
Request for Information – “*Purchase of a hydrogen refueling station efficiency control simulator for vehicles with a H2 700 barg refueling system*”

Dear Sirs

On behalf of ORLEN Spółka Akcyjna (“ORLEN”) we kindly request you (“the Bidder”) to submit initial proposal for the execution of the „ ***Purchase of a hydrogen refueling station efficiency control simulator for vehicles with a H2 700 barg refueling system***” Project, described in details in the “Substantive requirements” section of this Request for Information (“RFI”).

We expect response to this RFI to be prepared in accordance with the requirements stipulated in the “Formal requirements” section of this RFI.

Final date for initial proposal submission:
in accordance with CONNECT Platform

In case of additional questions please contact via „Questions/Answers” CONNECT section.

Your initial proposal shall be submitted via CONNECT Purchasing Platform.

Sincerely Yours

Fatima Bartnik

ORLEN S.A.

09-411 Płock

Ul. Chemików 7

Tel: +48 609 174 485

e-mail: fatima.bartnik@orlen.pl

SUBSTANTIVE REQUIREMENTS

ORLEN SA invites you to submit a response in accordance with the subject matter of this Request for Information (RFI).

ORLEN S.A. stipulates that this letter does not constitute an invitation to submit an offer, the responses provided will be for information purposes.

Scope of Work

Technical and commercial offer for the provision of service under the EP formula as part of the project **" Purchase of a hydrogen refueling station efficiency control simulator for vehicles with a H2 700 barg refueling system"**.

Obtaining market information on the potential interest of entities in performing work under the EP formula concerning a simulator for controlling the efficiency of hydrogen refueling stations LDV vehicles and trucks with the H2 700 barg refueling system in midflow and highflow technologies.

Purchase and delivery of a hydrogen refueling station efficiency simulator for operational activities related to the simulation of guaranteed parameters assumed for HRS stations.

Technical/Process Assumptions for Delivery

Technical details:

1. *Providing mobile solutions, enabling simulation of guaranteed parameters for newly designed HRS stations in various locations, and testing the station in operation*

The ability to check the following station parameters, among others:

- vehicles refueling times with full/empty storage tanks,
 - determination of the number of refuelings that can be performed with full/empty storage tanks,
 - percentage of vehicles tank refueling,
 - actual storage capacity and actual hydrogen consumption with full/empty MEGC
 - indication of the minimum pressure that can be achieved in storage tanks,
 - actual maintenance time, including the time needed to start the compressor and refill the storage tanks.
2. *Ability to perform SAT tests according to AFIR requirements, EN 17127 and EN 17124 standards*
 3. *Adapting the simulator tank capacity to the trucks - standard and max version (700 bar ~30 kg and 55 kg tanks)*

4. *Proposing a solution enabling cascade refueling of vehicles*
5. *Information on the method of refueling tanks - will it be necessary to empty the tanks before refueling again*
6. *Information on equipping the simulator with a system that accelerates the return of hydrogen to the station/trailer (system equipped with a compressor)*
7. *Proposing a solution for testing devices with the LDV 700 barg H2 refueling system*
8. *Proposing a solution for testing 700 bar trucks in midflow and highflow technology (700 bar ~55 kg tanks)*
9. *Possibility of returning hydrogen to the installation/trailer after testing (system equipped with a compressor)*
10. *Possibility of returning hydrogen to the installation/trailer during operation of the simulator*
11. *Integration with an on-line analyzer confirming compliance requirements of quality automotive hydrogen parameters*
12. *Communication interface - compliant with the SAE 2601 refueling protocol*
13. *Connections compliant with SAE J2600 and possibility of refueling simulation for a refueling connector compatible with TK17 for H2 350 barg HDV and H2 700 barg LDV*
14. *IrDA communication on the simulator side in accordance with SAE J2799*
15. *In closed system ventilation must be provided to prevent hydrogen accumulation and a hydrogen detector must be installed in the enclosed space*
16. *Length - up to 40 ft*
17. *Height - up to 4 m*
18. *Width - up to 2.55 m*
19. *Connector types:*
 - *loading connector compatible with WEH TK25 (TN5 recommended)*
 - *unloading connector: socket according to DIN477-5 W30x2LH*
20. *Refueling simulator controlled with manual valves. If pneumatic/other control is required, refueling simulator must be self-sufficient with auxiliary media*
21. *Maximum water content in the produced cylinders - below 5 [$\mu\text{mol/mol}$] (in accordance with ISO 14687 grade D) - necessity of confirmation the quality of hydrogen in cylinders (compliance of hydrogen parameters with ISO 14687 grade D)*
22. *Confirmation of no hydraulic tests performed using water during the production process for the technological components of the simulator. Testing using inert gases is allowed.*
23. *If the designed simulator requires a truck trailer with a maximum length of 40 ft:*

- a) *The Gross Vehicle Weight (GVW) of the entire set must not exceed 40 tons (with 8.5 tons for the tractor unit, and up to 9 tons for a hydrogen/LNG-powered tractor unit)*
 - b) *pressure on the saddle element: up to 9 tons*
 - c) *Compliance with the Regulation of the Minister of Infrastructure regarding technical conditions for vehicles and their necessary equipment (Journal of Laws 2024, item 502)*
 - d) *Confirmation that the refueling simulator will be equipped with a reversing camera (in compliance with the requirements of the ADR Agreement). If Ex protection is required, must also be provided*
 - e) *Confirmation that the refueling simulator will be equipped with a mounting location for a GPS module with an antenna. If Ex protection is required, must also be provided (the GPS module supplied by the customer is not Ex-rated). All power or signal cables for the GPS will be protected in accordance with ADR requirements. The GPS module and all power cables for the GPS module are the responsibility of the Supplier*
 - f) *Confirmation that the trailer will be equipped with thermal shields to reduce fire spread from the wheels (in accordance with 9.7.9.2 of the ADR Agreement)*
 - g) *The truck trailer must be FL-compliant (in accordance with 9.2 of the ADR Agreement)*
 - h) *The need to adjust the support legs of truck trailer to the trailer's weight (if the simulator requires a truck trailer).*
24. *Presentation of the terms and conditions of warranty service/warranty inspections/repairs of the fueling simulator. Indication of proposed service points in Poland.*
25. *Conducting the factory acceptance test (FAT) at the manufacturer's facility – FAT (at the supplier's site) with the participation of up to 10 representatives of ORLEN S.A., including tests covering control/safety systems and measurement systems. The supplier shall perform all required tests in accordance with factory procedures, this technical appendix, relevant data sheets, national and international regulations and standards, **Appendix 2** – Customer's Guidelines for Factory Acceptance Tests, and after agreeing on the acceptance test program (documentation) with ORLEN S.A.*
26. *Compliance with the requirements for the simulator in terms of applicable regulations, norms, standards, and EU directives, such as:*
- a) *HRS Technical Specifications: EN 17127; ISO 19880-1*
 - b) *Hydrogen quality: EN 17124; ISO14687*
 - c) *Fuelling algorithm: EN 17127; ISO 19880-1 (reference to SAE J2601)*
 - d) *Fuelling connectors: EN ISO 17268; ISO 17268*
 - e) *For H70, communication filling is mandatory*

- f) *achieve 95~100% SOC (state of charge) for storage system*
- g) *SAE J2601:2020 as a filling protocol*
- h) *SAE J2799 for IR communication (ISO 19880-1 refers to this standard)*
- i) *J2601 passenger vehicles H35, H70 <3.6 kg/min*
- j) *J2601-2 buses, trucks H35 <7.2 kg/min*
- k) *J2601-3 forklifts H25, H35 <0.6 kg/min*
- l) *J2601-4 Ambient temp. Filling H35, H70 <3.6 kg/min*
- m) *NFPA2 Hydrogen Technologies Code 2020*
- n) *The position of the Ministry of Culture and Environment, the Ministry of Family, Labour and Tourism, the President of the Office of Technical Inspection, the Director of the Technical Inspection Office, the President of the Central Office of Measures and the Chief Commander of the State Fire Service regarding the application of technical regulations and standards during the investment process of building a hydrogen refueling station*
- o) *Regulation of the Minister of Climate and Environment of October 7, 2022, regarding detailed technical requirements for hydrogen stations*
- p) *Regulation on Alternative Fuel Infrastructure (AFIR) of July 14, 2021*
- q) *Guidelines for conducting SAT tests according to CEP (Clean Energy Partnership)*

27. Technical description of the refueling simulator including parameters, as listed below:

- a) *Length*
- b) *Width*
- c) *Height*
- d) *Empty weight*
- e) *Overall height (with chassis)*
- f) *Capacity [l]*
- g) *Gross hydrogen storage capacity at 15°C [kg]*
- h) *Permitted operating pressure [barg]*
- i) *Permitted operating temperature [°C]*
- j) *Size [ft]*
- k) *Pressure tank type*
- l) *Description of equipment*

28. A quote for the delivery of the simulator including the following information:

- a) *Manufacturer/supplier*
- b) *Warranty: no less than **3 years** of operation*

- c) *Minimum required equipment operating time: **10 years***
- d) *Availability of spare parts for a **minimum period of 10 years***
- e) *Operating parameters: operating pressure, capacity in kg H₂, length of the set*
- f) *Confirmation required that service/repairs will be carried out in Poland*
- g) *Detailed information on the the chassis and axles - manufacturer, confirmation that repair service is possible in Poland - if required.*
- h) *Delivery time*

Confirmation of delivery of the indicated documents at a later stage of the procedure:

1. *User manual, maintenance manual, testing procedures for the developed simulator, and technical documentation for all devices in Polish.*
2. *PFD diagram and P&ID diagram for the proposed solution*
3. *Simulator data sheet*
4. *Description of the simulator's construction and operation, connections and commissioning, etc.*
5. *Warranty inspection schedule*
6. *ADR admission certificate issued by the Transport Technical Supervision ("red stripe") and a Type Approval - if required*
7. *Technical inspection and approval report for all pressure sections issued by the Transport Technical Supervision*
8. *Confirmation of obtaining the required decisions and permits, including approval for operation by the Transport Technical Supervision and the Office of Technical Inspection (UDT) (pressure equipment registration and CE certification of the simulator equipment set)*
9. *Confirmation of the required documentation for the conformity assessment and CE certification of the simulator equipment*
10. *Registration certificate/registration location: Płock*
11. *Risk analysis/explosion hazard assessment, hazard analysis (in accordance with ISO 19880-1 Hydrogen Fueling Station and Vehicle Interface Safety Technical Report)*
12. *Noise emission - if required.*

FORMAL REQUIREMENTS

Required submission of a technical offer for the supply of a performance control simulator for hydrogen refuelling stations, taking into account the technical specifications indicated in

the scope of work.

Required submission of a commercial offer for the delivery of a performance control simulator for hydrogen refuelling stations, taking into account:

- Price
- Delivery date
- Warranty period

General terms of this RFI:

1. This RFI shall not be referred to as a request for proposal (RFP), invitation to negotiations or any other form of ORLEN obligation to conclude a contract with a Responder to the RFI, or to conclude a direct or indirect initial agreement. In respect of the foregoing provision, the responders shall not be entitled to any claims against ORLEN.
2. ORLEN reserves its right for free selection of companies that are to be invited to submit replies as part of this RFI.
3. ORLEN shall not be liable or bear any costs related to compilation of replies by the Responders, specifically those related to entering, preparation and submission of replies.
4. Assessment of replies to this RFI shall be confidential and shall not be made available to the general public.
5. Reply to this RFI can be submitted in Polish or English language.
6. All costs related to the preparation and submission of the RFI information are borne by the RFI Bidder. Regardless of the results of the action, ORLEN will not be responsible or indebted in any way for costs or losses incurred by the Bidder in connection with the preparation and submission of the RFI information.