

SCOPE OF WORKS

Sulphur Conversion Enhancement to 98.5% – Project

Nr. OBL-23-2/2-007

TP-16 Power Increase

1. General information

- 1.1. In accordance with EU Directive 2014/738/EU, the Environmental Protection Plan of the Republic of Lithuania provides for a 60% reduction in sulfur dioxide (SO₂) emissions into the atmosphere. One of the sources of SO₂ emissions at ORLEN Lietuva is sulfur production facilities (four sulfur production units). ORLEN Lietuva has committed to the Lithuanian Environmental Protection Agency that it will install SO₂ reduction technology in its sulfur production facilities by 2030 in accordance with the available Best Available Techniques. To this end, SUPERCLAUS technology was selected through a price survey in 2023 and a contract was signed with Worley for the preparation of a license and a basic design to increase sulfur conversion to 98.5% in all sulfur production units. In 2023, Worley prepared a basic design for increasing sulfur conversion to 98.5%, according to which additional SUPERCLAUS sulfur conversion units will be built in each of the four existing sulfur production units. The new SUPERCLAUS units will have additional electrical equipment. ORLEN Lietuva assessed the additional electrical power requirements for the electrical equipment of the new SUPERCLAUS units and determined that the TP-74 reserve at sulfur production unit No. 2 (units No. 3 and 4) the TP-74 power reserve is sufficient to power the new electrical equipment of the SUPERCLAUS units, while in sulfur production unit No. 1 (units No. 1 and 2), the TP-16 substation power reserve is insufficient and needs to be increased.

The design, equipment supply, and installation of the new SUPERCLAUS units will be carried out in 2026-2029, but the power of the existing transformer substation must be increased by the end of the 2027 OL overhaul - 30 May 2027, because the replacement of transformers T-1, T-2, and JVS-1 can only be carried out when sulfur production unit No. 1 (blocks No. 1 and No. 2) is completely shut down, i.e., only during the 2027 Turnaround.

- 1.2. The aim of the project is to increase the capacity of the existing TP-16 transformer substation.

2. Appendices

- 2.1. Appendix No. 1 – Electrical design task OLP02233.
- 2.2. Appendix No. 2 – Requirements for contractors performing work for AB ORLEN Lietuva, available at:
<http://www.orldenlietuva.lt/LT/OurOffer/Forcontractors/Puslapiai/default.aspx>.

3. General requirements

- 3.1. The proposal must include all equipment, works, and materials necessary to perform the work specified in the scope of work. Minor works necessary to ensure functionality and project completion but not specified in the scope of work are considered to be included in the proposal.
- 3.2. The contractor shall deliver fully assembled equipment that fully complies with the requirements of this tender, including all specified drawings, standards, and specifications. The scope of supply includes all work and materials necessary for the manufacture and delivery of the specified equipment, including, but not limited to, design, drawings, inspections, tests, preparation for transport,

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packaging, loading, cargo insurance, and delivery to the OL factory at the following address: Mažeikių g. 75, Juodeikių k., LT-89453 Mažeikių r. sav., Republic of Lithuania.

- 3.3. Before starting the production of the power control panel, distribution panel, and power transformers, the Manufacturer must prepare all additional design solutions and calculations in accordance with the documents provided (Appendix No. 1). All drawings, including transportation drawings, must be submitted to OL for review and approval. The purpose of reviewing and approving the documents submitted by the Manufacturer is to ensure that the Manufacturer complies with its contractual obligations to the Purchaser in accordance with the requirements of the project documents. The fact that OL has approved the Manufacturer's drawings does not constitute confirmation by the Buyer or the Buyer's representative that the equipment complies with all codes, standards, technical specifications, and safety requirements specified in the project documents. The Manufacturer is solely responsible for the equipment's compliance with all technical and legal requirements.
- 3.4. The Manufacturer must take measures to protect the cargo from possible damage during loading/unloading and transportation.
- 3.5. All details in the drawings must be specified in millimeters.
- 3.6. Based on the technical task design agreed with the Customer, the Contractor shall perform design works, purchase, supply, installation/disassembly, commissioning, and adjustment of equipment and materials.
- 3.7. If there are any contradictions between the documents or the technical information provided in the scope of work and the annexes is incomplete, the Contractor shall immediately inform the Customer's project manager or his authorized representative and follow their instructions.
- 3.8. Before commencing work, the Contractor shall submit all environmental and occupational safety documents specified in Appendix No. 2 (e.g., occupational safety questionnaire, occupational safety plan, waste management plan, list of subcontractors).
- 3.9. Upon completion of the work, the Manufacturer shall prepare an "As-built" project version and submit 2 paper copies and 1 digital copy (in PDF, Excel, Word, etc. format), as well as all other documents (Manufacturer's data log) in accordance with the OL specifications.
- 3.10. All materials must be new. The Manufacturer must indicate the country of origin of the materials. Countries of origin acceptable to OL are the USA, Canada, the EU, the UK, and Japan. All materials must be traceable by their original alloy number. Note. The manufacturer may propose another country of origin, but such a country must be approved by OL.
- 3.11. The buyer's designated inspector has the right to visit the manufacturer's factory during the production of the equipment, but the manufacturer must ensure factory checks to ensure that the equipment meets the specifications set out in this questionnaire. The inspector must be given unrestricted access at any time to all of the Manufacturer's premises where the equipment is manufactured, factory inspections are carried out, or ordered materials are tested. Inspections carried out for the benefit of the Purchaser do not release the Manufacturer from its obligation to comply with all specified or implied specifications, nor do they

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affect the Manufacturer's warranty, which must ensure the proper functioning of the equipment under normal operating conditions.

- 3.12. The Manufacturer shall organize intermediate inspections of TP-16 JVS-1 and 16PS-1X at its factory. Intermediate inspections shall be carried out when the equipment is 70% and 90% complete. Duration – 2 working days. The manufacturer's representatives must participate in the inspection. The manufacturer must inform OL 10 days before the planned inspection.
- 3.13. The preparation of the equipment for transport and packaging must meet the following requirements:
- All equipment components must be adequately protected against corrosion.
 - Before transporting the equipment, both its exterior and interior must be thoroughly cleaned.
 - Equipment parts shall only be dismantled to the extent necessary for inspection and transport.
 - Temporarily dismantled components, bolts, and spare parts must be packed separately for transport.
 - During loading/unloading and transportation, the equipment must be protected from possible mechanical damage.
- 3.14. In order to connect electrical equipment to the electrical networks of AB ORLEN Lietuva, the Contractor shall comply with all the Customer's requirements specified in the Contractor's Safety at Work Program BDS-40. The Contractor shall perform temporary electrical connection works in accordance with instruction BE-16 (instruction for temporary connection of electrical equipment).

4. Design works

- 4.1. Replacement of the TP-16 KTP switchgear of the electrical substation, existing 6/0.4 kV 1000KVA power transformers T-1, T-2 (2 pcs.) with **1250 KVA** power transformers.
- 4.2. Replacement of existing 0.4 kV switchgear TP-16 JVS-1 and installation of 0.4 kV distribution cabinet 16PS-1X with automatic power transfer switch (hereinafter referred to as AMP).
- 4.2.1. The existing structural power supply diagram of substation TP-16 is provided in Appendix No. 4.7
- 4.2.2. Since other solutions for will be designed in the future under this project number and name, a separate project book or file No. 1 with the name "Increasing the power of transformers T1 and T2 at substation TP-16 and reconstruction of the 0.4 kV switchyard JVS-1". **Note:** detailed design requirements are provided in Appendix No. 1 to the scope of these works

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5. Scope of work and special requirements for the manufacture and supply of TP-16 JVS-1 and 16PS-1X

- 5.1. The power control panel and distribution panel must be designed, manufactured for installation at the OL work site and operated in accordance with the design requirements for the TP-16 JVS-1 power control panel and 16PS-1X distribution panel (see Appendix No. 1). The space allocated for the installation of TP-16 JVS-1 is 2300x900 mm.
- 5.2. The manufacturer must also comply with the OL specification requirements.
- 5.3. The power control panel must be supplied with automatic switches, contactors, and current transformers (see Appendix No. 1).
- 5.4. Ambient temperature: -25 °C to +70 °C.
- 5.5. During the tender, the manufacturer must provide the following technical data, measurements, and specify the type:
 - 5.5.1. TP-16 JVS-1 and 16PS-1X single-line diagram;
 - 5.5.2. TP-16 JVS-1 and 16PS-1X dimensional drawings;
 - 5.5.3. TP-16 JVS-1 and 16PS-1X sketch drawings showing the layout of the cabinets, the cells and their tops, front and side views;
 - 5.5.4. Each section of the power control panel must be designed in a separate cabinet;
 - 5.5.5. The type, model, and technical data (voltage, current, switching power, electrodynamic resistance, etc.) of the proposed equipment;
 - 5.5.6. Sketch drawings of TP-16 JVS-1 cabinets with internally installed equipment;
 - 5.5.7. TP-16 JVS-1 data and lists of equipment installed in each cabinet;
 - 5.5.8. Basic cage control diagrams;
 - 5.5.9. List of non-conformities with the above specifications.
- 5.6. The exterior and interior of TP-16 JVS-1 and 16PS-1X must be completely powder coated. If the Manufacturer intends to use its own painting system, it must obtain OL approval for alternative painting systems.
- 5.7. The manufacturer must submit the following documents:
 - 5.7.1. test reports;
 - 5.7.2. protection inspection reports;

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5.7.3. operating instructions in Lithuanian;

5.7.4. installation instructions in Lithuanian;

5.7.5. safety instructions in Lithuanian.

6. Scope of work and special requirements for the manufacture and supply of power transformers T-1 and T-2

6.1.1. Power transformers must be designed, manufactured for installation at the OL work site, and operated in accordance with the requirements of the T-1 and T-2 projects (see Appendix No. 1).

6.1.2. Ambient temperature: -25 °C to +70 °C.

6.1.3. Basic technical requirements for new 1250 kVA power transformers:

6.1.3.1. Type: Hermetic, oil-filled.

6.1.3.2. Power – 1250 kVA.

6.1.3.3. High voltage – 6000V AC.

6.1.3.4. Low voltage – 400V AC.

6.1.3.5. Frequency - 50 Hz.

6.1.3.6. Connection group - Yyn0.

6.1.3.7. Short-circuit voltage U_k -5%.

6.1.3.8. Voltage switching branches – 5 (6000V \pm 2x2.5%).

6.1.3.9. Cooling: ONAN (natural).

6.1.3.10. Degree of protection – IP44.

6.1.3.11. Temperature control device with contacts – yes.

6.1.3.12. Pressure control device with contacts – yes.

6.1.4. The manufacturer must provide the following documents:

6.1.4.1. test reports;

6.1.4.2. protection inspection reports;

6.1.4.3. operating instructions in Lithuanian;

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6.1.4.4. installation instructions in Lithuanian;

6.1.4.5. safety instructions in Lithuanian.

7. Spare parts

7.1. The manufacturer must provide spare parts for the adjustment and start-up of the JVS-1 power control panel and the 16PS-1X distribution panel.

8. Description of installation work

- 8.1.1. Disconnect the existing power transformers from TP-16 KTP and 6 kV power supply. (Transformer dismantling/installation work can be performed one at a time while the device is in operation or during the repair of 2027 cap.
- 8.1.2. Dismantle the existing power transformers T-1 and T-2.
- 8.1.3. Install new power transformers T-1 and T-2.
- 8.1.4. Connect the new power transformers to TP-16 KTP and 6 kV power supply.
- 8.1.5. Disconnect existing consumers from TP-16 JVS-1. (TP-16 JVS-1 can only be replaced after the complete shutdown of sulfur production unit No. 1, i.e. during the 2027 repair).
- 8.1.6. Dismantle the existing TP-16 JVS-1.
- 8.1.7. Install a new TP-16 JVS-1.
- 8.1.8. Connect existing consumers to TP-16 JVS-1.
- 8.1.9. Install the 16PS-1X panel.
- 8.1.10. Connect existing consumers to 16PS-1X.
- 8.1.11. After installation, perform start-up and adjustment of the newly installed equipment.

9. Specific requirements

9.1. All information necessary for submitting a proposal or performing the work, but not described in the scope of work, shall be discussed with the Contractor during a visit to the future work site. Upon submission of a technical proposal, it shall be deemed that the Contractor has been familiarized with all necessary information and fully understands the scope of work.

10. Requirements for documentation

- 10.1. The Contractor shall comply with the documentation management rules of AB ORLEN Lietuva (see Appendix No. 2).
- 10.2. After the installation work, the Contractor shall prepare the "As-built" documentation.
- 10.3. The Contractor shall submit technical documentation for the installed equipment and materials in accordance with the requirements of the laws of the Republic of Lithuania (e.g., declarations of conformity, certificates, manufacturer's test reports, operating and usage instructions).

11. Materials, equipment, and services supplied by the Contractor

11.1. All materials necessary for the implementation of the project shall be supplied by the Contractor.

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- 11.2. All tools and equipment necessary for the work shall be supplied by the Contractor.
- 11.3. The equipment supplied shall be new and unused.
- 11.4. The materials supplied shall be new and unused.
- 11.5. The equipment and materials must be certified for use in the European Union.
- 11.6. The list of electrical equipment and cable manufacturers approved by OL is provided in Appendix No. 1.
- 11.7. The Contractor shall be responsible for all temporary electrical connections and the supply of the materials required for them.
- 11.8. The Contractor shall carry out waste management in accordance with the waste management plan agreed with the Customer.

12. Qualification requirements for the CONTRACTOR

I GENERAL REQUIREMENTS FOR CONTRACTORS		
<input checked="" type="checkbox"/>	1.	A certificate issued by the State Energy Inspectorate for the operation of energy facilities (the list of operational works specified in the certificate must correspond to the works specified in the tender documentation)
<input checked="" type="checkbox"/>	2.	SPSC qualification certificate or TPD (document recognizing the rights of foreign nationals) granting the right to be a contractor for the construction of special structures
<input checked="" type="checkbox"/>	3.	A list of work supervisors (welding coordinators, quality control specialists, maintenance technicians for potentially hazardous equipment) involved in the repair, reconstruction, and installation of equipment, as well as copies of certificates or diplomas confirming their qualifications
<input checked="" type="checkbox"/>	4.	Copies of all available company certificates attesting to the application of the quality assurance system
<input checked="" type="checkbox"/>	5.	A list of subcontractors (if any are planned)
II REQUIREMENTS FOR CONTRACTORS. ELECTRICAL WORKS		
<input checked="" type="checkbox"/>	6.	VEI/VERT** certificates for the installation and operation of energy facilities (according to the type of facility):
<input checked="" type="checkbox"/>	a)	<i>installation of electrical equipment</i>
<input type="checkbox"/>	b)	<i>natural gas facility installation</i>
<input checked="" type="checkbox"/>	c)	<i>operation of electrical equipment</i>
<input type="checkbox"/>	d)	<i>operation of heating facilities and turbines</i>
<input type="checkbox"/>	e)	<i>operation of natural gas equipment</i>
<input type="checkbox"/>	f)	<i>operation of liquefied petroleum gas installations</i>
<input checked="" type="checkbox"/>	g)	<i>operation of oil and oil product facilities</i>
<input type="checkbox"/>	7.	The VEI/VERT** certificate must specify the activities that may be performed:
<input type="checkbox"/>	a)	<i>Repair work on electrical networks with a voltage of up to 110 kV;</i>
<input type="checkbox"/>	b)	<i>Repair work on electrical distribution stations and substations with a voltage of up to 110 kV</i>
<input type="checkbox"/>	c)	<i>Operation of heating stations with a capacity exceeding 10 MW;</i>

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<input type="checkbox"/>	d)	<i>Operation of relay protection, automation, and control systems for electrical networks with a voltage of up to 110 kV</i>
<input checked="" type="checkbox"/>	8.	A qualification certificate issued by SPSC or TPD (document recognizing the rights of foreign nationals) granting the right to perform the duties of a special construction works manager for special structures
<input type="checkbox"/>	9.	A qualification certificate issued by SPSC or TPD (document of recognition of rights for foreign nationals) granting the right to perform the duties of a technical maintenance manager for special construction works on special structures
<input type="checkbox"/>	10.	A qualification certificate issued by the SPSC or a TPD (document of recognition of rights for foreign nationals) granting the right to supervise the implementation of a part of a special construction project for a special structure
<input checked="" type="checkbox"/>	11.	A qualification certificate issued by the SPSC or a TPD (document recognizing the rights of foreign nationals) granting the right to perform the duties of a special structure project manager
<input checked="" type="checkbox"/>	12.	Certificate of a work manager for the operation of oil and oil product facilities in explosive environments

13. Requirements for completion of work

- 13.1. The contractor shall perform and transfer to the customer all work specified in the scope of work.
- 13.2. The Contractor shall submit the accepted as-built documentation to the Customer, eliminating all deficiencies identified during the review of the documentation.
- 13.3. The Contractor shall submit the accepted technical documentation (certificates, passports, instructions, etc.) to the Customer.
- 13.4. The work site and surroundings shall be cleaned up, and all waste shall be collected and removed.
- 13.5. All identified deficiencies shall be eliminated.
- 13.6. Handover and Acceptance Statement (HAS) is signed.

14. Preparation of estimates

- 14.1. The contractor shall submit a detailed technical and fixed price offer for the above-described scope of work.

15. Warranty

- 15.1. The contractor guarantees that the equipment supplied will be free from any design, manufacturing, material, and installation defects.
- 15.2. The contractor must confirm that it will comply with ORLEN Lietuva's general terms and conditions for EPC contracts.
- 15.3. The Contractor undertakes to repair or replace any defective equipment at its own expense for any defects that may arise during the specified warranty period.

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16. Work schedule

- 16.1. Design work, supply of materials and equipment must be completed no later than the start of the 2027 capital repair, i.e. by 26 April 2027. Installation and commissioning works shall be completed no later than the end of the 2027 capital repair, i.e. by 30 May 2027.
- 16.2. Work shall commence immediately after the contract is signed.

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