

PROJECT PARTNER SEARCH FORM

☒ I offer my expertise to participate as a Partner in a Horizon Europe Project

☐ I am planning to coordinate a project and I am looking for Project Partners

TOPICS OF INTEREST

CALL: HORIZON-CL4-2024-DATA

CALL: HORIZON-CL4-2024-DIGITAL-EMERGING

PARTNER INFORMATION

Žilina engineering company BJ Energy, Ltd., r.s.p. – merging high certification know-how, quality, and a passion for innovation.

A, Development and Innovation

At BJ Energy, our focus is on the production and realization of ideas, designs, and visions from developers, designers, and industrial experts, transforming them from 3D models into functional prototypes. We gladly become part of the research – development – production chain, with the research results directly leading to prototypal outputs, verified for practical functionality.

Moreover, we actively participate in the production of specific prototypes, from testing to serial production, drawing from the experiences gained in the manufacturing process.

In the field of development and innovation, we offer collaboration in the following areas:

- Design and production of prototypes and models for various technological processes,
- Design and solution of technological procedures, including machinery and tool equipment,
- Development and production of devices for automation and robotic production,
- Support for projects in the field of structural funds and EU framework programs.

In the production area, we are capable of providing the following services:

- Production and testing of prototypes and verification batches of machine parts and equipment,
- Piece and small-batch precision CNC production of components,
- Structural design and preparation of drawing documentation,
- Verification and optimization of technological processes.

B, Mission and Goals

Manufacturing Area

<https://eraportal.sk/horizont-europa/>

BJ Energy - a specialist in the production of technologies, parts of technological lines, diverse weldments, and machines, as well as the production of conveyor systems. It has certified welders for MAG and TIG technologies, welding technologists IWT, and welding engineers IWE.

We focus on:

- Manufacturing of steel and metal structures,
- Production and assembly of technological equipment, steel structures, production of steel components for incinerators, tunnel technology, chassis, technical equipment for the metal industry, and more.
- Providing comprehensive engineering and locksmith services.

We utilize cutting-edge technologies and methodologies, such as the internal segmentation of flat materials using CO laser and waterjet, traditional and CNC bending, accredited MAG and TIG welding. Additionally, we offer solutions in CNC machining, laser cleansing, abrasive blasting, and industrial coating. Supplementary tasks encompass thread cutting, conventional machining, hydraulic punching, profile bending, and various other services.

Cutting materials with a laser beam is based on the use of very powerful electromagnetic radiation emitted in a thin, undiffracted beam. Thanks to the very small beam diameter, the thermally affected area is minimal. During cutting, the material melts, evaporates, or is carried away by a gas stream, or it may burn. The cut surface is of high quality. Laser cutting is suitable for dividing materials by type up to a thickness of 20 mm, especially for steel, stainless sheets, aluminum, and more. This method ensures high precision, efficiency, and cutting speed. The advantage is the creation of smooth edges after cutting, precise material cutting, eliminating the need for further processing.

Waterjet cutting is suitable for various types of materials. It is based on the intense hydro-erosive effect of a narrow high-pressure water jet. The main advantage of waterjet cutting is that it does not create a thermally affected zone of the material, meaning it does not affect the internal structure of the material and related properties. Due to the cold cut, this method can cut heat-sensitive materials such as thermoplastics, laminates, Teflon, various alloys, soft metals, and more. Waterjet cutting can also cut multilayer materials and composites. It also allows efficient material utilization, as the cut width ranges from 0.1 to 1.5 mm. No harmful by-products are generated during cutting, making it an environmentally friendly technology.

Robotic Welding

We have a robotic welding station equipped with a collaborative robot LORCH COBOT UR10, ensuring first-rate welding quality. We also use a MIG-MAG S-RoboMIG XT 400A welding source with water cooling and a nitrided welding table with clamping elements of 2000 x 1000 mm. Our industrial robot - cobot, technological devices, and other equipment perform technological operations of the manufacturing process or its parts. The welding robot can utilize various advanced welding types such as SpeedCold, SpeedPulse XT, TwinPuls XT, SpeedArc XT, thanks to the welding source. The industrial robot performs autonomous activities and is universally applicable for various precise and repeatable welding tasks within the dimension of 2000x1000 mm. With its capabilities, the robot mimics the functionality of a human hand, capable of repeating tasks with the same precision, quality, and speed.

Certified Welding

Welding services are one of the comprehensive and main services provided by BJ Energy. In addition to welding, we offer completion works and surface finishing of products. BJ Energy's manufactured machines and equipment meet the highest demands of the contemporary industry. Investments in the knowledge, skills, and certifications of our employees allow us to stand out with high-quality material welding. BJ Energy provides products and services in quality corresponding to international standards and norms. Welding quality is guaranteed by complying with the requirements of ISO 3834-2, and the quality of the production of steel and related products is certified according to EN 1090-1 EXC4 and ISO EN 15085-2 CL 1 for railway rolling stock. We also meet the requirements for non-destructive testing (NDT) conducted by authorized bodies. Tests include visual, magnetic, ultrasonic, and X-ray inspections for heavily stressed constructions and pressure vessels.

Blasting

BJ Energy has a blasting booth with dimensions of 14 x 7 m equipped with an integrated rail system. Blasting is carried out manually using steel grit and compressed air. Blasting is one of the methods for treating materials before their final processing, welding, or painting. Surface treatment by blasting is used to remove unwanted parts from the surfaces of various materials. The mechanically stable layer, oil residues, rust, and non-metallic deposits are removed by a strong air stream and abrasives. Blasting is used to remove slag after forming, corrosion and coatings from metals, cleaning the surface before and after welding, and removing sharp edges after processing. It is also effective in revealing surface material defects. Subsequently, surface roughening creates an anchoring profile, a notched relief. The result is the creation of a suitable surface for further processing – welding - painting. The blasting process itself can be adjusted according to specific requirements for blasting thickness and material type.

CNC Machining

CNC technology enables high-precision machining even for a large number of pieces. Thanks to our qualified operators, we can handle the machining of demanding parts. We perform CNC turning and CNC machining on the following machine tools: CNC Lathe Stytle 510×1500, the best lathe for individual pieces and small series CNC Milling Machine Style

Manufacturing (or testing various prototypes) of metal components, constructions of various sizes as a partner in projects with thematic diversity from various fields.

Construction
Manufacturing
Transportation and storage
Wholesale and retail trade, repair of motor vehicles and motorcycles
Electricity, gas, steam and air conditioning supply
Water supply, sewerage, waste management and remediation activities
Human health, Healthcare
Space,...

Specific skills / technologies: Expertise brought to the project by the people / department that will do the work

Description of the Legal Entity

BJ Energy, s.r.o., r.s.p. - since our establishment in 2008, we have been expanding and improving our services to meet the growing demands of our customers. Our experienced, highly qualified, and certified professional staff is ready to ensure the quality and timely completion of every project.

BJ Energy is a registered social enterprise (RSP), and its positive social impact lies in supporting employment through the employment of disadvantaged or vulnerable individuals.

Experience:

Our references (business partners):

Martin GmbH für Umwelt- und Energietechnik, Richard Kablitz GmbH, TÜNKERS® Maschinenbau GmbH, ISN Industrie Service GmbH, Rowa Tunnelling Logistics AG, JONIEC®, AM-CME s.r.o.

<input type="checkbox"/> Higher Education	<input type="checkbox"/> Research Institution	<input type="checkbox"/> Public Administration
<input checked="" type="checkbox"/> Industry /SME	<input type="checkbox"/> NGO	<input type="checkbox"/> Other: <i>Please specify</i>

Description of the (Research) Team

Ing. Jozef Bubica

- He is a manager, he has experience in managing about 30 people, for 16 years. Submitted several applications and successfully completed multiple projects.

We have experience in the field of R&I projects as follows:

Approved

1. Environmental and Economic BEnefits from Blochar clusterS in the Central area (<https://www.e2bebis.eu/>) - This project is implemented through the Central Europe Programme co-financed by the ERDF.
2. Zavedenie Integrovaných manažérskych systémov v rámci štandardov noriem ISO v spoločnosti BJ ENERGY s.r.o. (OPVal-MH/DP/2017/3.3.1-09)
3. Investment support (OP Human Resources)
4. Regional funding support (Ministry of Investments, Regional Development and Informatization of the Slovak Republic)
5. Creative vouchers (Slovak Innovation and Energy Agency)

Submitted, not approved yet or not approved

6. NFP313010CQA8 - Diversification of production BJ Energy s.r.o. RSP by introducing innovative CNC technology I4.0 in NRO (OPII-MH/DP/2022/9.5-35)
7. Increasing the competitiveness and innovative potential of BJ Energy s.r.o. through the introduction of technological standards INDUSTRY 4.0 (OPVal-MH/DP/2017/3.3.1-08)

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8. Research into the use of virtual and augmented reality in industrial applications (OPVal-VA/DP/2016/1.2.1-03)
9. Innovation vouchers
10. Participating in small challenges announced by various nongovernmental organizations (Pontis Foundation, CSOB, ...)

Ing. Daniela Hricová, PhD.

- experience with project submissions and their implementation gained during an internship at the university (Mladá veda - Pôsobenie sociálnej ekonomiky, jej význam a možnosti rozvoja v podmienkach Slovenskej republiky) and throughout employment (projects listed above).
- 60 publications published, one monograph

Our university network:

- CZU Prague
- SPU Nitra (acquired contacts during work at the university by Daniela Hricova)

Potential role in the project

- | | |
|--|--|
| <input checked="" type="checkbox"/> Research | <input type="checkbox"/> Training |
| <input type="checkbox"/> Dissemination | <input checked="" type="checkbox"/> Other: Prototyping testing, or possibly production of proposed prototypes, and similar activities. |

Already experience as a	Coordinator	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	Partner	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	Expert Evaluator	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
CONTACT DETAILS			

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