**Section II: Schedule of requirements**

1. **Summary of Requirements for the supply of Block-modular boiler houses to Ukraine.**

**UNOPS requirements are comprised of the following 8 (eight) lots:**

**Lot 1. Block-modular boiler house 0,6 MW - 1 PCS**

**Lot 2. Block-modular boiler house 8 MW - 1 PCS**

**Lot 3. Block-modular boiler house 8 MW - 3 PCS**

**Lot 4. Block-modular boiler house 12 MW - 2 PCS**

**Lot 5. Block-modular boiler house 12 MW - 1 PCS**

**Lot 6. Block-modular boiler house 12 MW - 2 PCS**

**Lot 7. Block-modular boiler house 24 MW - 1 PCS**

**Lot 8. Block-modular boiler house 24 MW - 2 PCS**

**B. Technical specifications for Goods – Comparative Data Tables**

**Lot 1. Block-modular boiler house 0,6 MW - 1 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 1** | **Block-modular boiler house 0,6 MW - 1 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies together with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers. | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by an instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery) | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 2. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 0,6 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipes | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 80/60 | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,2 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,15 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 0,35 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,2 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 3 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: 1-1.5 kgf/cm2 (specified after receiving technical specifications) | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** | ☐ Yes ☐ No |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | Reports must be prepared regarding the manufacturer’s tests with certificates for details operating under pressure. The certification test reports must be kept at the manufacturer to enable the Buyer to check them. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.1. Delivery requirements for Lot 1**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.** | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 2. Block-modular boiler house 8 MW - 1 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 2** | **Block-modular boiler house 8 MW - 1 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies together with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 5. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 8,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipes | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 80/60 | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,35 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,35 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 0,7 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,35 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 15 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: average | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | Reports must be prepared regarding the manufacturer’s tests with certificates for details operating under pressure. The certification test reports must be kept at the manufacturer to enable the Buyer to check them. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.2. Delivery requirements for Lot 2**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.** | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 3. Block-modular boiler house 8 MW - 3 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 3** | **Block-modular boiler house 8 MW – 3 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 5. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 8,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipes, three-way, at least 2 units | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,5 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 1,25 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 10 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: 1-1.5 kgf/cm2 (specified after receiving technical specifications) | ☐ Yes ☐ No |  |
| 2.3.14 | Gas pressure in front of gas-burning devices of boilers: average | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | Reports must be prepared regarding the manufacturer’s tests with certificates for details operating under pressure. The certification test reports must be kept at the manufacturer to enable the Buyer to check them. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.3. Delivery requirements for Lot 3**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.**  Partial delivery of the boiler houses in batches (one batch should contain one full boiler house according to the requirements and fully operational) within this period is acceptable. | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 4. Block-modular boiler house 12 MW - 2 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 4** | **Block-modular boiler house 12 MW - 2 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 6. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 12,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipe or water pipe | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 4,0 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,35 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 0,7 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,4 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 15 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: average | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | The supplier carry out testing procedures. Reports must be generated for the manufacturer's tests, along with certificates detailing the operations under pressure. The certification test reports must be retained by the manufacturer so that detailed test reports and certification documents for all testing phases can be provided upon request or for inspection by the buyer. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.4. Delivery requirements for Lot 4**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.**  Partial delivery of the boiler houses in batches (one batch should contain one full boiler house according to the requirements and fully operational) within this period is acceptable. | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 5. Block-modular boiler house 12 MW - 1 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 5** | **Block-modular boiler house 12 MW - 1 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 6. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 12,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipe or water pipe | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,55 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,4 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 1,0 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,6 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 15 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: average | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | The supplier carry out testing procedures. Reports must be generated for the manufacturer's tests, along with certificates detailing the operations under pressure. The certification test reports must be retained by the manufacturer so that detailed test reports and certification documents for all testing phases can be provided upon request or for inspection by the buyer. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.5. Delivery requirements for Lot 5**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.** | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 6. Block-modular boiler house 12 MW - 2 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 6** | **Block-modular boiler house 12 MW - 2 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 2 contracts for supply of the offered or equivalent equipment realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, while also considering a maximum limit to ensure manageability during transportation and assembly. The maximum number of modules allowed shall be 6. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 12,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipes, three-way, at least 3 units | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,5 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 1,25 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 15 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: 1-1.5 kgf/cm2 (specified after receiving technical specifications) | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | The supplier carry out testing procedures. Reports must be generated for the manufacturer's tests, along with certificates detailing the operations under pressure. The certification test reports must be retained by the manufacturer so that detailed test reports and certification documents for all testing phases can be provided upon request or for inspection by the buyer. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.6. Delivery requirements for Lot 6**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.**  Partial delivery of the boiler houses in batches (one batch should contain one full boiler house according to the requirements and fully operational) within this period is acceptable. | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 7. Block-modular boiler house 24 MW - 1 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 7** | **Block-modular boiler house 24 MW - 1 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 3 contracts for supply of the offered or equivalent equipment (at least one of the realized contracts must be for the block modular boiler houses with minimum 20 MW capacity) realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, with a maximum limit of 8 modules to ensure manageability during transportation and assembly. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. Pre-fabrication and pre-assembly should be emphasized to minimize on-site construction time, given the scale and complexity of the 24 MW system. All necessary fittings, connections, and documentation for quick and efficient assembly must be included. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 24,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipe or water pipe | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,55 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,4 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 1,0 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,6 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 30 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: average | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** |  |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | The supplier carry out comprehensive testing procedures, which include load testing, thermal efficiency verification, and emissions testing at full capacity. Reports must be generated for the manufacturer's tests, along with certificates detailing the operations under pressure. The certification test reports must be retained by the manufacturer so that detailed test reports and certification documents for all testing phases can be provided upon request or for inspection by the buyer. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.7. Delivery requirements for Lot 7**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.** | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |

**Lot 8. Block-modular boiler house 24 MW - 2 PCS**

| **N** | **UNOPS minimum technical requirements** | **Is Bid Compliant?** Bidder to complete | **Details of the offered goods.** Bidder to complete |
| --- | --- | --- | --- |
| **Lot 8** | **Block-modular boiler house 24 MW - 2 PCS** | ☐ Yes ☐ No | Please insert brand model of the main equipment |
| **1** | **General qualification requirements** |  |  |
| **1.1** | **The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.** | ☐ Yes ☐ No |  |
| 1.1.1 | The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards. | ☐ Yes ☐ No |  |
| 1.1.2 | All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context. | ☐ Yes ☐ No |  |
| 1.1.3 | All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation. | ☐ Yes ☐ No |  |
| 1.1.4 | The main applicable standards (latest edition) are as follows: | ☐ Yes ☐ No |  |
| 1.1.4.1 | DBN 2.2.5-77:2014 - Boiler houses | ☐ Yes ☐ No |  |
| 1.1.4.2 | PKMU 16.01.2019 №27 - Technical regulation: Pressure equipment safety | ☐ Yes ☐ No |  |
| 1.1.4.3 | DSTU EN 60204-1:2019 - Technical regulation: Machine safety. Electrical equipment of machines | ☐ Yes ☐ No |  |
| 1.1.4.4 | DSTU EN 61000-6:2015 - Technical regulation: Electromagnetic compatibility | ☐ Yes ☐ No |  |
| 1.1.4.5 | ISO 9001 - Quality Manual Template | ☐ Yes ☐ No |  |
| 1.1.4.6 | NAPB A01.001 - Fire safety rules in Ukraine | ☐ Yes ☐ No |  |
| 1.1.4.7 | NPAOP 0.00-1.81-18 - Rules of labor protection during operation of pressure | ☐ Yes ☐ No |  |
| 1.1.4.8 | NPAOP 40.1-1.21 - Rules for the safe operation of electrical installations of | ☐ Yes ☐ No |  |
| 1.1.4.9 | EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. | ☐ Yes ☐ No |  |
| 1.1.5 | Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards. | ☐ Yes ☐ No |  |
| 1.1.6 | If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender. | ☐ Yes ☐ No |  |
| **1.2** | **The Bidder must be in continuous business of supplying of the offered or equivalent equipment for at least past 3 years.** | ☐ Yes ☐ No |  |
| **1.3** | **The Bidder must have experience in the delivery of similar equipment in Ukraine or EU/EEA countries and must provide evidence (contracts, POs, certificates of completion, etc) of successful implementation of at least 3 contracts for supply of the offered or equivalent equipment (at least one of the realized contracts must be for the block modular boiler houses with minimum 20 MW capacity) realised in the past 3 years.** | ☐ Yes ☐ No |  |
| **1.4** | **The Bidder who is not the manufacturer of the Equipment, shall provide Manufacturer's Authorisation (from the main equipment manufacturers) for supply of the Equipment confirming its rights to supply the said Equipment to Ukraine.** | ☐ Yes ☐ No |  |
| **1.5** | **Bidder or producer of the equipment must have a representative office in Ukraine that provides after sale service available in Ukraine or agreement with the local representative of the producer or service company that can provide maintenance and after sale services for the equipment. Bidder must provide contact details of the service centre (or list of the service centers) as well as confirmation from the service centre that it will provide after sale services for the proposed equipment.** | ☐ Yes ☐ No |  |
| **1.6** | **Warranty service. Within the warranty period, the Supplier or its authorized service centre shall provide maintenance and/or repair services and/or replacement of the equipment not later than 30 (thirty) calendar days from the date of receipt of written or E-mail notification from an authorized party. The name of the company, address, telephone- and fax numbers, e-mail address must be mentioned in the bid. All costs connected with warranty maintenance are covered by the Supplier.** | ☐ Yes ☐ No |  |
| **1.7** | **The warranty period for the equipment should be specified in the manufacturer’s passport, but it shall not be less than 36 months from the date of equipment delivery and 24 months from the first operational start. The warranty period will commence upon signing the Certificate of Accepting the Object into Operation, marking the facility's readiness for operation. The warranty must cover all manufacturing defects, materials, workmanship, and labor charges. In addition, the Supplier or its authorized service center shall guarantee response and repair times within 30 (thirty) calendar days from the receipt of written or email notification from an authorized party. All costs associated with warranty maintenance, including transportation and parts, shall be borne by the Supplier.** | ☐ Yes ☐ No |  |
| **1.8** | **In the production of the Equipment offered for this procurement, the use of materials and components included in the List of goods prohibited for importation into the customs territory of Ukraine originating from the Russian Federation, approved by the Resolution of the Cabinet of Ministers of Ukraine No.1147 dated December 30, 2015, is not allowed. The Bidder shall submit the relevant Declaration (confirming that the offered equipment is compliant with the above resolution).** | ☐ Yes ☐ No |  |
| **1.9** | **The following documents must be provided with the Bid (Original documents listed above should be provided in 2 hard copies togather with the delivered equipment). Participants must submit documents confirming the compliance of the bidder's Offer with the specified technical, qualitative, quantitative and other requirements for the subject of procurement. All documents must be provided in English and Ukrainian. The minimum list of necessary documentation must include:** | ☐ Yes ☐ No |  |
| 1.9.1 | Authorizations from the main equipment manufacturers: | ☐ Yes ☐ No |  |
| 1.9.2 | A scanned copy of the title page of the Technical Specifications (technical conditions) with approvals from the responsible authorities. | ☐ Yes ☐ No |  |
| 1.9.3 | Certificates of conformity for main and auxiliary equipment. | ☐ Yes ☐ No |  |
| 1.9.4 | Passport and operating manual of block-modular boiler house. The passport must be accompanied by a instruction for installation, startup, adjustment, and operation which contains requirements for the monitoring during installation and operation within a design lifetime, and instruction on the cleaning of the boiler heating surfaces. | ☐ Yes ☐ No |  |
| 1.9.5 | Technical passports of manufacturing plants for the main equipment. | ☐ Yes ☐ No |  |
| 1.9.6 | Factory test protocols (must be provided together with the goods upon delivery). | ☐ Yes ☐ No |  |
| 1.9.7 | Instructions for installation and operation of the main and auxiliary equipment in Ukrainian. | ☐ Yes ☐ No |  |
| 1.9.8 | Functional scheme of the boiler house with the specification of the main, auxiliary equipment and components. | ☐ Yes ☐ No |  |
| 1.9.9 | Scheme of hydraulic parameters of pipelines and equipment of a modular boiler house. | ☐ Yes ☐ No |  |
| 1.9.10 | Axonometric diagram of gas supply. | ☐ Yes ☐ No |  |
| 1.9.11 | Scheme of layout/placement of the main equipment with overall dimensions | ☐ Yes ☐ No |  |
| **1.10** | **The equipment protection (boiler equipment safety automation) must be made under the requirements of section 17 - DBN V 2.5-77:2014; clause 4 of section VІІ - NPAOP 0.00-1.81-18; clause 3.26 of section V NPAOP 0.00-1.76-15; clauses 9.69-9.72 of DBN V.2.5-20:2018; clause 6.1.14 – PTE TUiM.** | ☐ Yes ☐ No |  |
| **1.11** | **Year of the module manufacture: not earlier than 2023.** | ☐ Yes ☐ No |  |
| **1.12** | **The Buyer shall be entitled to be present during the manufacturer «cold tests». The Supplier must notify the Buyer not later than 15 days before the date of testing.** | ☐ Yes ☐ No |  |
| **1.13** | **The authorised Contractor's representatives are required to go to Kharkiv to participate in the chief installation of the boiler house at the first request, regardless of the hostilities on the territory of Ukraine.** | ☐ Yes ☐ No |  |
| **2** | **Technical requirements** |  |  |
| **2.1** | **Requirements for the elements and materials of block-modular boiler house** |  |  |
| 2.1.1 | Equipment and materials included in the boiler-houses should not be manufactured earlier than 2023. | ☐ Yes ☐ No |  |
| 2.1.2 | All equipment and materials used in the manufacture of boiler-houses shall be of industrial grade and of standard construction. | ☐ Yes ☐ No |  |
| 2.1.3 | All parts that come into direct contact with various environments, including water, steam, and air, shall be completely resistant to corrosion. Materials used must be suitable for the operating conditions and comply with the standards specified in NPAOP0.00-1.81-18 (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.4 | All materials and equipment must be new and must meet the required standards for the boiler plant's operating conditions. Components should be manufactured in 2023 or later, ensuring compliance with current safety and efficiency standards. | ☐ Yes ☐ No |  |
| 2.1.5 | All the equipment, its components, or parts shall be delivered filled with operating liquids, start-adjusted, and ready for operation. | ☐ Yes ☐ No |  |
| 2.1.6 | The supplier shall be obliged to conduct an original technical examination of boilers with an entry to the boiler’s passport. | ☐ Yes ☐ No |  |
| 2.1.7 | The set of delivery for the total quantity of mobile boiler houses shall be supplemented with software for a dispatcher which is part of the general set of delivery. | ☐ Yes ☐ No |  |
| 2.1.8 | The transportable block-modular boiler house must comply with the requirements set forth in DBN B.2.5-77:2014. This includes but is not limited to structural integrity, safety standards, and operational efficiency (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No |  |
| 2.1.9 | The boiler house shall consist of the minimum number of modules necessary for efficient operation, with a maximum limit of 8 modules to ensure manageability during transportation and assembly. Modules must be of standard dimensions to facilitate easy transportation and on-site assembly, ensuring compliance with logistical constraints and site conditions. Pre-fabrication and pre-assembly should be emphasized to minimize on-site construction time, given the scale and complexity of the 24 MW system. All necessary fittings, connections, and documentation for quick and efficient assembly must be included. | ☐ Yes ☐ No | Please provide number of modules |
| **2.2** | **Water parameters** |  |  |
| 2.2.1 | Rigidity is general: ≤ 7.0, mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.2 | The hardness is carbonate: 5 mg-eq./l | ☐ Yes ☐ No |  |
| 2.2.3 | Iron: ≤ 0.2 mg/l | ☐ Yes ☐ No |  |
| 2.2.4 | Oxygen: 7 mg/l | ☐ Yes ☐ No |  |
| 2.2.5 | Dry residue: ≤ 1500 mg/l | ☐ Yes ☐ No |  |
| 2.2.6 | pH: 6.5-8.5 | ☐ Yes ☐ No |  |
| **2.3** | **Operating parameters of boiler house** |  |  |
| 2.3.1 | Total thermal power of the boiler house, MW: 24,0 | ☐ Yes ☐ No |  |
| 2.3.2 | Type of boilers: heat pipes, three-way, at least 3 units | ☐ Yes ☐ No |  |
| 2.3.3 | Type of burners: modulating, frequency-controlled fans, emissions of pollutants must meet modern requirements | ☐ Yes ☐ No |  |
| 2.3.4 | Estimated temperature graph of the heating network (T1/T2), °C: 124/61. The boiler house must be able to operate according to the existing temperature schedule of 124°C for the supply (T1) and 61°C for the return (T2). This schedule is essential for compatibility with the current heating system infrastructure. The system should automatically adjust the supply and return temperatures based on outdoor conditions, ensuring efficient heat transfer while maintaining the required temperature difference (Δt°C) within the range of 20°C to 40°C. | ☐ Yes ☐ No |  |
| 2.3.5 | Scheme of connecting the boiler house to the consumer: dependent | ☐ Yes ☐ No |  |
| 2.3.6 | Hydrostatic pressure of the heating network, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.7 | Hydraulic resistance of the heat network, MPa: 0,5 | ☐ Yes ☐ No |  |
| 2.3.8 | Coolant pressure at the exit from the boiler house, MPa: 1,25 | ☐ Yes ☐ No |  |
| 2.3.9 | Coolant pressure at the entrance to the boiler house, MPa: 0,75 | ☐ Yes ☐ No |  |
| 2.3.10 | Productivity of the water treatment system, m3/h: 15 | ☐ Yes ☐ No |  |
| 2.3.11 | Water pressure in the water supply system, MPa: 0,1 | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.12 | Conditional diameter of the connected water pipe B1, DN: determine by calculation | ☐ Yes ☐ No |  |
| 2.3.13 | Gas pressure at the inlet to the boiler house: 1-1.5 kgf/cm2 (specified after receiving technical specifications) | ☐ Yes ☐ No |  |
| **2.4** | **The below equipment must be provided:** |  |  |
| 2.4.1 | frequency converters for pumping equipment; | ☐ Yes ☐ No |  |
| 2.4.2 | sludge separator; | ☐ Yes ☐ No |  |
| 2.4.3 | microbubble separator; | ☐ Yes ☐ No |  |
| 2.4.4 | possibility of continuous operation of water treatment; | ☐ Yes ☐ No |  |
| 2.4.5 | the presence of a mixing three-way valve for regulating the temperature of the coolant in the heat network; | ☐ Yes ☐ No |  |
| 2.4.6 | two power supply inputs with AVR system; | ☐ Yes ☐ No |  |
| 2.4.7 | availability of an electricity meter – Gama 300 with transformer metering; | ☐ Yes ☐ No |  |
| 2.4.8 | availability of a heat meter with 2 flow measuring sections, Modbus remote data transmission protocol; | ☐ Yes ☐ No |  |
| 2.4.9 | presence of a cold water meter; | ☐ Yes ☐ No |  |
| 2.4.10 | availability of a gas meter; | ☐ Yes ☐ No |  |
| 2.4.11 | the presence of an automation and dispatching system for organizing the operation of the boiler room in automatic mode without the constant presence of service personnel in it, with full monitoring of all parameters of the boiler room, accounting and archiving of energy consumption data, automatic remote adjustment of the operation of the boiler house). | ☐ Yes ☐ No |  |
| 2.4.12 | Connection to the dispatch controller (using RS-485, RS-232 interfaces and protocols provided by the manufacturer) including: | ☐ Yes ☐ No |  |
| 2.4.12.1 | electricity meter; | ☐ Yes ☐ No |  |
| 2.4.12.2 | heat meter; | ☐ Yes ☐ No |  |
| 2.4.12.3 | cold water meter; | ☐ Yes ☐ No |  |
| 2.4.12.4 | gas meter. | ☐ Yes ☐ No |  |
| **2.5** | **Automatic control system. Automatic control system must ensure the transfer of parameters about the state of thermomechanical and electrotechnical equipment of the boiler house in the following amount:** | ☐ Yes ☐ No |  |
| 2.5.1 | Analog signals: | ☐ Yes ☐ No |  |
| 2.5.1.1 | outdoor air temperature; | ☐ Yes ☐ No |  |
| 2.5.1.2 | total capacity of boilers; | ☐ Yes ☐ No |  |
| 2.5.1.3 | boiler coolant temperature; | ☐ Yes ☐ No |  |
| 2.5.1.4 | pressure of the supplying boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.5 | gas pressure; | ☐ Yes ☐ No |  |
| 2.5.1.6 | Pressure of cold water at the entrance to the boiler house; | ☐ Yes ☐ No |  |
| 2.5.1.7 | the temperature of the heat carrier supplied to the dependent system after the mixing unit (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.8 | back pressure. boiler coolant; | ☐ Yes ☐ No |  |
| 2.5.1.9 | temperature of the return coolant from the dependent system (depending on the configuration of the boiler house); | ☐ Yes ☐ No |  |
| 2.5.1.10 | air temperature in the boiler house. | ☐ Yes ☐ No |  |
| 2.5.2 | Discrete signals: | ☐ Yes ☐ No |  |
| 2.5.2.1 | carbonation signal; | ☐ Yes ☐ No |  |
| 2.5.2.2 | fire alarm; | ☐ Yes ☐ No |  |
| 2.5.2.3 | signal of unauthorized penetration; | ☐ Yes ☐ No |  |
| 2.5.2.4 | signal of presence of power supply voltage; | ☐ Yes ☐ No |  |
| 2.5.2.5 | low level signal in the water storage tank; | ☐ Yes ☐ No |  |
| 2.5.2.6 | alarm signal of boilers 1,2,3; | ☐ Yes ☐ No |  |
| 2.5.2.7 | signal of emergency pressure increase in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.8 | signal of emergency pressure reduction in the heating network; | ☐ Yes ☐ No |  |
| 2.5.2.9 | signal of an emergency pressure drop in the heat network (protection of pumps against "dry running"); | ☐ Yes ☐ No |  |
| 2.5.2.10 | operation signals of circulation pumps of the dependent heating system; | ☐ Yes ☐ No |  |
| 2.5.2.11 | signals of operation of feeding pumps; | ☐ Yes ☐ No |  |
| 2.5.2.12 | operation signals of the pump of the boiler house heating system. | ☐ Yes ☐ No |  |
| 2.5.3 | To transfer data to the upper level in the SCADA system, provide an Ethernet interface and an exchange protocol - Modbus TCP. | ☐ Yes ☐ No |  |
| **2.6** | **Transportation and packaging** | ☐ Yes ☐ No |  |
| 2.6.1 | Before delivering from the factory, all the heating surfaces and pipelines must be internally cleaned from all possible external inclusions. | ☐ Yes ☐ No |  |
| 2.6.2 | The surfaces of all machine-treated equipment must be protected against corrosion during transportation, storage, and installation by applying one (1) layer of a corrosion-resistant coating, the same applies to external edges of valves and pipelines for welding. | ☐ Yes ☐ No |  |
| 2.6.3 | All the components of the module including auxiliary equipment must be dispatched to the customer in a preserved form in appropriate packaging, which preserves the equipment during loading and unloading, transportation, and storage within the warranty period. | ☐ Yes ☐ No |  |
| 2.6.4 | All the details must be protected against dirt, rust, and other possibilities of damage to the external and internal surfaces during dispatch, transportation, and storage in the open air before the equipment installation. The measures to be taken to protect the equipment must be in line with the manufacturer’s instructions. | ☐ Yes ☐ No |  |
| 2.6.5 | A list of delivered assemblies must be drawn up. | ☐ Yes ☐ No |  |
| 2.6.6 | A lifting diagram, the center of gravity, and weight should be marked on the body. | ☐ Yes ☐ No |  |
| 2.6.7 | All the delivered equipment must have individual plates which must contain the name of the manufacturer, the number of the model, and the serial number. | ☐ Yes ☐ No |  |
| 2.6.8 | The supplier carry out comprehensive testing procedures, which include load testing, thermal efficiency verification, and emissions testing at full capacity. Reports must be generated for the manufacturer's tests, along with certificates detailing the operations under pressure. The certification test reports must be retained by the manufacturer so that detailed test reports and certification documents for all testing phases can be provided upon request or for inspection by the buyer. | ☐ Yes ☐ No |  |
| **3** | **Additional requirements** |  |  |
| 3.1 | Bidder provided shipping dimension: L x W x H, as well as Kerb/shipping weight in kg of the equipment. | ☐ Yes ☐ No | Please provide details |
| 3.2 | Bid includes the Country of origin of the goods. | ☐ Yes ☐ No | Please provide details |
| 3.3 | Performance and Efficiency: The boiler house shall achieve a minimum thermal efficiency of 85% to ensure optimal operation and energy utilization. Efficiency calculations must be based on the lower heating value (LHV) of the fuel (compliance must be reflected either in certificates or in the equipment's passport/manual). | ☐ Yes ☐ No | Please provide details |
| 3.4 | The boiler house must comply with the latest EU emission standards, ensuring minimal environmental impact. Emission levels for NOx, CO, and particulate matter (PM) should be below the thresholds specified in Directive 2010/75/EU on industrial emissions. Certificate of Compliance issued by an accredited third-party organization should be provided as evidence for EU emission standards. | ☐ Yes ☐ No | Please provide details |
| 3.5 | Load Response: The boiler house should be capable of modulating its output to meet varying load demands efficiently. The system must respond to load changes within a maximum of 15 minutes to maintain stable operation without significant energy losses. | ☐ Yes ☐ No | Please provide details |

**C.8. Delivery requirements for Lot 8**

| **UNOPS Requirements** | | **Is the bid compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | **Bidders shall deliver and unload the goods as soon as possible but not later than December 25, 2024. Bidders must provide realistic delivery time for the proposed goods.**  **DDP Incoterms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_calendar days from the date of PO signature.**  Partial delivery of the boiler houses in batches (one batch should contain one full boiler house according to the requirements and fully operational) within this period is acceptable. | ☐Yes ☐ No |  |
| **Delivery place and Incoterms rules** | DDP, Kharkiv city, Ukraine.  The bidder will be responsible for covering the demurrage costs, if any. | ☐Yes ☐ No |  |
| **Consignee details** | Delivery address and consignee details will be provided to the successful Bidder(s) | ☐Yes ☐ No |  |