

ENSECO

Building the World
Powered by Safe, Affordable
and Clean Energy





Experts on Nuclear Power



Attention to Quality and Detail



Some of our top references:

Slovenské elektrárne, a. s.

ŠKODA PRAHA, a. s.

ŠKODA JS a. s. organizačná zložka

VUJE, a. s.

VÚEZ, a. s.

PPA CONTROLL, a. s.,

**SAT Systémy automatizačnej techniky,
spol. s r. o.**

Siemens, s. r. o.

Vaillant Industrial Slovakia, s. r. o.

Duslo, a. s.

Svet zdravia, a. s.



Top Quality Mechanical Engineers

- + Centrum pre vedu a výskum, s. r. o.
- + ENERGOMONT s. r. o.
- + Ing. PETER ČARNÝ – ABmerit, spoločnosť s ručením obmedzeným
- + INŽINIERSKE STAVBY, a. s.
- + Jadrová a vyrad'ovacia spoločnosť, a. s.
- + KLIMAK, s. r. o.
- + PPA ENERGO, s. r. o.
- + SES BOHEMIA ENGINEERING, a. s., Česká republika
- + UNI-MONT, montážne práce s. r. o.
- + ZAT, a. s., Česká republika
- + ŠKODA SLOVAKIA, a. s.

ENSECO



Project Management

We offer project management for all types of jobs from a simple delivery up to complex EPC contracts. Project managers work closely together, supported by the company management. When managing international projects, we can provide experts able to communicate in English.



Development of a project organizational breakdown structure and assembling a work team

Planning and managing activities using Primavera

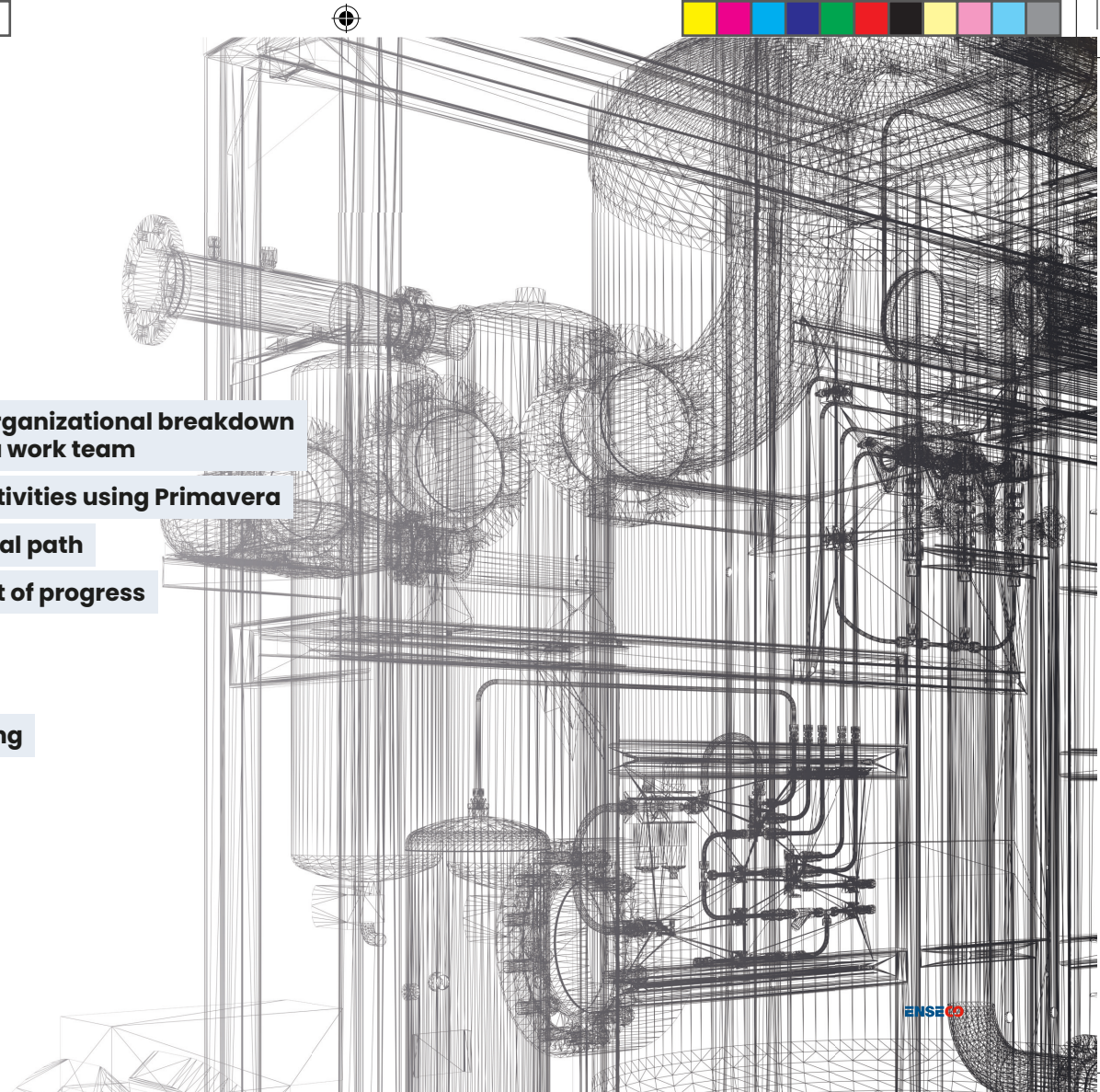
Planning the project's critical path

Monitoring and assessment of progress

Quality control

Cost control

Administration and reporting



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Engineering

We will assist you with the decision-making process concerning your energy sector investments by preparing conceptual designs and feasibility studies.

- + Assessment of technical feasibility
- + Assessment of economic feasibility
- + Assessment of legal feasibility
- + Assessment of time required for the business plan

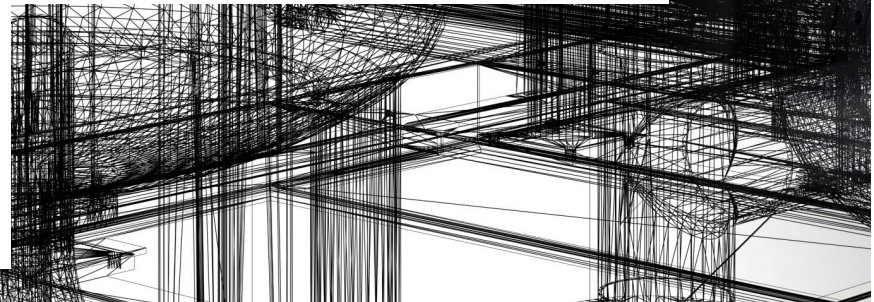




We will prepare complete design documentation for all stages of the project (technological, electrical and I&C parts).

We prefer systematic and structured approach to our work.

- + Documentation submitted with the application for issue of the urban planning decision, building permit, detailed design, as-built documentation and design changes
- + Technological part construction documentation
- + Calculations and analyses
- + 3D model using AutoCAD Plant 3D
- + Energy audit
- + Construction organization project
- + Occupational health and safety plan
- + Necessary permits, certificates and declarations for construction
- + Designer and technical supervision
- + Consulting and expert reports in energy sector

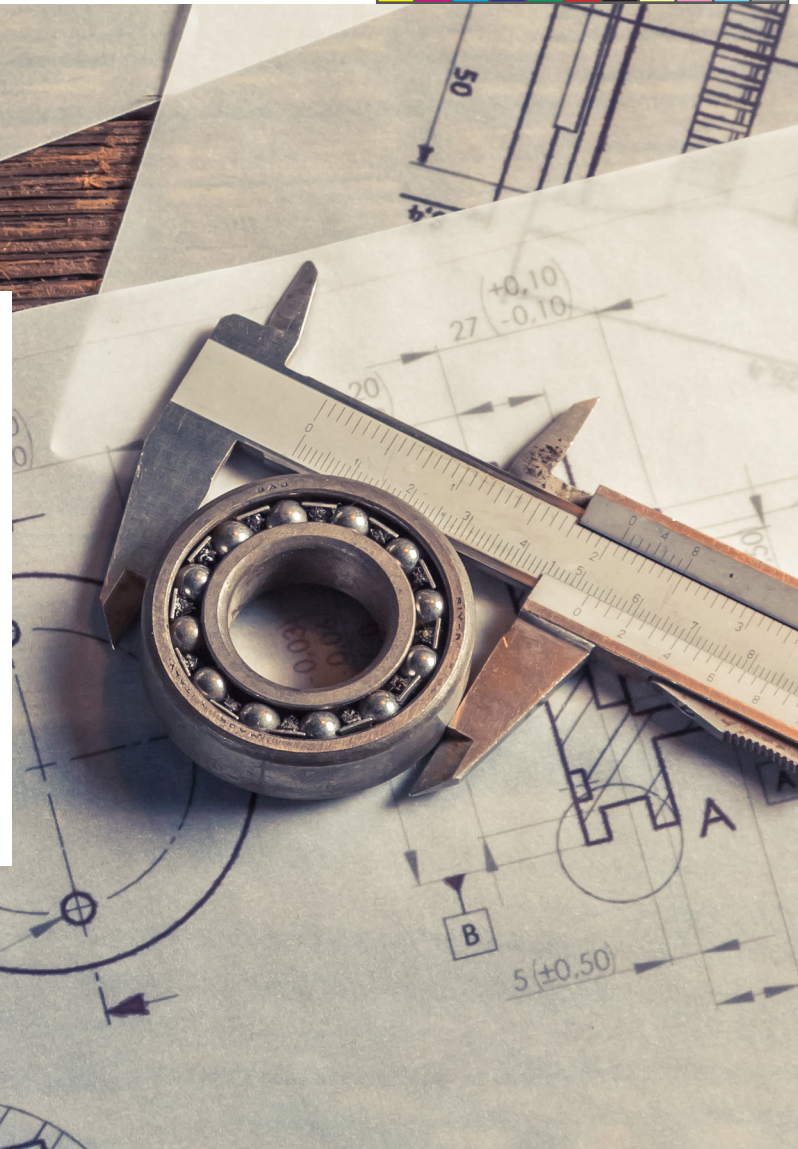


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KP SAG – KRÁLOVOPOLSKÁ STRESS ANALYSIS GROUP s. r. o.

Our portfolio of services is enhanced by KP SAG, our subsidiary, focusing on detailed designs, strength calculations and other analyses. Our new team is made up of skilled and experienced designers, mechanical engineers, structural engineers and engineering calculation specialists for fittings, pipes and steel structures.





3D laser scanning

- + An important factor in project progress is a thorough examination of all the necessary inputs, including the actual spatial arrangement of the necessary parts of the existing technology.
- + TRIMBLE X7 is a highly sensitive 3D scanner that can record complex parameters of real objects and then display their exact visualization and location in the local coordinate system. With the known S-JTSK points, we can also place the scan in the national geodetic network.
- + The scanner operator scans the so-called „point clouds“, which display objects in the interior or exterior. They contain precise information about 3D dimensions, volumes, as well as mutual spatial arrangement. A technological innovation in the field of scanning is the ability to capture highly reflective objects and hard-to-reach places that have been difficult to capture so far (radiance, inaccessible terrain, danger of approaching the object, etc.).
- + With the subsequent processing using modeling software and display technologies, you get visualization in commonly available formats and outputs, without the need to use additional paid software.



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Technical Preparation of Construction, Mounting, Machining and Installation Works

We provide technical and professional assistance with the preparation and execution of the project, all stages of design documentation and all relevant permits. We can assist you with finding a suitable manufacturer and provide all related activities. Our activities range from the technical preparation of construction and

installation to the actual installation and machining works. We can prepare a manufacturing schedule, as well as logic sequencing and coordination of individual works with links to functional and complex testing within the frame of applicable legislation and client's requirements.



Services not only for energy sector

In-house fully equipped workshop

Technical preparation of construction

Assembly management and performance

Manufacture and installation of piping insulations

Valves – operation, maintenance, repairs of rotating machines



- + Preparatory works are carried out at our in-house workshop
- + Our machines are operated by highly qualified employees
- + Manufacturing and installation of thermal insulations
- + We use top quality instruments and technological equipment

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Manufacturing and installation of piping insulations

- + Complex sheet metal working services including surveying, bidding, consultancy, material supply and installation of sheet metal systems plus warranty and post-warranty service
- + Thermal insulation, cold insulation, HVAC distribution systems
- + We use the latest technology (MABI Bingo 16-Z EVO, MABI Logo, MABI 4B, MABI 4QS)
- + Sheet metal parts processing is done using METALLKRAFT® equipment and equipment procured from První hanácká BOW, spol. s r. o., Bři Švarcové, s. r. o., SEMET, s. r. o., etc.





Valves – operation, maintenance, repairs of rotating machines

- + Preparation of sealing programmes, torque calculations, designing gaskets – NOVADISC 7
- + Manufacture of flat gaskets novaphit® MST up to $\varnothing 1450$, larger dimensions by waterjet cutting
- + Diagnostics of rotating machines, valves and bearing by certified workers, vibration diagnostics
- + Alignment, mounting of rotating machine frames, inspections of alignment
- + Reconditioning of mechanical seals, sealing faces of valves – planar and conical, gate valves, check valves, flanges
- + Repairs, reconditioning and maintenance of rotating machines and equipment, replacement of gaskets, oil and bearings
- + Technical support and expertise during commissioning of new and reconditioned rotating machines and equipment, trial run and functional tests



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Quality Control

We control the performance and supplied material so that you get a top quality project or technology. In addition to works supervision and relevant inspections, we prepare complete quality documentation, starting with inspection and test plans, through WPS, WPQR, to classified equipment quality plans and accompanying technical documentation. Based on the certificates obtained by our inspection technicians, we are authorized to supervise manufacture and installation of pressure and gas equipment, as well as conduct pressure tests and revisions. We provide our services both in the EU, as well as in third countries, always in compliance with local standards and legislation.





**Execution, documentation,
supervision**

Certified welders

**PMI using in-house
spectrometer**

One of the core services is welding, where we adhere to national, European and international standards. We provide not only welding, but also complete welding documentation, welding supervision and all necessary testing of weld joints, equipment and structures. We are ready to provide our welding activities both as a part of a service package, as well as a separate service.

Positive Material Identification is performed by a mobile optical emission spectrometer (OES) that provides quick and accurate classification of materials and accurate analysis of chemical composition of metallic materials directly under operational conditions. Our employees have been specially trained for its operation.

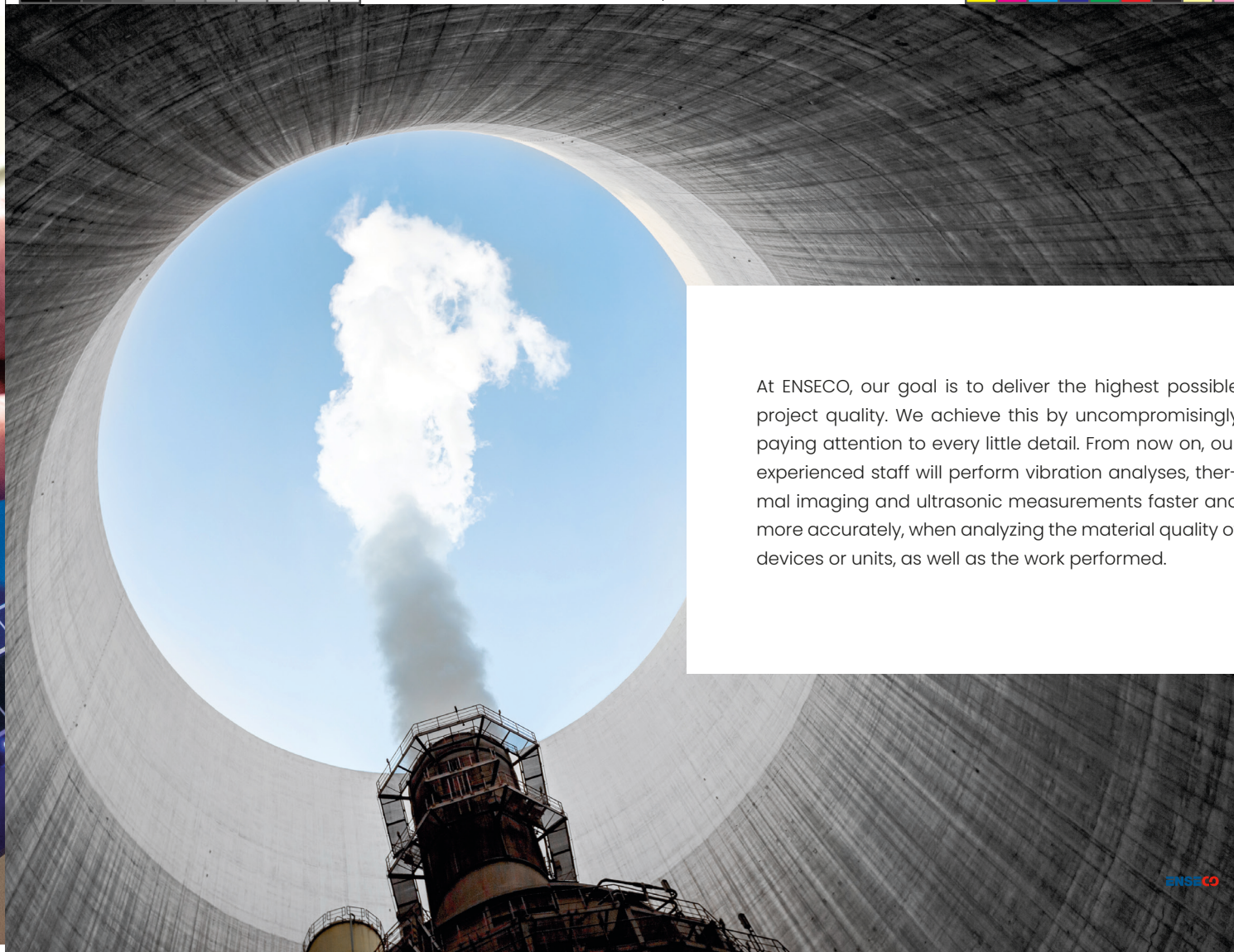
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Vibrodiagnostics

- + We often do vibrodiagnostics. It is a part of rotating machines, devices and bearings tests. Wherever we install something new or evaluate the condition of operating equipment. The services we offer start with post-assembly inspections. However, we are equally good at diagnosing devices even during their operation.
- + The ADASH VA5PRO device ensures the collection and immediate analysis of a large number of parameters, such as vibrations, balance, deformations analysis, fault detection, sound and ultrasound analysis, stethoscope or lubrication monitoring. It helps to perform more accurate and faster measurements, faster on-the-spot analysis, predictive maintenance programs and analysis of all information, even continuously over time using state-of-the-art software.





At ENSECO, our goal is to deliver the highest possible project quality. We achieve this by uncompromisingly paying attention to every little detail. From now on, our experienced staff will perform vibration analyses, thermal imaging and ultrasonic measurements faster and more accurately, when analyzing the material quality of devices or units, as well as the work performed.





Technological Systems Commissioning

System commissioning breathes life into the installed equipment. These activities can be carried out only by a narrowly specialized group of employees, capable of organizing the commissioning of these complex systems and making important technical decisions in the commissioning process. We know how to test and start up any technological system, regardless of whether it is a nuclear facility, non-nuclear power facility, or other

technological equipment. This phase contains development, management and execution of pressure test programmes, post-installation cleaning operation programmes, functional test programmes for technological units/systems across the professions.



IT Services

Our IT services complete the entire work process. The idea takes shape of an application or a system in compliance with your requirements. We offer database systems operating experience, as well as consulting and finding optimal solutions. We provide these services also individually.

Programming is the final phase of development and assembly of the ordered technology, going hand in hand with the commissioning and supporting the control of all functional processes. Our clients appreciate that the IT part of their project is handled by the same company that planned, installed, tested and launched the project. Another indisputable advantage is time efficiency, as well as streamlined problem solving.

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Main Project Mochovce Nuclear Power Plant

The project was executed based on the EPC contract at all stages (elaboration of detailed design documentation, procurement, installation and commissioning). ENSECO pipelines are installed across the entire nuclear island of Units 3 and 4 at Mochovce. This project is very close to our heart.



We took part in five main nuclear power plant systems:

Primary Circuit Auxiliary Systems

Radioactive Waste Treatment System

Emergency Core Cooling and Spray Systems

Radioactive Waste Management

Radioactive Waste Disposal Systems

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5

Main systems

Works involved 5 main elementary systems at all project stages.

40

Systems tested

During commissioning, we have performed non-active testing of 40 technological systems.

500

Workers

We have managed approximately 500 workers and another 250 workers under the management of our sub-contractors.

10722

Valves

We have installed 10 722 valves and our work is visible in both units of the power plant.

9646

Pipelines

We have installed a total of 9 646 pipelines in both units.

1509

Tons of installed materials

We have procured, supplied and installed materials with the total weight of 1 509 tons.

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28 t

Carbon

Pipe fittings

50 t

Carbon

Pipes

450 t

Carbon

Platforms

110 t

Carbon

Valve remote control

195 t

Stainless – 08CH18N10T

Pipe fittings

480 t

Stainless – 08CH18N10T

Pipes

80 t

Carbon

Pipe and valve support

26 t

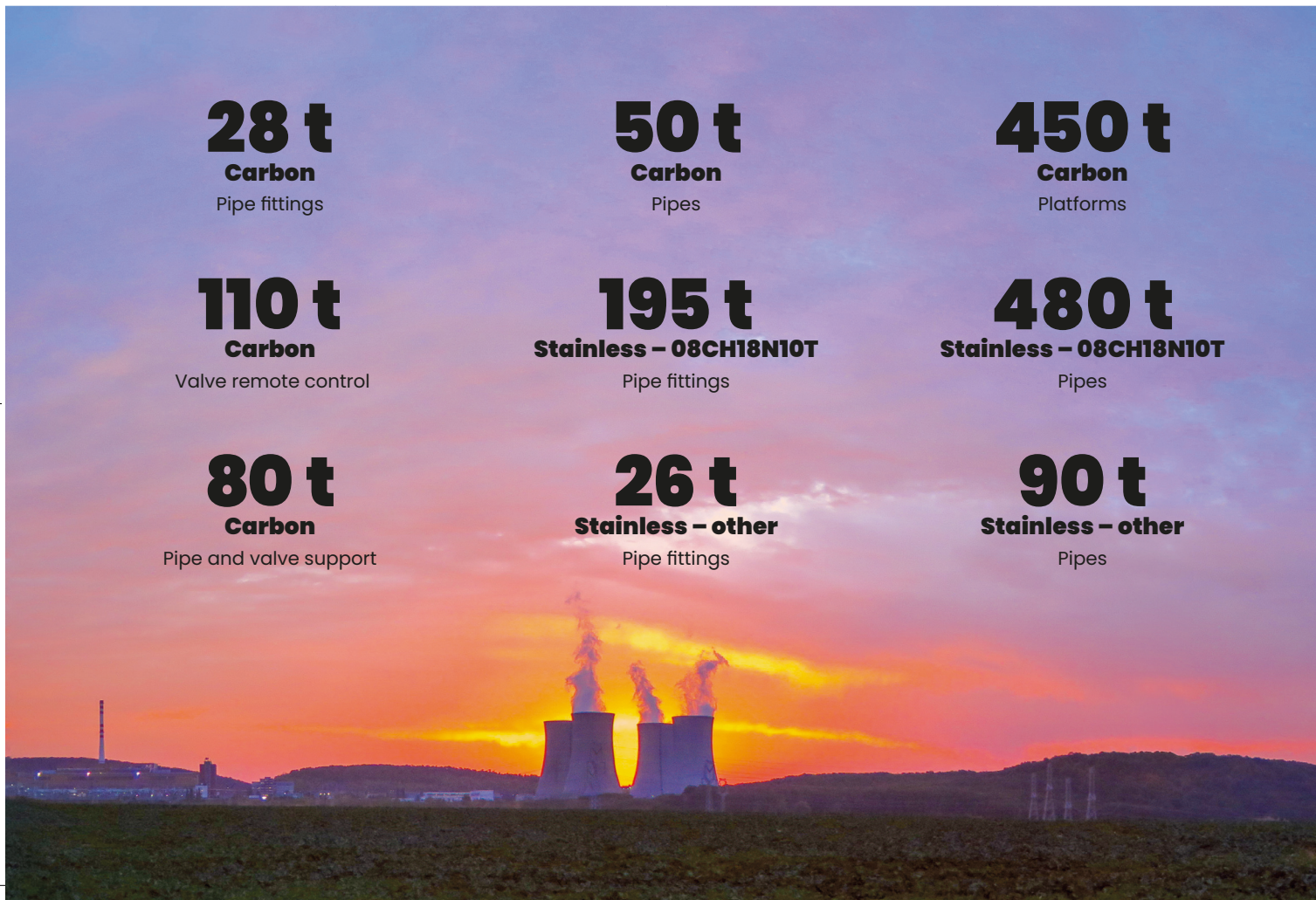
Stainless – other

Pipe fittings

90 t

Stainless – other

Pipes





+421/366 375 120



info@enseco.sk



Workplace Mochovce:

ENSECO, a. s.

P. O. Box 10

935 39 Mochovce

Slovak Republic

Human Resources

job@enseco.sk

Business and Contractual Relations

+421/366 375 400

sales@enseco.sk

Invoice Processing

invoice@enseco.sk

Registered Seat:

ENSECO, a. s.

Hollého 10/1499

949 01 Nitra

Slovak Republic

