



Market Consultation

Mobile Booster for the benefit of N.V. Nederlandse Gasunie

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Version 0.1

N.V. Nederlandse Gasunie
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1 GENERAL INFORMATION

1.1 N.V. Nederlandse Gasunie

Gasunie is an European gas infrastructure company. The Gasunie network is one of the largest high-pressure pipeline network in Europe and consists of more than 15.000 km of pipelines in The Netherlands and Northern Germany, dozens of installations and approximately 1.100 gas receiving stations.

The annual throughput of gas is approximately 125 billion cubic meters. Gasunie serves the public interest in the markets in which it is active and strives to create optimal value for stakeholders.

More information about Gasunie can be found on <https://www.gasunie.nl/en/home>

1.2 Mobile green gas booster

As a part of the energy transition Gasunie wants to facilitate, within its legal framework, the green gas business. In the Netherlands, green gas facilities deliver in general to a local low pressure distribution grid. In case the demand of gas is lower than the local production of green gas the grid pressure will consequently increase to a level that the green gas facility must reduce or even stop his production.

A solution is to install a booster to compress the surplus of gas in the distribution network (app. 8 bar) to a the regional network of GTS with a higher pressure (app. 40 bar).

The current business of green gas production is very dynamic including the forecast for the coming years. For that reason Gasunie is looking for mobile gasboosters that easily can be located at sites when the production capacity leads to entry problems and later on removed to other locations when necessary.

For applications with a stable long-time forecast Gasunie has developed a more permanent solution.

Regarding the energy transition in a broader perspective, Gasunie also like to know if there are standard solutions which also can compress natural gas with a small amount of hydrogen.

By all means, Gasunie is looking for suppliers who have preferably standard OEM applications regarding the described challenges of Gasunie .

1.3 Market consultation

Gasunie wants to get a good impression of the currently available solutions regarding mobile booster applications.

With this consultation Gasunie wants to obtain information about:

- Maximum capacity that be can be transported as one part without special permits;
- Maximum allowable percentage hydrogen (in a methane / hydrogen mixture);
- Rangeability;
- Price indication of a unit (CAPEX / yearly OPEX);
- Possibilities for service and maintenance;
- Performance: (expected life time / required maintenance / MTTF / MTTR)

The information of this consultation will be used to advise the Asset Owner of Gasunie.

Depending on the outcome and other input parameters for the business case the Asset Owner might continue the process by starting a tender.

1.4 Scope / requirements

In this phase of the study we defined some requirements to clarify our thoughts about the application.

- The battery limits of the container based package are defined as:
 - Flange connection "gas in"
 - Flange connection "gas out"
 - Electrical supply connection
 - Connection data interface
- OEM standard if available;
- Design lifetime preferably 10 years or more;
- Transportable as one part/unit over the road without special permit required
- Package including:
 - Pressure safeguarding;
 - Fiscal metering system (with interface to an external system);
 - Cooling system;
 - Compression;
 - Auxiliaries;
 - Control system (incl. required climate control).
- Proces parameters:
 - P_{in} 6 to 8 bar(g);
 - P_{out} max 40 bar(g);
 - T_{in} gas 5 - 20° C.;
 - T_{out} gas max. 50° C.;
 - T_{amb} -20 - +35° C.
 - Water dew point gas $\leq -10^\circ$ (at 7 barg)
- Signals from / to external system:
 - In: interlock for running;
 - Out: warning;
 - Out: failure
 - Out: running
- Preferably the possible configuration of parallel units (to increase capacity / availability where needed);
- Compressor electrical driven (frequency converter);
- Suitable for electrical supply by gasgenerator-set;
- Oil free compression;
- Zero or near to zero emission (odorised gas);
- Suitable for unmanned operation;
- Maximum noise production (with closed doors): 67 dBA at 1 mtr. distance
- For foundation concrete industrial plates will be used;

After sale services

- Package preferably fully serviced by supplier;
- First analyse by maintenance department customer (with back-up by phone or remote service) ;
- Response time for corrective service: < 2 days on site

Typical gas specification:

Natural L-gas specification and optional mixtures with hydrogen.

References

The package shall be CE marked and comply with Dutch laws and regulations.

Gasunie standards

Not applicable

2 PROCEDURE

2.1 Schedule

Activity	Date / Period
Publication of the consultation via Tendered	4 February 2021
Deadline submission of response via Tendered	4 March 2021

2.2 Exchange of information

The exchange of information for this market consultation is carried out electronically via Tendered, www.tendered.nl. The use of Tendered is free of charge.

If you have a product that might be interesting for Gasunie to use, please provide us the requested information by using the question form in Annex 1. You can send the question form, your technical information (specifications) and prices to a.m.dontje@gasunie.nl.

For questions about this consultation you can contact the contact persons for this consultation:

- Mr. B. Schoutsen (Purchaser), b.schoutsen@gasunie.nl
- Mr. A.M. Dontje (Project developer), a.m.dontje@gasunie.nl

2.3 Conditions

By taking part in this market consultation you agree with the following conditions:

1. Answers must be send via email to the contact person of this consultation.
2. Communication is in the English or Dutch language.
3. Participants cannot derive any rights based on this market consultation.
4. Your answers are confidential and shall only be shared within Gasunie;
5. The provided information is only used for further investigations and advise.
6. If a proposal is interesting for Gasunie we can contact you for further information.
7. Gasunie is not bound to the results of the market consultation.
8. No rights may be derived from the planning. Gasunie retains the right to change the planning.

Annex 1 Question Form

1. What kind of activities does your organization offer? Are you a compressor manufacturer or a system integrator / packager?

Answer 1

2. Please submit a list with any reference projects and what is your sales market?

Answer 2

3. Does your system meet the requirements as mentioned in the scope / Can you give the deviations?

Answer 3

4. What is the maximum capacity (m³/h) of a package that can be transported as one part without special (Dutch) transport permits?

Answer 4

5. What are the dimensions of your package? (size, weight)

Answer 5

6. What is the total electrical power consumption of a unit? (incl. auxiliaries)

Answer 6

7. What is the maximum rangeability of a unit? Is it only achieved by speed control or do you also use other techniques?

Answer 7

8. Is your compressor suitable for methane / hydrogen mixtures? If it is till what percentage of hydrogen is allowable? What is the financial impact of this option?

Answer 8

9. What is the amount of gas emission during normal operation?

Answer 9

10. Can you submit in this phase a typical P&ID and arrangement drawing of a compression system?

Answer 10

11. Please submit your budget price for a unit incl. cost break down and accuracy

Answer 11

12. Can your organisation also offer a service and maintenance contract?

Answer 12

13. What is the required maintenance and what is the availability / MTTF / MTTR?

Answer 13

14. Do you have additions that might be interesting for our application?

Answer 14