APPROVED BY:
General Manager
"Oil Refinery Brod" JSC.
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Date: ___/___/2026

Technical Requirements

for manufacturing and delivery of
Mobile On-Vehicle Storage System
to "Oil Refinery Brod" JSC.

2026

1	Company Name - Postal Address - Phone - Fax - E-mail - General Manager	"Oil Refinery Brod" JSC., Bosnia and Herzegovina, Republic of Srpska, 74450 Brod, 106, Svetog Save St. +387 53 626 001 +387 53 626 002 rafinerija@rafinerija.com Anatoliy Karalyus
2	Work performance grounds	Measures intended to reduce the negative impact at switching to ecologically cleaner fuel - Compressed Natural Gas (CNG)
3	Project implementation goal	Autonomous Gasification of the Republic of Srpska (Bosnia and Herzegovina)
4	Facility description	Mobile On-Vehicle Storage System
5	Facility Location	Brod City, Republic of Srpska, Bosnia and Herzegovina, "Oil Refinery Brod" JSC. Industrial Park
6	Climatic and Seismic Construction Conditions	6.1. Climatic conditions: - Temperate climate zone, - Temperate continental climate, - Average January temperature -11.2°C, - Average July temperature +28.7°C, - Wind load at altitude from 30 to 68 m: 105 kgs/m^2, - Five coldest days temperature: -14,4°C, - Absolute maximum air temperature: +40,4°C, - Absolute minimum air temperature: -21°C, - Frost depth: 0,8 m. 6.2. Seismicity: - 8th seismic zone according to MSS classification.
7	Assignment Content	7.1. Manufacturing and delivery of mobile on-vehicle storage system, qty: 2 Pcs, including: 7.1.1. Mobile On-Vehicle Storage System: gas storage and transportation system - "gas station with gas cylinders", technological pipelines, fittings, 7.1.2. Spare parts and components required for performance of the above described works on technical maintenance and operating repairs within 1 (one) year of operation - 1 set, 7.1.3. Special mechanisms (screwdrivers, keys, special equipment, etc.), required for performance of technical maintenance works, as well as a set of hand tools for emergency vehicle repair, equipped with a sparking-resistant system at use, 7.2. Vehicle type approval. Purpose: transportation of dangerous goods by vehicle in accordance with ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road), 7.3. Manufacturer's Statement of Origin, 7.4. Customer staff training.
8	Operating mode	Daily/annual operation of up to 24 Hrs per day, 350 days/year
9	Initial data	9.1. Natural Gas - intake composition in accordance with Appendix A - pressure: up to 200 Bar, - gas temperature: +15..+40^{0}C, 9.2. Overhaul life: no less than 60 months, 9.3. Useful life of basic technological equipment: no less than 20 years.
10.	Requirements and documentation for the equipment supplied	Accompanying documentation must contain the following: 10.1. Technical documentation for the equipment, 10.2. Equipment and material approving documents (certificates, records etc.),

		10.3. Other documentation, as may be stipulated by respective standards, 10.4. Gas piping diagram showing the as-built configuration of the supplied MVSS, with clear identification of all cylinders and all connections, gas distribution piping, all types of valves and fittings, pressure gauges, and the direction of gas flow; 10.5. Specification of all components of the gas lines hookup, with a level of detail sufficient for procurement, including the manufacturer, catalogue number, detailed workshop drawings of the piping installation, materials, and quantities. A separate specification of sealing elements and details of detachable connections of the "pipe–union nut" type shall also be provided. 10.6. The gas cylinders shall be supplied with a complete set of accompanying documentation, including serial numbers, permits and approvals, certificates of conformity, details of all types of valves and fittings installed on the cylinders, technical data sheets specifying the set values of safety valves, and the relevant ADR documentation. A schematic diagram identifying the cylinders and corresponding to the actual as-built MVSS shall also be provided; 10.7. Complete electrical wiring diagrams covering the power supply from the tow-truck unit to all electrical equipment on the MVSS, as well as control, signalling and communication diagrams. The documentation shall be developed to a level of detail sufficient for technical maintenance and procurement of the relevant items, and shall reflect the actual as-built configuration of the MVSS. 10.8.Instructions for equipment use and repair, 10.9. Catalogs of all necessary spare parts and equipment components, including the basic ones, with classification of all items into specific technological units, 10.10. Documents, confirming warranty obligations relating to the equipment, 10.11. Copies of equipment Shipment Notes, 10.12. Equipment Packing lists.
11.	Equipment-related Requirements:	11. The Mobile On-Vehicle Storage System (hereinafter: the MVSS) performs the function of a mobile gas storage, and is a source of natural gas for gas distribution stations (hereinafter: the GDS) or for use as motor vehicle fuel, with the aim of autonomous gas supply to the Republic of Srpska. 11.1. The Mobile On-Vehicle Storage System (hereinafter: the MVSS) must ensure: 11.1.1. Receipt of compressed natural gas (hereinafter - the CNG) through a compressor gas filling station (CGFS) or a compressor unit with a gas pressure of up to 200 Bar, 11.1.2. CNG storage in gas accumulating bottles, 11.1.3. Transportation of CNG to the gas distribution station place, 11.1.4. Gas supply to the gas distribution station, or connection to gas compression modules (hydraulic pumps); 11.2. Basic technical characteristics of the Mobile On-Vehicle Storage System (hereinafter: the MVSS): 11.2.1. Allowed cylinder working pressure – no less than 20 MPa (200 Bar). Working pressure at MVSS filling: up to 200 Bar. 11.2.2. The total gas accumulating capacity at working pressure, expressed in Nm^3: no less than 5,000 Nm^3 at filling at 200 Bar pressure, provided that the total mass of the tractor unit with trailer weighing 9,200 kg should not exceed 40,000 kg 11.2.3. Mode of gas supply to the gas distribution station and the gas compression module: passive, 11.2.4. MVSS discharge coefficient in passive mode: min. 90% (at Pwork.=10 Bar),

		11.2.5. Number of pipe connections for MVSS filling: no less than two on the back side, 11.2.6. Number of connection units to the gas distribution station/ gas compression module: no less than two, 11.2.7. Operating temperature range: from -30°C to +45°C. 11.2.8. Type of gas accumulating cylinders: Cylinders Type 1, Type 2 or Type 3, (to be specified in the technical and commercial offer); 11.2.9. Length of the filling hose: no less than 8 meters, 11.2.10. MVSS overall dimensions and total weight must correspond to the reference values established by B&H regulations for transport on public roads and thoroughfares, without any additional permits and approvals. The overall dimensions and unladen mass of the MVSS shall be stated in the technical and commercial offer. 11.2.10.1. The maximum mass of the gas-filled MVSS: the total mass of the tractor unit with trailer must not exceed 40,000 kg, taking into account the tractor unit operating mass of about 9,200 kg, 11.2.11. Position of gas cylinders in the MVSS: vertical or horizontal. 11.2.12. MVSS case type: steel support/frame or container MVSS construction, certified for transportation of cylinder units in accordance with ADR requirements, with extensions for tarpaulin installation. 11.3. The equipment included into the Mobile On-Vehicle Storage System must comply with the requirements of this Technical assignment, as well as of the European Agreement Concerning the International Carriage of Dangerous Goods by Road (hereinafter: the ADR), 11.4. The MVSS implementation version must be anticipated as part of a semi-trailer and must meet the ADR requirements, 11.5. The Mobile On-Vehicle Storage System must be equipped and marked in accordance with the ADR requirements, 11.6. MVSS accumulating cylinders must be divided into independent sections with a maximum water filling volume of 5,000 liters, must have an individual shut-off device and a device preventing exceeding the permitted gas pressure and temperature parameter values. 11.7. The Mobile On-Vehicle Storage System must be equipped with quick couplers (nozzles) to enable connection of the gas distribution station, 11.8. The Mobile On-Vehicle Storage System for cylinder filling must be equipped with a pipe filling connection type NGV-2 (ISO 14469), 2 pcs. And 2 pcs. for discharge. HBS revolving connectors ¾" and 1 pc. HBS revolving connector ½". 11.9. The Mobile On-Vehicle Storage System must be equipped with an earthing circuit portable connection device for protection against static and atmospheric electrical discharge at temporary station locations. 11.10. The Mobile On-Vehicle Storage System must be equipped with a device for measuring and controlling of gas temperature and pressure in cylinders, with a possibility of temperature values reading on a digital-type indicator (optional). The temperature sensor must be placed in one of the MVSS bottles, while the gas pressure control sensor must be placed in the cylinders within each section. 11.11. Remote MVSS geolocation tracking system must also be provided (using GSM connection):

		1) the GSM modem, which upon request can inform the Customer via Internet about the current location of the MVSS. 2) protection of granting access to view MVSS geolocation must be provided. 11.12. The connection point for the gas distribution station/gas compression module must be equipped with a three-way valve for the possibility of releasing gas «to the vent - relief valve for gas release» from the dispensing hose after emptying the MVSS. 11.13. The connection point must be equipped with emergency stop devices. 11.14. Composition of MVSS equipment elements must enable: - comfortable access of maintenance staff to the shut-off and regulation fittings, sensors, control and measuring instruments; - comfortable and safe access of maintenance staff enabling them to carry out works on MVSS equipment technical maintenance and overhaul. 11.15. Equipment and materials used in the MVSS construction must not affect the properties of the CNG released to customers. 11.16. Applied materials (lubricants, hydraulic fluids) must maintain stable viscous-temperature properties throughout the range of equipment operating temperatures, and must also have analogues that are allowed for use in B&H (European Union). 11.17. Optionally include in the offer a remote monitoring system for the residual pressure in the MVSS (using GSM communication): 1) upon the Customer's request, the GSM modem shall transmit via the Internet information on the current pressure in the MVSS; 2) access rights protection for viewing the MVSS residual pressure data shall be provided.
12.	Additional requirements	12.1. The Mobile On-Vehicle Storage System must be fitted with all the equipment, control instruments and automation necessary for safe and reliable operation. Total Mobile On-Vehicle Storage System set delivered must enable system functionality without any additional supplies, fittings, control and measuring instruments, including: - elements for equipment, pipeline and fitting connection; - gas detection system, - connection points for electrostatic voltage removal devices during filling, - own MVSS grounding device during unloading, equipped with a minimum 8 meters long cable and a spring gripper, - piping distribution system with shut-off and regulating fittings, - pipes, fittings and armature for the gas circuit and auxiliary systems, - non-return valves installed on pipelines, - a set of spare parts and components sufficient for one year of operation and maintenance, with individual prices indicated, which must necessarily contain, but without limitation, a list of spare parts, including spare parts and components for the control and measuring instruments equipment, - a set of all necessary equipment, devices and tools (including special sparking-resistant tools) for all types of stipulated and repair works, as well as for equipment servicing, - spare wheel for the chassis, - fire extinguishers complying with ADR requirements - spare parts and components required at commissioning and setting up for the entire range of equipment supplied, - certified movable blinds (including those set up on the tank equipment connecting pipes, required for conducting of hydraulic tests and maintenance), - blinds for transportation,

		12.2. Please indicate the following in the technical-commercial offer: - equipment execution, type, layout of cylinders, - hydraulic volume of cylinders, - the mass of empty and full MVSS, 12.3. Warranty for MVSS (cylinders, related installations, chassis, etc.) – no less than 2 years. 12.4. Delivery period – no longer than 2 months. 12.5. Delivery of spare parts and components for commissioning and setup works (if required) and of the operating equipment should be made in individual packagings, 12.6. Supplier (Manufacturer) technical services shall include: - obtaining of permits, if required, - manufacturing, - manufacturing factory testings, - checkup & controlling assembly of transport units, - delivery on DAP Oil Refinery terms, - delivery of spare parts, - commissioning and setup works (the price should be separately expressed in the form of a separate calculation, if required), - setup of the fitting supply lines, - staff training (submit the training program and separately express the training costs in the form of an separate cost estimate), - maintenance during the warranty period, - extension of the maintenance period warranty (according to the contract appendix), 12.7. The Supplier must provide a reference list indicating at least 3 deliveries within the last 5 years of compressed natural gas storage systems (stationary or mobile), 12.8. Tarpaulin for the semi-trailer must also be included into the offer (as an option).

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