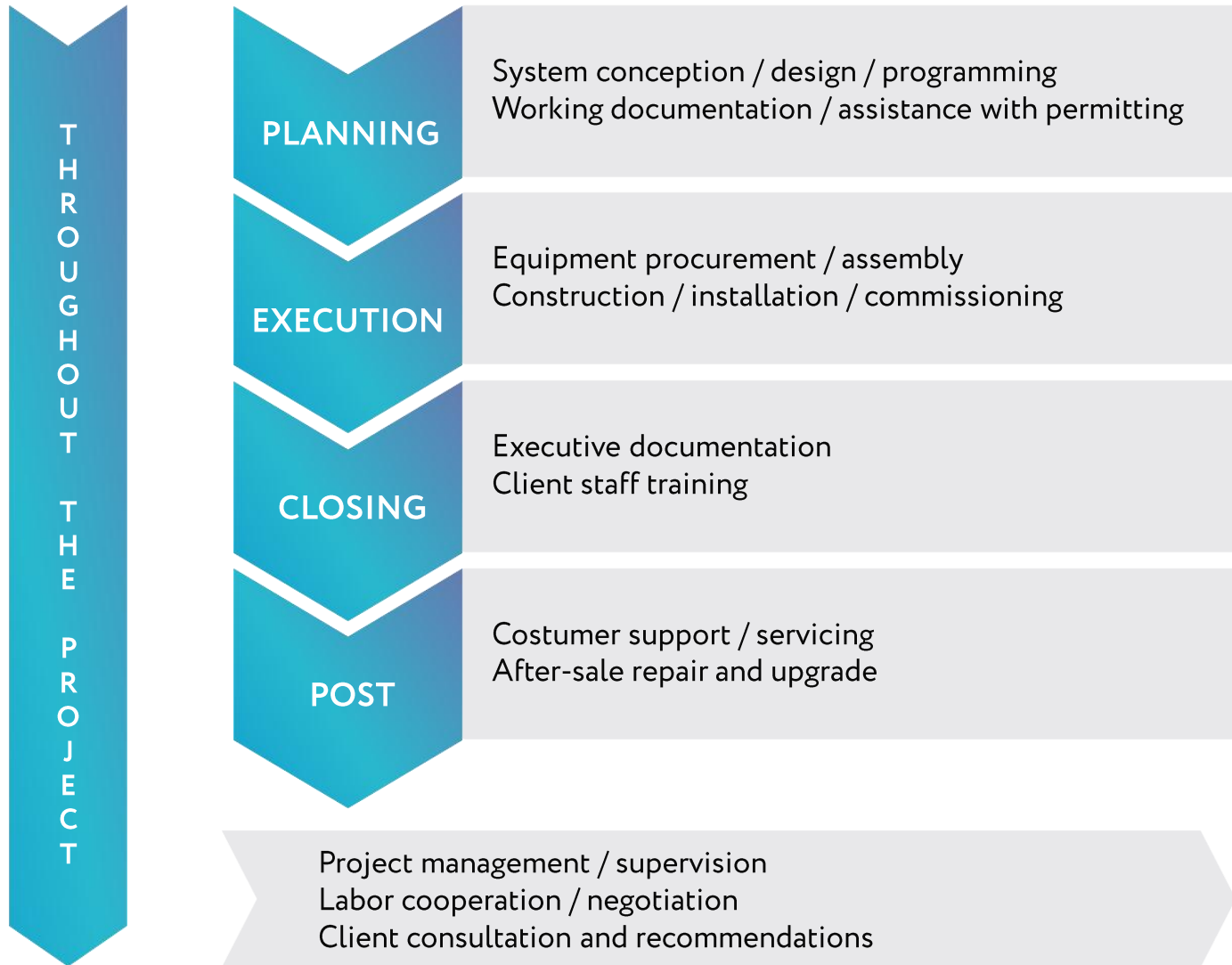


OUR EXPERTISE

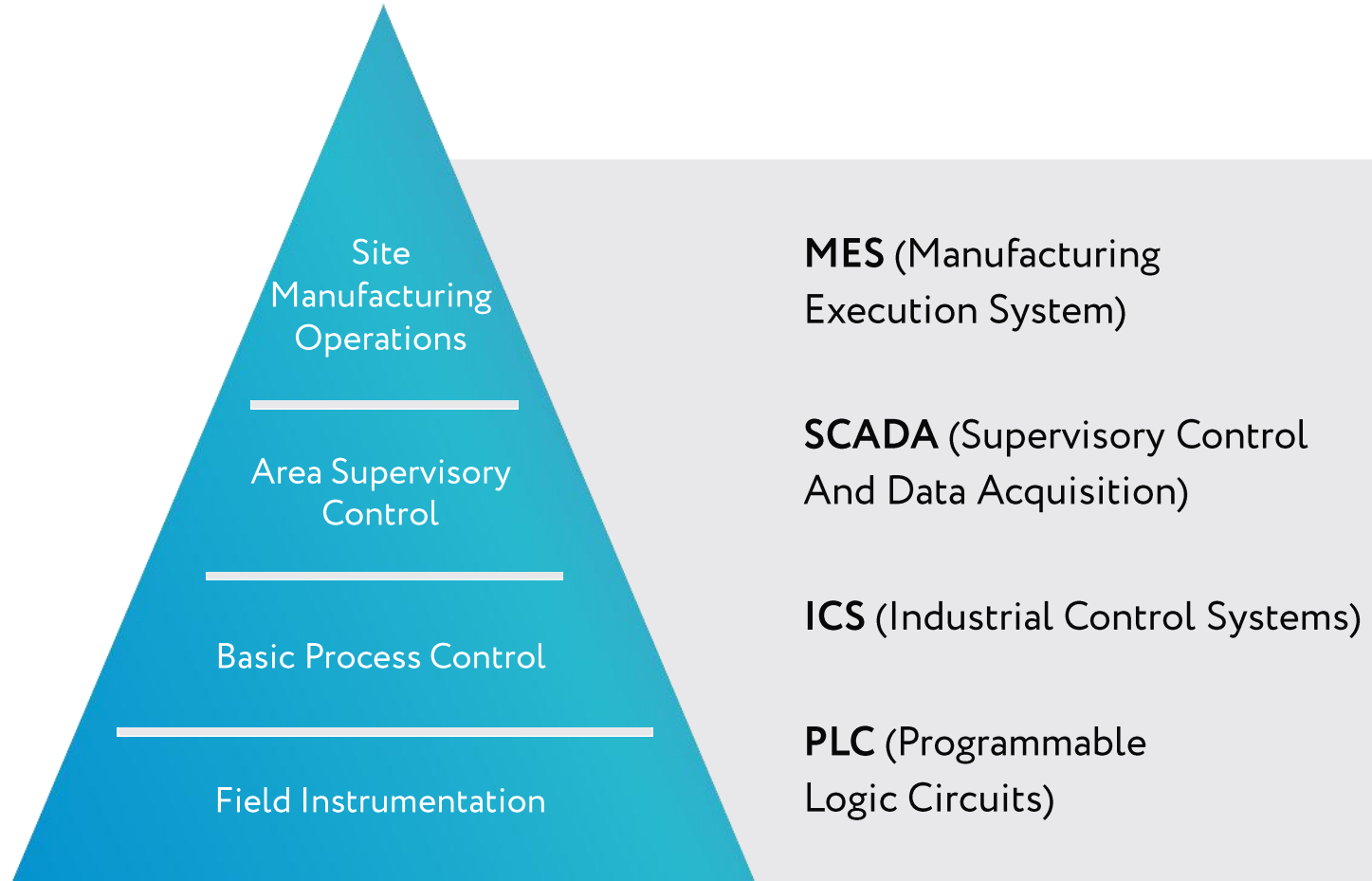


* Engineering, procurement, construction management

ENGINEERING / EPC / EPCM / TURN-KEY SOLUTIONS



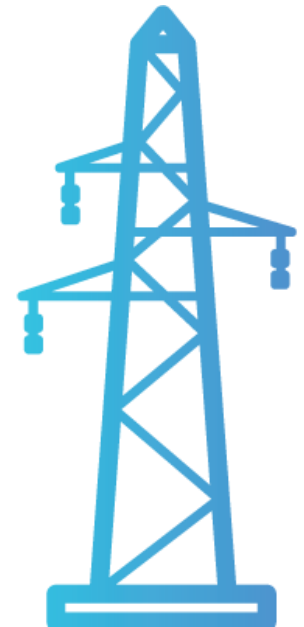
AUTOMATION



PROCESS AUTOMATION | MANUFACTURING AUTOMATION

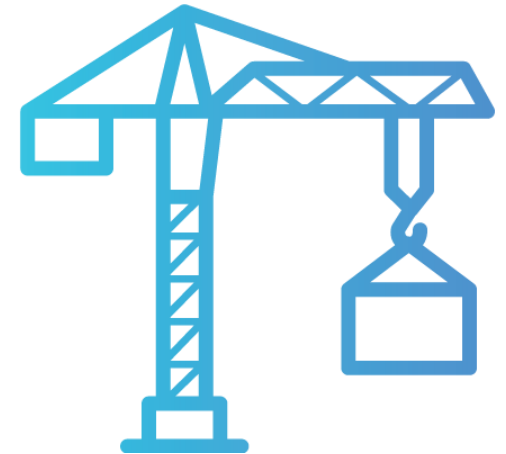
ELECTRIC POWER DISTRIBUTION

- ❑ Complete power distribution systems with 35-10-6-0.4 kW voltage (transformers, transformer substations, switch gears and control gears, KSO, relay protection, diagnostic equipment, etc.)
- ❑ Reduced-current start devices
- ❑ Infrared heating systems (infrared radiant burners, emitting heaters, gas-fired air heaters, warm air curtains, etc.)
- ❑ Creation of a facility's own power generating capacity and improving energy efficiency

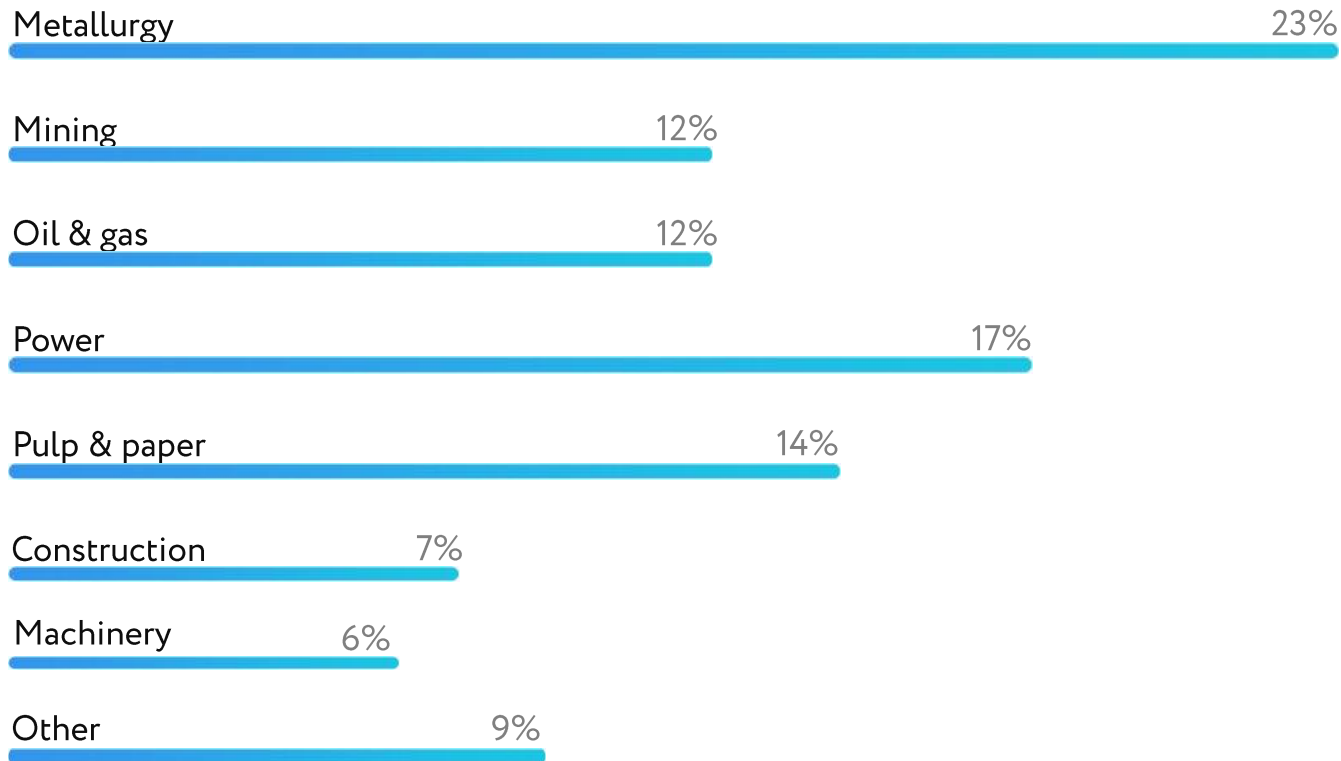


CONSTRUCTION

- ☐ Design and development works
- ☐ General contracting and construction works
- ☐ Serving as a technical customer
- ☐ Preparation and commissioning of facilities
- ☐ Warranty and service facilities

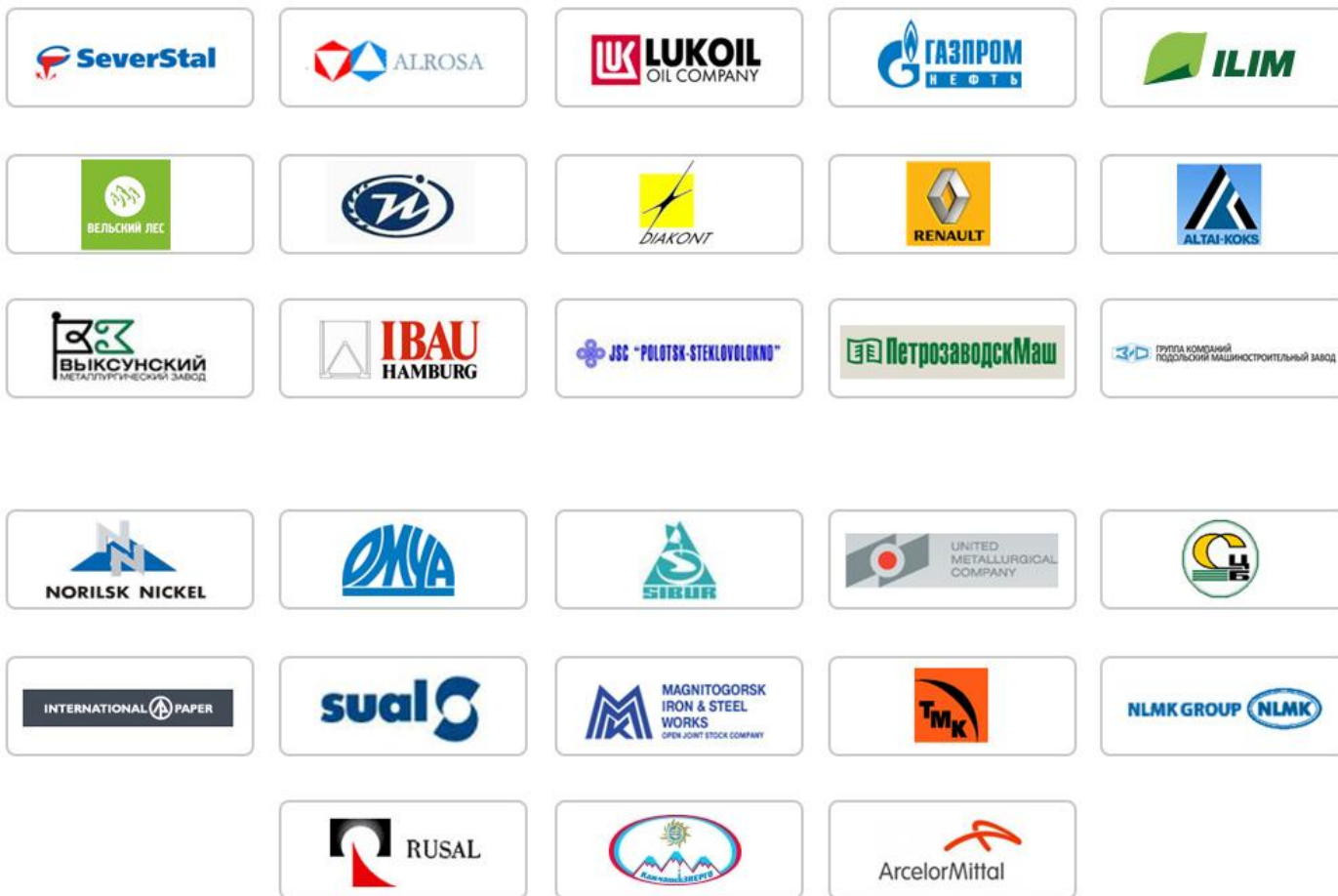


DISTRIBUTION OF PROJECTS BY INDUSTRY



Automotive, Cement & Glassworks, Chemicals, Consumer Goods, Food & Beverage, Woodworks

A SELECTION OF OUR CLIENTS



OUR REGULAR SUPPLIERS

The ABB logo consists of the letters 'ABB' in a bold, red, sans-serif font.The TROLEX logo features the word 'TROLEX' in a bold, black, sans-serif font, with a stylized blue 'X' at the end.The Danfoss logo is written in a red, cursive script font.The Schneider Electric logo features the word 'Schneider' in green and 'Electric' in a smaller green font below it.The SIEMENS logo is written in a bold, blue, sans-serif font.The Rockwell Automation logo features the word 'Rockwell' in red and 'Automation' in black, both in a sans-serif font.The EMERSON Process Management logo features the word 'EMERSON' in white on a blue background, with 'Process Management' in a smaller white font below it.The GE logo is a blue circle containing the letters 'GE' in a white, stylized font.The SAB logo features the letters 'SAB' in a bold, black, sans-serif font, with 'SÄGEWERKSANLAGEN' in a smaller font below it.The RITTAL logo features the word 'RITTAL' in a bold, black, sans-serif font, with a colorful graphic of horizontal bars above it.The Basler Electric logo features a stylized 'B' logo followed by the words 'Basler Electric' in a sans-serif font.The hecker MINING SYSTEMS logo features the word 'hecker' in a bold, black, sans-serif font, with 'MINING SYSTEMS' in a smaller font below it.

INTERNATIONAL PRESENCE

CIS countries

Kazakhstan We have implemented major joint projects with PAUL WURTH (blast-furnaces), SCHENK PROCESS (a charge preparation line) and SMS SIEMAG (converter production) at a metallurgical plant of Arcelor Mittal Temirtau JSC, Kazakhstan.

The projects in Kazakhstan include the creation of an automated process control system for hydrocyclone units for Kazakhmys Corporation LLP, a package of power supply, control and grinding mill automatic control works in Zhayrem for Loesche GmbH, etc.

Belarus The automation of an electric arc furnace for Republican Unitary Enterprise (RUE) Byelorussian Steel Works.

PM-14 integrated production line for slitting machines and a transport and packaging line for Republican Manufacturing Unitary Enterprise (RMUP) Newsprint Mill, Škloŭ, and other projects.

Ukraine A package of measures for the development of “a data recording system for an outer covering line” for NTRP OJSC, Dnepropetrovsk. Supply of hot spares and diesel generators for Westron LLC, Kharkiv, and other projects.

Europe

Reconstruction of an automated system for blast furnace Iskenderun Iron & Steel Works Company, Turkey. Commissioning works for Schnider Electric, Norway, and EFANSA SISTEMAS DE CONTROL, S.A., Italy. Troubleshooting for Maersk, Spain, and other works.

Asia&Near East

Works on the restoration of the automated blast furnace system for Iskenderun Iron & Steel Works Company in Turkey. The company has carried out commissioning works in Thailand for General Electric, in Pakistan for GEPower (Thermodyn), in Georgia for Alstom, in Korea for Sakhalin Energy Investment Company Ltd. and in Qatar for QEWC.

Together with FreyIngenieure, SPBEC experts have worked to program controllers for a car leak testing conveyor line for an Audi factory in China. The company has also accomplished project for Darunt's hydroelectric power station in Afghanistan, ACS underground complexes and systems of tape conveyors for Kuzidong of the Chinese power concern SDIC, commissioning for the YBA Kanoo and Invensys companies in Saudi Arabia and for Azerbaijani JSC Azerboru. Software installation within the project at the Taewoong facility Ltd, work on production equipment: arc steelmaking

Furnace, ladle furnace, VD, steel casting, loading and unloading operations, in South Korea, Busan.

Africa

The company's experts have performed commissioning works in Nigeria for Rockson Engineering, in Algeria for Fertil SPA, etc.

South America

The SPBEC-MINING Division which specializes in mining projects is actively developing its business in Chile in partnership with Becker Mining System GmbH.

SOME REFERENCE PROJECTS BY INDUSTRY

* More information about other projects you can find at <http://www.spbec.com>

METALLURGY

1. Automatic process control systems (APCS)

2. Energy conservation:

- Automated electric drive systems
- Synchronous motor and generator excitation systems
- Automated power resource control-and-recording systems
- Complete power-distribution devices



METALLURGY

REFERENCE

Sintering – APCS material traffic with realization of continuous weighing conveyor

Blast Furnaces – turnkey projects of modernization of 6 furnaces starting from the track feed to the control top-loading systems and stoves

Steelmaking – APCS for converter process, preparation charge

Rolling – APCS for collecting roller table, reel group, hot rolling mill 2000 harvesting group, mill 5000, and various support mechanisms



METALLURGY

JSC IZHORA PIPE PLANT

Deovalization's installation pipes UDC 200

JSC SEVERSTAL CHEREPOVETS – CHERMK

Hardware-software complex of industrial control system "Plavka"
(PAK of industrial control system "Plavka")

JSC ARSELOR MITTAL TEMIRTAU

Automated management of technological process of the Blast furnace No. 2

CHELYABINSK ELECTRIC STEELWORKS

Industrial control system of a dosage and path of PTS of a transfer charge, shop No. 7

JSC VOLZHSKY PIPE PLANT

Replacement of cupboard electric equipment of thyristor converters drive of rolls 1-4 mill stand of MPM



MINING

WE OFFER:

1. Automated equipment in the systems of Online Dispatcher Control of mining enterprises with an underground or open-cut mining (Automated Online Dispatcher Control System)
2. Power Feeding Equipment (220/110/6/0.69/0.4kV): surface and underground mine distribution substations, transformer plants, multifeeder compact control stations and frequency drivers
3. Wireless Emergency Alarm Systems for underground mining
4. Monitoring systems for staff and underground mining transport, produced with domestic or imported equipment
5. Gas Protection System and equipment for gas checking in underground mines and pits
6. Railway Vehicles Motion Control System for underground mining (Automated Control System of Signals and Interlocking of electrical haulage)
7. Automated Control & Protection Systems for main pumping and auxiliary appliances of the mines
8. Shaft Communication & Signals Systems of hoisting plants
9. Closed Circuit Television Systems both for an underground or open-cut mining
10. Control systems for mine-mill equipment and facilities, located at enriching and crushing and sizing plants
11. Underground Communication Systems and Equipment (incl. public address system)
12. Automatic Fire Extinguishing & Fire Alarm Systems (for surface and underground facilities)
13. Mine fixed plants, located on the surface or under ground: hoisting plants, ventilation plants, calorifer plants, compressor plants, main and auxiliary pumping facilities and etc.
14. Mine and surface conveyor transport with crushing plants
15. Ready-to-operate block-modular boiling, heating, pumping stations
16. Air-heating units using gas and coal heat generators without any liquid heat-transfer agent

MINING

JSC ALROSA - MINE «MIR»

- Expansion, opening and working off of sub career stocks to a mark 615m. Objects of a superficial and underground complex. First start-up complex. System of power supply 110/6,3/6,6kv

- The authorized system of dispatching management of underground mine Installation and construction works, development of production schedules with examination of industrial safety and performance of commissioning on objects Mir Mine

ALROSA GROUP, DIAMOND FIELD OF M. V. LOMONOSOV

Complex works on systems of automation and power supply

JSC NORILSK NICKEL MMC

ACS of the alarm system, centralization, blocking of underground railway transport

CHINA ENERGY COMPANY SDIC, KUZIDONG MINE

ACS of underground complexes



PULP & PAPER

1. Electric drives

- ❑ multimotor drive of paper making machines, cardboard making machines, drying machines and rewinders
- ❑ complete switch gears 10/6/0.69/0.4 kV
- ❑ complete variable frequency converters
- ❑ smooth start devices
- ❑ electric motors excitation system

Upgrading of paper making machine electric drive automated control system allows to gain:

- ❑ increase of operating velocity
- ❑ increase of operating reliability
- ❑ implementation of modern methods of electric drive system operation visualization, diagnostics and archivation of parameters

2. Control systems

- ❑ automated process control systems
- ❑ quality control systems
- ❑ dispatch systems

Upgrading of control system is a crucial task at pulp and paper making facilities. It helps to hit the following targets:

- ❑ increase of product quality
- ❑ provision of continuous operation of equipment
- ❑ reduction of operating expenses
- ❑ presence of diagnostics
- ❑ provision of possibility of integration with information system of the facility

3. Power supply to industrial facilities

- ❑ power supply systems 110/35/10/6/0.4 kV
- ❑ generators and electric motors excitation systems

Our company manufactures modern digital quick-response excitation systems, intended for installation at synchronous generators and motors.

Advantages of use of excitation systems in pulp and paper making industry:

- ❑ decrease of number of unscheduled stops of power plants
- ❑ increase of operational reliability of equipment
- ❑ decrease of requirements for level of technical competence of duty shifts due to simplicity of systems control and switch-on
- ❑ possibility to perform remote control in APCS mode

PULP & PAPER

JSC ILIM GROUP, KORYAZHMA

BDM-1, BDM-6, PRS-2, PRS-4. A complex control system of the automated electric drive. BDM-2, BDM-5. Replacement of a control system of quality



PAPCEL A. S. JSC SUKHONSKY PULP AND PAPER MILL

Reconstruction of power supply system , electric drive and APCS of PM and molded pulp plant of PM installed anew. Project, equipment supply, installation supervision, commissioning.



PULP & PAPER

JSC MONDI SYKTYVKAR

PM 14 - line package management system.

PM-21 Integrated Management System automated electric drive.

PM-11 Reconstruction of the drive.

JSC SPB KPK

Modernization of the automated control system for data cultivation of mill KDM1.

System of power supply and ensuring smoke removal of a warehouse of waste paper with fire signals of system and cellulose. A complex of works on design, delivery and installation of the automated information and measuring system of the technical accounting of electric energy

JSC SEGEZHSKY PULP AND PAPER MILL

Modernization of system of visualization of technical parameters on No. 10 airborne combat vehicle, Technical audit of system of the automatic electric drive



MACHINERY

1. New construction

2. Technical upgrade

3. Repair

4. Management of requirements of Rostekhnadzor

ENGINEERING

- Site surveys
- Development of the Terms of Reference and Feasibility Reports
- Development of documents at the Design and Detailed Design stages
- Expert review of the developed documents
- Designer supervision
- Technical supervision of gas distribution and supply facilities

EQUIPMENT MANUFACTURE AND ASSEMBLY

- Metalworks
- Gas and air supply systems
- Furnace thermal setting
- APCS
- Separate smoke removal systems

COMMISSIONING ACTIVITIES

- Software development
- Obtaining permits from Rostekhnadzor agencies
- Testing
- Personnel training
- Service and post-warranty support

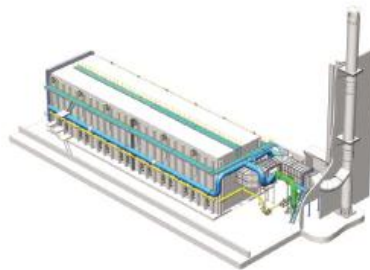
MACHINERY

TECHNICAL SOLUTIONS

1. Gas supply
2. Air supply
3. Thermal setting
4. Smoke removal system
5. Apcs
6. Software

TECHNICAL UPGRADE OF OBSOLETE EQUIPMENT

1. Metal heating cost reduction
2. Lining heating cost reduction
3. Power consumption reduction



MACHINERY

PETROZAVODSKMASH

Construction of a new 3.2 x 11.0 m bogie heat-treatment furnace
at the main coolant pipeline site
technical upgrade of electric heat-treatment furnace sdo 14.28.10/12
at the welding facility

JSC VOLGOGRADNEFTEMASH

Technical Upgrade Of A 7.4 X 38.7 M Bogie Heat-treatment Furnace for Ksts-6

JSC URALMASHZAVOD

Construction of three new bell-type heat-treatment furnaces in shop no. 39/3

OJSC VOLZHSKY PIPE PLANT

Technical upgrade of heating and drying stations for tundishes and ladles in the electric furnace shop



ГРУППА КОМПАНИЙ
ПОДОЛЬСКИЙ МАШИНОСТРОИТЕЛЬНЫЙ ЗАВОД

ENERGY

OJSC APATIT

- Construction of 150 kV power substation
- Reconstruction of the heating and hot water supply systems and construction of modular electric boiler

JSC ZAPSIBNEFTEKHIM (SIBUR HOLDING)

Construction of substation of 110/10 kV in Tobolsk

JSC IRKUTSKENERGO

Expansion of the automatic system of dispatching technological management (ASDTM) pump stations.

OJSC FORTUM

Chelyabinsk CHPP-3. Introduction of an automated control system of the additional pump unit of the peak boiler room.



ENERGY

JSC TGC-1 KOLSKAYA

The control system of hydraulic units shaft runout

JSC KOLYMAENERGO

Implementation intrabuilding warning system for the needs of the branch "Kolymskaya HPP I.Frishtera"

JSC SEVKAZENERGO

Petropavlovskaya CHP-2. Reconstruction of the electrical part of the clarified water pump number 2, JSC "OGK-3" Kharanorskaya TPP. Upgrade ACS 3, modernization LSAU

JSC E.ON Russia

Berezovskaya TPP. Design work on the replacement of motor fuel area.

JSC OGK-2

Krasnoyarskaya TPP -2. Reconstruction of relay protection unit №7

JSC KAMCHATSKENERGO

110/35/10 kV Kavalerskaya substation. Upgrade of 110/35/6 kV "Kavalerskaya substation "



ГРУППА КОМПАНИЙ
ПОДОЛЬСКИЙ МАШИНОСТРОИТЕЛЬНЫЙ ЗАВОД

AUTOMOTIVE

VOLKSWAGEN GROUP RUS PLANT

Car leak test: equipment supply, installation, commissioning.



RENAULT

System of ensuring reliability of bolted connections
Control system of screw gun on the basis of the Siemens
controller in shop of assembly



OIL AND GAS

JSC TRADING HOUSE LUKOIL

Delivery, installation and construction works of two complete systems of high-speed automatic input of a reserve between sections of 6 kV



JSC GAZPROM, JSC GAZAVTOMATIKA

Industrial control system of the main gas pipelines on a site of JSC Gazprom transgaz Saint-Petersburg Arrangement of Apt-Albsky deposits of a site of Bear GKM. System of fire safety and control of the Gas contamination. Arrangement of Senoman-Aptsky deposits of Bovanenkovo oil and gas field.



CEMENT & GLASS WORKS

IBAU HAMBURG (GERMANY)

Automated control system of pneumatic conveying equipment with pump IBAU.



JSC POLOTSK-STEKLOVOLOKNO (BELARUS)

Modernization of a control system and power supply by production of compressed air at compressor station of plant. Delivery of the complete automated system of the compressor No. 3.



CHEMICALS

ALTAI-KOKS

Coke pusher machine upgrade

Leveler beam drive

Ram beam drive

Positioning system drive



PHOSAGRO

Removal of cable lines from the impassable cable duct

ACS with electric drive and power supply of the water rotation cycle No. 7 / 2A for installation of weak nitric acid



CONSTRUCTION

VELSKY WOODWORKING COMBINE. TRADEMARK "VELSKY LES™"

Construction of "turnkey" sawing shop.



NOVARTIS NEVA

General in a row and architectural supervision "to a redesign of scientific-industrial complex on development and production of medicines"



SHIPBUILDING

THE MINISTRY OF INDUSTRY AND TRADE OF THE RF

Federation Development of technology and creation of a prototype of ship power installation on the liquefied natural gas for a vessel equipment of the internal and mixed swimming.



VALUE ADDITIONS OF OUR SERVICES



Reductions in electricity
use



Reduction in water
usage



Manufacturing that
meets environmental
standards



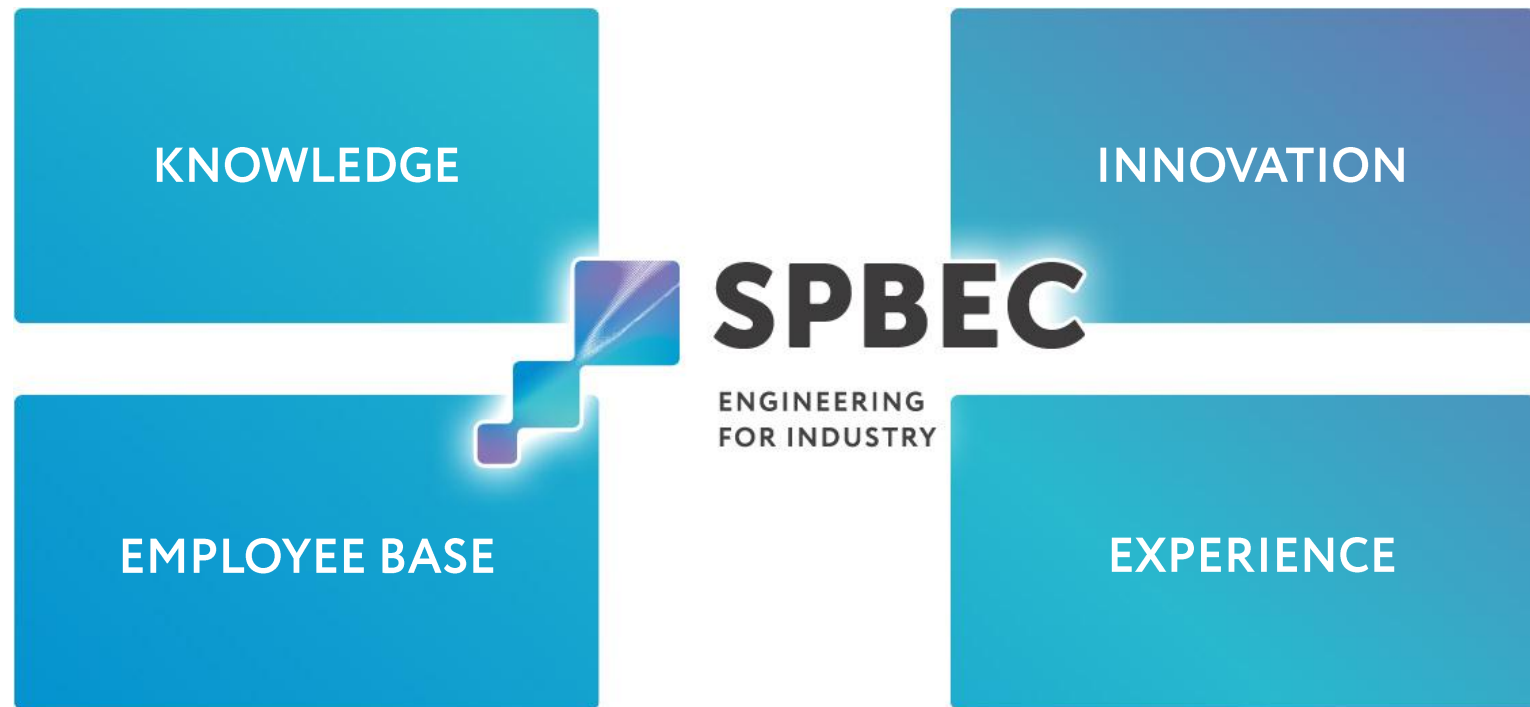
Improved worker safety
in the production
facility



Lowered production costs

SUMMARY STATEMENTS

SPBEC is a reliable, local source of expertise for companies with factory operations or interests in Russia and the CIS. SPBEC completes projects to international standards by accessing the knowledge and creativity of its workforce.



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THANK YOU!

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