



GUIDELINE FOR MARKET CONSULTATION

Hydrogen (H₂) Flowmeters

For the benefit of N.V Nederlandse Gasunie

Reference (TenderNed/ EU official journal)

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gasunie
crossing borders in energy

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Attachment:

Market consultation response form

1.1. Introduction

This guide provides information on the market consultation for H2 Flowmeters for N.V. Nederlandse Gasunie (hereafter: Gasunie). Gasunie is an energy infrastructure company. In the Netherlands and Northern Germany we manage the infrastructure for large-scale transport, storage and conversion of gas. Now this is mainly natural gas. With the energy transition, this is increasingly shifting to green gas and hydrogen. We are also working on the construction and management of networks for heat and CO₂. More information about Gasunie can be found at www.gasunie.nl.

This guide describes the process of the consultation and any follow-up to the initial written consultation, for example in the form of a follow-up discussion and/or site visit.

The announcement of this market consultation was sent to TenderNed for publication on 29 September 2023.

1.2. Market consultation

Gasunie wants to collect information from the market about flow meters that (primary) are suitable for hydrogen applications. It also wants to test to what extent the market can supply the flow meters in accordance with the scope that Gasunie can currently provide.

With this market consultation, Gasunie wants to explore the market for flow meters for hydrogen delivery stations (HDS). Gasunie can use all information obtained from the market to prepare a European tender for flow meters.

This document in Chapter 2 Procedure indicates how market parties can submit their response to Gasunie.

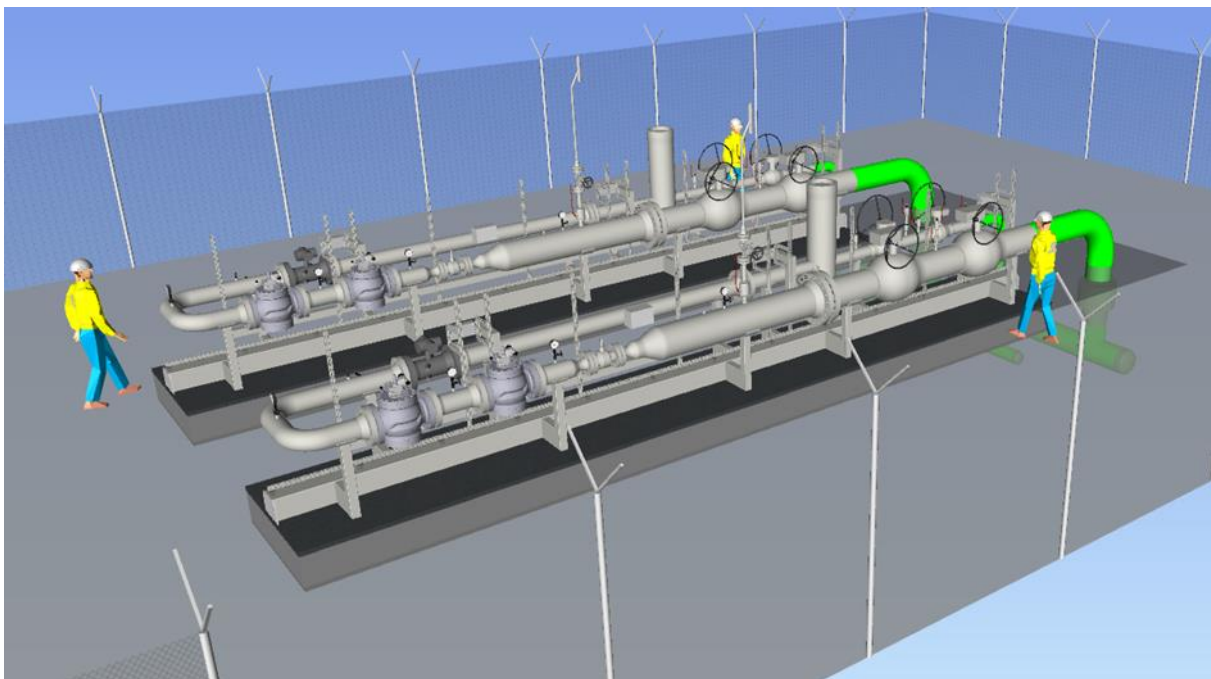
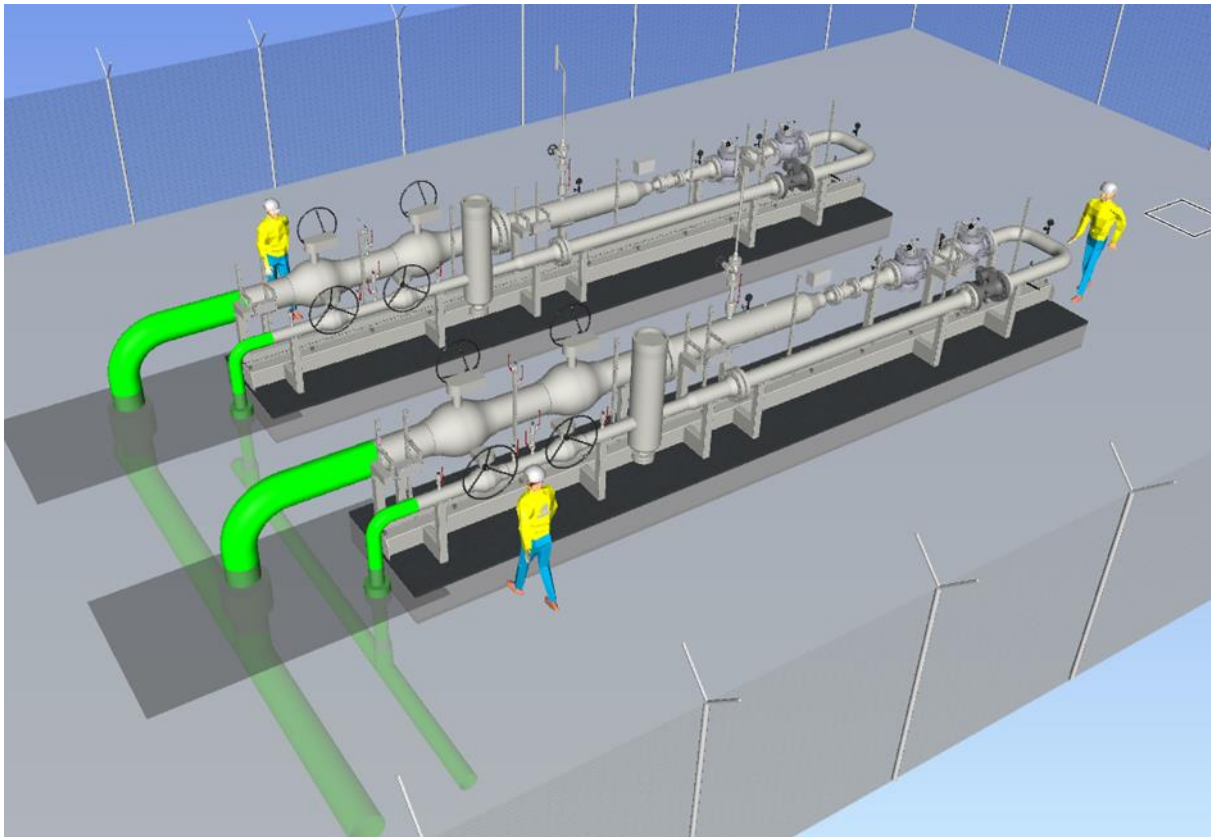
Hy Network Services (HNS) – a subsidiary of Gasunie – intends to develop an underground pipeline network with associated (above-ground) facilities for the transport of hydrogen. Part of this is the Hydrogen Delivery stations (HDS). An HDS will be installed as part of the new connections. These connections are necessary to supply the connected party with hydrogen. The main functions of the HDSs are:

- Accountable measurement;
- Filtering;
- Pressure management;
- Pressure reduction.

To give an idea of the required skids, two 3D images have been added at the next page. Flow meters will be installed in such a skid. Gasunie expects that up to 2030 in total 95 HDS will be build, which equals approximately 200 flow meters (due to redundancy).

Optional scope for this market consultation are high pressure H2 applications (Hy Stock – hydrogen cavern storage, see www.hystock.nl)

For a more detailed description of the (high level) specifications see the table on the next page.



Requirement	Specification
Type	H2 Flowmeter Fiscal and non-Fiscal
Nominal diameter	2"-10" (DN50-DN250)
Pressure class	ANSI 150 - 1500
Application	• Suitable 100% H2 • Suitable for above ground • Atex minimum requirement Gasgroup IIC T3
Connection type	Fiscal Flanged, ASME B16.5 RF ; non-fiscal not prescribed
Pressure	Fiscal = 30 to 66,2 bar; non-fiscal up to 200 bar
Flow	Fiscal several Qmax 270 m3/h to 6500 m3/h ; non fiscal Qmax ~10.000 - ~20.000 m3/h
Design temperature	-20 / + 55 graden Celcius
Accuracy	Fiscal Class 0.5 ; non-fiscal Class 1.5
Degree of protection	IP68
Directives	PED (2014/68/EU) ATEX 114 directive (2014/34/EU) EMC (2014/30/EU)
Coating	ISO 12944 Class C5-H: high corrosivity & functionality of coating 15-25 Years
Lifetime	50 Years

In addition to HDS applications, flow meters are required for hydrogen storage (high pressure). For H2 storage (high-pressure – approx. 200 barg) are no spec sheet(s) available.

1.3. Purpose of this market consultation

Through this market consultation, Gasunie is exploring the possibilities for obtaining insights for a planned European tender for flow meters for H2 measurement. Therefore, the objective of the market consultation is to test and gain insight and overview in relation to:

- The requirements imposed by Gasunie are relevant, realistic and achievable;
- What solutions the market offers in relation to the questions and requirements asked;
- Whether the technology is proven or still developing;
- Obtaining a cost indication in order to achieve the best possible and accurate target value of a tender;
- What the market looks like and what distinguishes parties;
- The expected trends and developments in the market of H2 flow meters.

In order to get a good picture of the possibilities in the market, it has been decided to carry out a market consultation. Gasunie invites selected parties to respond and appreciates their contribution.

1.4. Choice of type of market consultation

Gasunie chooses to organize an open market consultation. This means that this market consultation will be published on TenderNed (and the EU official journal), and will take place via e-mail. The reason for this is, on the one hand, that Gasunie wants to obtain small-scale input from the market at the shortest possible lead time and low costs.

In addition, Gasunie has chosen to use a combination of written and oral market consultation (by way of an explanatory moment and/or site visit) to obtain information on the relevant parts currently applicable to Gasunie. An oral consultation is optional and only for those that are selected by Gasunie for a 'follow up' meeting.

1.5. Procedure market consultation

The procedure is as follows:

1. Publication of this market consultation document via TenderNed (and EU official journal).
2. Publish this consultation document by e-mail to market participants who have signed up .
3. Market participants who wish to participate in the market consultation may ask questions in writing. These questions can be submitted to the following email address:

r.p.mulling@gasunie.nl

To submit your responses or questions, please use only the above

E-mail address, subject: 'Comments / Questions Flow Meters + your organization's name'.

In addition, you would like to always include your contact name and phone number in the text.

4. You can ask questions and submit them at the latest according to the date and time used in the schedule. The completed questionnaire should be sent to the email address stated above.

Please submit the completed questionnaire only in the format provided (as an attachment to this questionnaire).

5. You can answer and submit the questionnaire according to the date and time used in the schedule.
6. Responses to the questions submitted by market parties will be sent to participating market parties by email at the latest in accordance with the date and time of the plan.
7. Gasunie will make a selection from the participating parties shortly after the final answer has been submitted, with which a dialogue session will be opened. The dialogue session will be an explanation of the answers you have given. Where Gasunie needs (additional) explanation and/or a site visit, any questions will be sent in advance with the invitation for the explanation session. The dialogue session is inspired by an interactive session in which questions can also be asked which will not be shared with you beforehand. Gasunie attaches great importance to the fact that the explanation is also given by knowledge carriers of your solution that your organization can provide.
8. The selection of the market participants who are given the opportunity to participate in an explanatory session will depend on the way cases have been answered. For example:
 - Careful attention has been paid to formulating the answers;
 - Understand the complexity, the answers are appropriate;
 - The way you express your vision of our desired situation.

1.6. Market consultation report

The outcome of the market consultation (except for the information of the participants that is classified as business confidential by the participants) shall be included in an anonymized market consultation report (highlights only). In this report, an anonymized summary is made on the main lines of the responses received, for each question asked. This report will be prepared and sent to the participating parties shortly after completion of the market consultation. It will also be included in the guidance document on a possible future EU tender or tenders.

1.7. Note of information

You can ask questions about the content and process of the market consultation as planned. Answers the questions by e-mail in the form of a Note of Information.

Participants' questions will be answered anonymously upon receipt by Gasunie. In this context, we ask you to make your questions available exclusively anonymised to us.

Requests from participating parties shall be submitted by email by the date and time specified in the schedule. You will then receive Gasunie's replies by email no later than the date specified in the schedule

1.8. Errors and contradictions

All documents, including any accompanying annexes following the present market consultation, have been compiled and prepared by Gasunie with the utmost care. In the event that a participating party finds errors, irregularities, inconsistencies or ambiguities, we kindly but urgently ask you to inform Gasunie.

1.9. Contact

Your contact person for this market consultation is Rick Mulling. You can only reach the contact by sending an email message:

Contact:	Email address:
Rick Mulling	r.p.mulling@gasunie.nl

It is not permitted to contact any person other than the person or persons mentioned above in connection with this market consultation.

Participants in the market consultation cannot derive any rights from verbal statements, commitments and suggestions from Gasunie employees and/or hired personnel.

1.10. Tender and market consultation language

The main language of this market consultation, in words and writings, is in the English language or the Dutch language, with English preferred.

1.11. Nature of market consultation and reimbursement of costs

Gasunie stresses that the market consultation is of a non-binding nature for both Gasunie and participants. Gasunie does not, through this market consultation, incur any obligation in respect of

Gasunie's marketing of a service, the procurement or the purchase of products. Participants cannot derive any right from this market consultation.

Participation in this market consultation by participants does not lead to any advantage or disadvantage in any (future) acquisition path to be started by Gasunie.

The costs of participating in this market consultation shall be borne entirely by the participant. Gasunie reserves the right to suspend and/or terminate all or part of the market consultation. Participant(s) shall not be entitled to any form of compensation in such a situation.

1.12. Intellectual property

All intellectual property rights, including copyright, which are based on documents and information provided by Gasunie in the context of this market consultation, including in any case the market consultation document (this document) and explanations provided, both oral and written, are vested in Gasunie.

Except as provided for by the Copyright Act ('Wet Auteursrecht'), no reproduction of the documents and their attachments may be made by printing, photocopying, scanning, microfilm or otherwise without the written consent of Gasunie, except if and to the extent reasonably necessary for the correct and complete answer of the questions.

1.13. Terms of agreement

Dutch law applies to this market consultation.

By accepting this request or submitting your reply, you indicate your unconditional agreement to the terms and conditions provided in this market consultation document.

1.14. Planning market consultation

Gasunie has opted for a written market consultation, with optional explanation and/or (site) visit. The table below describes the different steps of the market consultation including the planned planning. No rights can be derived from this schedule.

Gasunie reserves the right to change the planning or (partially) suspend and/or terminate the market consultation. In such a case, Gasunie shall inform your organization in good time of the proposed change(s) by e-mail.

Activity	Planning
Invitation (Publication) Market Consultation	26 September 2023
Opportunity to ask questions	16 October 2023
Questions answered by Gasunie	23 October 2023
Submit final response (s) by participants	1 November 2023
Optional: Session explanation and/or site visit by selected supplier(s). A maximum of 1.5 hours per selected organization is required, a visit to the site is to be determined.	If applicable to be planned in November 2023
Send summary report to participants (provisional date)	Mid December 2023
Start tender phase	January 2024

2. Questions Market Consultation

Below you will find the questions from Gasunie. Please use the separate response document to provide answers to Gasunie.

Product and technology		
#	Question	Remarks
1.1	What other technologies available other than ultrasonic (US)?	
1.2	Are there any supplier specific technological advantages and/or developments?	
1.3	What is the minimum and maximum flow-rate that is covered	In m3 per hour
1.4	Is your company involved in H2 Joint Industry Projects? If yes, which?	
1.5	On which term do you think to have a MID certification on H2 for your flowmeters?	
1.6	Which quality requirements are extra important when it comes to measuring hydrogen?	
1.7	Would your meter be able to handle gas velocities of 40 m/s or more and continue to measure properly?	
1.8	What is the maximum gas velocity at which the flow meter(s) can operate properly?	
1.9	Which measurement principle do you think is best for measuring H2 flow and why?	
1.10	Substantiate why we should or should not insulate thermally	
1.11	Which certificates (material/ MID/ PED/ ATEX etc.) do your meters have for H2 so far?	
1.12	What is the minimum allowed density to be able to measure accurately and what are the consequences for the measuring range for Coriolis up to DN200? Please indicate for each DN size.	
1.13	What options do you see for mounting the Coriolis stress-free in the process? For pressures of 30-60 barg and temperatures up to -10 to +55 degrees.	

Supplier		
#	Question	Remarks
2.1	What is the annual specific turnover (in euro) of the supplier?	Specific turnover is the turnover in the market for flow meters
2.2	What is the maximum production capacity (in pieces / meters per year)?	Capacity available for the Dutch market
2.3	Do you have a support department for customers and after sales service?	

2.4	If yes, is there a local presence in the Netherlands?	
2.5	Can you supply flow meters for H2 Please provide details	

Market		
#	Question	Remarks
3.1	How long (in years) is the supplier active in the H2 flow meter market?	Both in- and outside the Netherlands
3.2	What distinguishes the supplier from it's competitors?	

Commercial / Contractual		
#	Question	Remarks
4.1	Are you familiar with Gasunie General Purchasing Conditions?	The Gasunie General Purchasing Conditions for supply of goods will be applicable
4.2	If yes, are these conditions acceptable for the participant.	
4.3	What are the critical contractual subjects for participant	
4.4	What is the (indicative / budget) price per H2 flow meter? In case of a range of flow meters, please provide this for the range.	
4.5	What are the current lead times (delivery time after receipt of order, in weeks)?	