

Lubliniec, 21.03.2019 r.

Competitive bid no.: BGK/03/2019

The competitive bid is carried out in the framework of a project entitled "Implementation of New Technology for the Production of Improved Medium-Voltage Oil Transformers."

**The competitive bid covers:**

Purchase of following fixed assets included in the process line for production of improved oil immersed transformers consisting of :

- equipment for drying and vacuum impregnation of oil transformers
- equipment for treatment and storage of transformer oil
- double wall tank with capacity 35 m<sup>3</sup> including required accessories

**I. Introductory information**

1. The Ordering Party: ELHAND TRANSFORMATORY Sp. z o.o.

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REGON: 241392737

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Correspondence address: ul. Klonowa 60, 42-700 Lubliniec

2. Working hours of the Ordering Party: Monday – Friday 8a.m. – 4p.m.

3. Procedure: a competitive bid

4. An order with an estimated value of more than EUR 30.000 net.

5. The bid is available on the following websites:

<http://www.elhand.pl/przetargi>

<https://bazakonkurencyjnosci.funduszeuropejskie.gov.pl/>

as well as on the information board in the seat of the Beneficiary. It has also been sent via email.

Characteristics of ELHAND TRANSFORMATORY Sp. z o.o. company

Elhand Sp. z o.o. is a Polish manufacturer of transformers located in Lubliniec. The company was founded in 1980 and since then it has been constantly developing and striving to improve the quality of its products. In 2000 the company obtained ISO quality certificates confirming the quality of manufactured products. The main products manufactured by the company are:

- ☒ transformers;
- ☒ reactors;
- ☒ filters;
- ☒ power supplies;
- ☒ special designs;
- ☒ accessories.

Products manufactured by Elhand are mainly used in:

- ☒ mining industry;
- ☒ railway industry;
- ☒ metallurgical and steel industry;
- ☒ oil and gas industry;
- ☒ shipbuilding industry;
- ☒ hospitals;
- ☒ and many others.

The company's products are used in many places of the world and most of its produce is exported.

Production in the company

Production at Elhand company is performed in a three-shift system.

## Technology

Elhand company has the technology for about 20000 products. In many cases it has been a single production of products according to the customer's order, the technology of which is stored in a database. The technology has a flat BOM, which has neither specified operations nor given duration. In the company, in many cases, technology is tailored to the customer's needs and the purchase order. Consequently, salespeople, after receiving a purchase order find similar types of products in the database, later they bind them with orders and on this basis technologists create a new production technology for them.

## II. Description of the subject matter of the agreement

1. The subject matter of the agreement is the purchase of the following fixed assets included in the process line for production of improved oil immersed transformers consisting of :
  - 1.1 - equipment for drying and vacuum impregnation of oil transformers
  - 1.2 - equipment for treatment and storage of transformer oil
  - 1.3 - double wall tank with capacity 35 m<sup>3</sup> including required accessories

General data and requirements:

- max. weight of transformer in the autoclave chamber - 15 tons
- max. rated voltage of transformer - 36 kV
- max number of transformers dried simultaneously - 4 - 6 pcs
- max number of transformers filled with oil in automatic operation mode - 2-4 pcs
- this equipment should be designed for single unit production. So that control system should measure the quality of drying process.
- filling with the oil can be performed in two ways described below:
  - a) inside the autoclave chamber ( small size transformers) - manual or automatic mode of operation
  - b) outside of the chamber ( big size transformers) - manual or automatic mode of operation. Big size transformers will be connected to vacuum station - vacuum in transformer tank ( separate additional vacuum connection) and filled with the oil from tank with purified oil or from oil treatment station

2. AD. II.1.1 CPV CODE: 42341000-8 Industrial furnaces  
AD. II.1.2 and II.1.3 CPV CODE: 44611410-3 Tanks for storage of oil
3. Scope of the agreement (technical specification):

### **AD. II.1.1. Equipment for drying and vacuum impregnation of oil transformers**

Components of the equipment:

- atmospheric-vacuum drying chamber with electric heating system with minimum internal dimensions: L x B x H = 4.00 x 2.85 x 3.45 m
- vacuum installations, heating and ventilation of the chamber
- system for filling the transformers with oil in the chamber
- measurement and control system of the process

The chamber should allow drying, filling with oil and vacuum impregnation of oil transformers. The drying process should take place in cycles, e.g. heating (with air circulation) - vacuum - heating - vacuum - filling with oil. The number of cycles should be controlled automatically depending on the expected degree of drying of the transformer.

The chamber will meet all the requirements for atmospheric drier and vacuum chamber and enable control, measurement of process quality with on-line monitoring and recording of the following criteria:

- measurement of pressure increase
- measurement of the oil level during filling
- vacuum measurement at the level of approx. 0.1 mbar
- measurement and control of the drying process temperature in the range up to 120°C

Detailed data are specified in the table 1

Table 1

Item	Description of component / parameter	Requirements	Additional remarks
1	Chamber - main requirements - useful internal dimensions	L = 4000 mm B = 2850 mm H = 3450 mm	Requirements must be met to accept the offer.
2	Chamber -additional requirements	Floor of chamber will be at the same level as hall floor. We accept the maximum depth of pit for a chamber - 300 mm below floor level. The price should include documentation cost and other cost required for assembling ( sensors, etc) Door of the chamber will be opened by horizontal or elliptical movement (sideway). The steel structure of chamber has to be thermally insulated to achieve low level of thermal losses	Requirements must be met to accept the offer.
3	Chamber - basic technical data		
3.1	Time of achieving of vacuum <0,1 mbar (for empty chamber)	< 60 min	Requirements must be met to accept the offer. Some deviations can be accepted
3.2	Time needed to heat up empty chamber from 20°C up to 120°C	< 120 min	
4	Chamber - additional equipment		Requirements must be met to accept the offer.
4.1	System of measurement of quantity of water	According to standard of manufacturer	
4.2	Electric heating system	Rated power of heaters ok. 90 kW, Heating panels placed on the chamber wall	
4.3	System of measurement of temperature in the chamber including sensors	The system should enable measurement and control of temperature of 1 up to max 6 pcs of transformers simultaneously	
4.4	System of automatic filling with the oil of transformers including sensors for detecting of minimum/maximum oil level and continuous measurement of oil level	The system should enable simultaneous filling from 1 up to max 4 pcs of transformers simultaneously The system should include oil flowmeter and counter to measure quantity of oil	
4.5	Vacuum station with additional vacuum connection to enable creating of vacuum in the transformer tank filled outside of the chamber	This station will be equipped with cooler with condenser	
4.6	Control cabinet with a touch panel displaying the scheme of the entire installation as well as displaying relevant process parameters in all elements of installations containing sensors and measuring elements.	The cabinet should have a USB socket allowing for downloading the parameters of the processes carried out to the disk and a connection allowing connection to the internal computer network (remote supervision). The system should also allow for online diagnostics performed by the manufacturer	

4.7	Blind holes in the wall of the chamber for possible connection of cables of LF (low frequency) heating system	Number of holes - at least 4	
4.8	Lighting in the chamber	Number of light sources -at least 4	
4.9	Sight glasses for observation of chamber	At least 2 illuminated sight glasses placed in the chamber door	
4.10	Circulation system and air exchange	Circulation and air exchange cycle controlled automatically according to parameters specified from the control panel (set drying program)	
4.11	System for collection of splashed oil in the chamber	The system will be equipped with the pump that starts automatically when it detects splashed oil in the chamber	
4.12	Humidity measuring system that allows the automatic process of heating the transformers in the chamber	According to standard of tenderer	
4.13	Hydraulic system for lifting and lowering the platform to enter the chamber with appropriate sensors	According to standard of tenderer	

Additional comments TO POINT II.1.1:

The price given for the components specified in point II.1.1 table 1 should include the cost of delivery and assembly of the elements specified in points 4.1 to 4.13. It should also include the costs of the manufacturing documentation of the chamber, including engineering supervision over the installation and commissioning of the chamber along with the entire installation.

#### AD. II.1.2. - Equipment for treatment and storage of transformer oil

Components of the equipment

- Oil treatment plant (requirements in table 2)
- Tank for storage of 6 m3 of purified oil under vacuum (requirements in table 3)
- Tank for storage of 4 m3 transformer oil pumped from the transformer (requirements in table 4)
- Tank type IBC 1 m3 for storage of oil spilled in the chamber (requirements in table 5)
- Oil and vacuum pumps and heating devices that allow oil storage under appropriate conditions, its transport and if required for heating to the set temperature (requirements in table 6)
- Parts like sensors and meters that allow measuring of oil parameters (level, pressure, temperature, quantity) (requirements in table 7)

Table 2

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Oil treatment plant</b>		
1.1	Max capacity (flow volume)	2000 l/h	Requirements must be met to accept the offer.
1.2	Permitted initial water content	Appr. 50 ppm	
1.3	Content of water after one pass	< 5 ppm	
1.4	Initial gas content	10% vol	
1.5	Gas content after one pass	<0,1 % vol	
1.6	Temperature increase	40°C	
1.7	Installed heating power	min 40 kW	
2	Additional requirements		
2.1	Integrated control panel enabling for the operation outside of factory (service operation)	According to standard of tenderer	Requirements must be met to accept the offer.
2.2	Sockets allowing for taking oil samples at the inlet and outlet of the system	According to standard of tenderer	

2.3	Fine filter 1 $\mu$ m	According to standard of tenderer	
2.4	Execution of frame allowing for loading using a forklift	According to standard of tenderer	
2.5	System to measure the quantity of treated (purified) oil.	According to standard of tenderer	
2.6	Additional socket to generate vacuum in transformer tank outside of chamber during service operation	According to standard of tenderer	
2.7	System of automatic foam regulation	According to standard of tenderer	

Table 3

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Tank for storage of 6 m3 of purified oil under vacuum</b>		
1.1	Capacity of tank	minimum 6000 l	Requirements must be met to accept the offer.
1.2	Recommended tank diameter	2000 mm	
1.3	Maximum tank height	4000 mm	
1.4	Position of tank installation	Vertical	
2	Additional requirements		
2.1	A minimum, maximum and proportional level sensors for level measurement	According to standard of tenderer	Requirements must be met to accept the offer.
2.2	The welded structure of a single-wall tank should be vacuum tight. Tank material - stainless steel	According to standard of tenderer	

The price given for the components specified in point II.1.2 table 3 should include the cost of delivery and assembly of items listed in table 3, item 2.1 It should also include the costs of the tank's manufacturing documentation, including engineering supervision over assembly and commissioning along with the entire installation.

Table 4

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Tank for storage of 4 m3 oil pumped from the transformer</b>		
1.1	Capacity of tank	Maksymalnie 4000 l	Requirements must be met to accept the offer.
1.2	Recommended tank diameter	1500 mm	
1.3	Maximum tank height	4000 mm	
1.4	Position of tank installation	Vertical	
2	Additional requirements		
2.1	A minimum, maximum and proportional level sensors for level measurement	According to standard of tenderer	Requirements must be met to accept the offer.
2.2	Single wall tank design. Material of tank - carbon steel	According to standard of tenderer	

The price given for the components specified in point II.1.2 table 4 should include the cost of delivery and assembly of items listed in table 4, item 2.1 It should also include the costs of the tank's manufacturing documentation, including engineering supervision over assembly and commissioning along with the entire installation.

Table 5

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Tank type IBC 1 m3 for storage of oil spilled in the chamber</b>		
1.1	Capacity of tank	Appr. 1000 l	Requirements must be met to accept the offer.
1.2	Position of tank installation	Placed on the pallet allowing for loading using a forklift	

2	Additional requirements		
2.1	Maximum level sensor	According to standard of tenderer	Requirements must be met to accept the offer.
2.2	Material of tank - plastic appropriate for storage of oil	According to standard of tenderer	

The price given for the components specified in point II.1.2 table 5 should include the cost of delivery and assembly of items listed in table 5, item 2.1 It should also include the costs of engineering supervision over assembly and commissioning along with the entire installation.

Table 6

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Oil and vacuum pumps as well as heating units allowing for oil storage under appropriate conditions, its transport and if required for heating to a set temperature</b>		
1.1	Vacuum pump permanently connected to the tank described in table 3, allowing to create and maintain a vacuum in this tank	According to standard of tenderer	Requirements must be met to accept the offer.
1.2	Oil pump allowing for pumping oil from a tank with purified oil (table 3) to the chamber (table 1)	According to standard of tenderer. Capacity appr. 1000 l/h	
1.3	Oil pump that allows pumping spilled oil from the chamber (table 1) to IBC tank (table 5)	According to standard of tenderer Capacity appr. 1000 l/h	
1.4	Oil pump allowing to pump oil from a transformer tank placed outside the chambers (table 1) to a 4 m <sup>3</sup> tank (table 4)	According to standard of tenderer Capacity appr. 1000 l/h	
1.4	Heating system that allows to maintain the oil temperature in the tank (table 3) suitable for filling or for heating the oil during the flow into transformer in chamber or outside of chamber - table 1	According to standard of tenderer	

Table 7

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Elements of sensors and meters type that allow controlling oil and vacuum parameters (level, pressure, temperature, quantity) and control system functions</b>		
1.1	Safety valves (for gases or liquids) in elements (tanks or pipelines) in which an unexpected increase in pressure may occur	According to standard of tenderer	Requirements must be met to accept the offer.
1.2	Electropneumatic valves that control the flow of gas and oil between the individual elements of the tank and the system for oil treatment and for pouring oil	According to standard of tenderer	
1.3	Hoses/pipelines of appropriate type together with connectors for filling of transformer with oil inside the chamber (table 1)	According to standard of tenderer	
1.4	Hoses/pipelines of appropriate type together with connectors for filling of transformer with oil outside the chamber	According to standard of tenderer	

1.5	The control system should allow automatic processing of the processes described above in Tables 3, 4, 5, 6.	According to standard of tenderer There should be also the possibility to control basic functions of the system with locally arranged panel with button and switches ( close to operated system component)	
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#### AD.II.1.3. – Double wall tank with capacity 35 m<sup>3</sup> with equipment

Tank with capacity 35 m<sup>3</sup> for storage of fresh , untreated oil (requirement in table 8)

Table 8

Item	Description of component / parameter	Requirements	Additional remarks
<b>1</b>	<b>Double wall tank with capacity 35 m<sup>3</sup> for storage of fresh , untreated oil</b>		
1.1	Capacity of tank	Appr. 35000 liters	Requirements must be met to accept the offer.
1.2	Recommended tank diameter	2500 mm	
1.3	Maximum tank height	8000 mm	
1.4	Position of tank installation	Horizontal	
2	Additional requirements		
2.1	A minimum, maximum and proportional level sensors for level measurement	According to standard of tenderer	Requirements must be met to accept the offer
2.2	Double wall design of tank with outside anticorrosion protection	According to standard of tenderer	
2.3	System of leakage detection	According to standard of tenderer	
2.4	Connection sockets for - filling with the oil - venting - minimum, maximum and proportional level sensors for level measurement	According to standard of tenderer	
2.5	Certyfikat issued by Polish Urząd Dozoru Technicznego	According to appropriate rules	

The price given for the components specified in point II.1.3 table 8 should include the cost of delivery and assembly of items listed in table 8. It should also include the costs engineering supervision over assembly and commissioning along with the entire installation.

#### Remarks

- 1) It is not allowed to submit partial offers, i.e. separately for the items indicated in points II-1.1 and in points II-1.2. The reason is to ensure the proper run of drying process and vacuum impregnation of oil transformers, developed by one bidder. This will be ensured by a process developed by one integrator of electrical control and automation of the drying and vacuum impregnation station as well as an equipment for storage and processing of transformer oil.
- 2) It is allowed to submit partial offers regarding only points II-1.3
- 3) All devices have to be CE marked when applicable
- 4) Manuals attached to the delivered devices specified in the table 1, 2 and 8 ( II.1.1 ; II.1.2 ; II.1.3) have to be in Polish language.
- 5) Communicates and descriptions on the touch panels needed for operators have to be displayed in Polish language

#### III. Date of execution of the subject of the contract

1. Maximum deadline for completion: 8 months from the date of signing the agreement with the equipment supplier.

#### IV. Description of the bid preparation

1. The bid may be presented in Polish or English.
2. All changes in the content of the bid (amendments, crossings, additions) shall be signed or initialled by the Bidder - otherwise they will not be taken into account when considering the bid.
3. All prices included in the bid shall be given in PLN or EUR,



4. The price stated in the offer must include all costs and components related to the execution of the order under the terms of delivery of DAP Lubliniec. The bid should also include the costs of training, commissioning and a set of spare parts.
5. The cost of the bid preparation and any other costs related to the presentation of the bid are the Bidder's sole responsibility.
6. The bid shall include:
  - Technical specification of the machine in Polish or English
  - Payment terms
  - Warranty period
  - Delivery time
  - Conditions of technical support during warranty period and after-sale support

#### **V. Contact with the Ordering Party:**

1. The authorised contact person: Andrzej Bok  
e-mail: [a.bok@elhand.pl](mailto:a.bok@elhand.pl)  
phone no.: +48 34 34 73 106

#### **VI. The date and place of submission of the bid**

1. The bid shall be submitted no later than **20<sup>th</sup> April 2019 r.**
2. The bid shall be valid for 6 months
3. The date of submission of the bid shall be taken as the date on which the document is received at the seat of the Ordering Party.
4. The bid shall be delivered via:
  - email: [a.bok@elhand.pl](mailto:a.bok@elhand.pl) and [info@elhand.pl](mailto:info@elhand.pl)
  - post, courier or by hand for the address:  
ELHAND TRANSFORMATORY Sp. z o. o., ul. Klonowa 60, 42-700 Lubliniec
5. Bids which are not submitted by the deadline will not be considered.
6. The Bidder may amend or withdraw the tender submitted, provided that they do it before the deadline of bids' submission.

#### **VII. Relevant information regarding selection of the bid**

1. The evaluation and selection of the bid will take place at the seat of the Ordering Party without the Bidder's participation.
2. Bids will be evaluated by the Management Board of ELHAND TRANSFORMATORY Sp. z o.o.
3. During the process of evaluation of the bids, the Ordering Party may request for additional clarification to the submitted bids.
4. The Ordering Party will evaluate valid bids on the basis of the criteria described below (see p. The evaluation criteria).
5. The Bidder who receives the highest number of points will receive an order from the Ordering Party.
6. The Ordering Party shall notify the Bidders about the selection of the most advantageous bid via the website, notice board and e-mail.
7. For bids whose prices are quoted in other currencies, conversions to EUR currency shall be made at the official rates of exchange as for the day of the bid's evaluation and selection.
8. The Ordering Party reserves the right to introduce changes to the agreement after its conclusion. Possible changes to the provisions of the agreement will be concluded in the form of a written annex, and moreover, they may be introduced due to the following reasons:
  - If it is necessary due to a change in the provisions of generally applicable law after the conclusion of the agreement, in the scope necessary to adapt the Agreement to the amended provisions,
  - Change of the contractual deadline for the performance of the agreement, if another legal or economic circumstance impossible to predict at the time of concluding the agreement occurs, or if force majeure occurs, to which none of the parties is liable to, resulting in the impossibility of proper performance of the agreement concluded.

#### **THE EVALUATION CRITERIA:**

##### **I. ACCEPTANCE CRITERIA**

- AD.II.1.1. Equipment for drying and vacuum impregnation of oil transformers
- AD.II.1.2. Equipment for treatment and storage of transformer oil



TECHNICAL SPECIFICATIONS: Failure to comply with any of the parameters from the specified technical specification for any of the items specified in the points II.1.1, II.1.2, II.1.3 means that the offer is not considered in the proceeding.

## II. SCORING

AD.II.1.1. Equipment for drying and vacuum impregnation of oil transformers

AD.II.1.2. Equipment for treatment and storage of transformer oil

### - DELIVERY TIME:

Delivery time, assembling and commissioning less than 5 months	- 15 points
Delivery time, assembling and commissioning between 5 and 6 months	- 10 points
Delivery time, assembling and commissioning between 6 and 7 months	- 5 points
Delivery time, assembling and commissioning longer than 7 months	- 0 points

### - WARRANTY PERIOD (counted as from the date of machine acceptance protocol)

Warranty period up to 24 months	- 0 points
Warranty period from 25 to 36 months	- 10 points
Warranty period from 37 to 48 months	- 20 points
Warranty period from 49 months and longer	- 30 points

### - ARRIVAL TIME FOR SERVICE FOR DETERMINATION OF THE DEFECT AND POSSIBLE REPAIR WITHIN WARRANTY PERIOD

Time up to 36 hours	- 20 points
Time between 36 and 60 hours	- 10 points
Time longer than 60 hours	- 0 points

### - PRICE (net) in total for fixed assets described in sections II.1.1 and II.1.2 in accordance with the technical specification

Up to 380.000 EUR	- 40 points
more than 380.000 EUR up to 400.000 EUR	- 35 points
more than 400.000 EUR up to 420.000 EUR	- 30 points
more than 420.000 EUR up to 440.000 EUR	- 25 points
more than 440.000 EUR up to 460.000 EUR	- 20 points
more than 460.000 EUR up to 480.000 EUR	- 15 points
more than 480.000 EUR up to 500.000 EUR	- 10 points
more than 500.000 EUR up to 520.000 EUR	- 5 points
more than 520.000 EUR	- 0 points

### **AD.II.1.3 Double wall tank with capacity 35 m<sup>3</sup> for storage of fresh , untreated oil**

#### - PRICE (net, in total)

Up to 10.000 EUR	- 16 points
more than 10.000 EUR up to 12.000 EUR	- 12 points
more than 12.000 EUR up to 14.000 EUR	- 10 points
more than 14.000 EUR up to 16.000 EUR	- 8 points
more than 16.000 EUR up to 18.000 EUR	- 6 points
more than 18.000 EUR up to 20.000 EUR	- 4 points
more than 20.000 EUR up to 22.000 EUR	- 2 points
more than 22.000 EUR	- 0 points

#### - DELIVERY TIME:

Delivery time and commissioning less than 6 weeks	- 12 points
Delivery time and commissioning between 6 and 8 weeks	- 8 points
Delivery time and commissioning between 8 and 10 weeks	- 4 points
Delivery time and commissioning longer than 10 weeks	- 0 points

#### - WARRANTY PERIOD (counted as from the date of machine acceptance protocol)

Warranty period to 24 months	- 0 points
Warranty period from 25 to 36 months	- 4 points
Warranty period from 37 to 48 months	- 8 points
Warranty period from 49 months and longer	- 12 points

**NOTE:**

Bidders affiliated by capital or personally related to the Ordering Party shall not participate in the procedure.

Capital or personal relations shall be understood as mutual relations between the Beneficiary or persons authorised to incur liabilities on behalf of the Beneficiary or persons performing, on behalf of the Beneficiary, activities related to the preparation and performance of the procedure for selecting the contractor, and the contractor,

- a) participation in a partnership as a partner in a civil partnership or a partnership;
- b) holding at least 10% of interests or shares;
- c) acting as a member of the supervisory or management body, a proxy or an attorney-in-fact;
- d) being married or in cohabitation relative by blood or affinity in a straight line relationship or affinity in the collateral line to the second degree, or being related by adoption, guardianship or custody.