

Market consultation

For:

- and
1. a Continuous Stirred-Tank Reactor (CSTR) system
 2. a Single Tube Liquid Phase Reactor (STLPR) system

Contracting authority:

The Netherlands Organisation for Applied Scientific Research TNO

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Contents

1.	Introduction	3
2	Basic principles and preconditions.....	5
3	Background of the demand	6
4	Questionnaire	6
5	Appendices	7

1. Introduction

This document describes the organisation TNO, and the content, objective, schedule, preconditions and procedural matters of the market consultation.

TNO, department Biomass & Energy Efficiency intends to purchase a Continuous Stirred-Tank Reactor (CSTR) system and a Single Tube Liquid Phase Reactor (STLPR) system. Both systems will be used in research for the conversion of biomass-derived components and chemicals in a continuous mode. TNO would like to gain more information from the market by conducting this market consultation. The information gained might be used as input for the formal tender process following the market consultation. Therefore, any party which is able to deliver such system(s) for the purposes described in section 3 is invited to contact TNO to present the answers on the questions posed in section 4 and other relevant information they would like to share with TNO.

After this market consultation TNO will decide which tender procedure is the most appropriate choice to buy a Continuous Stirred-Tank Reactor (CSTR) system and a Single Tube Liquid Phase Reactor (STLPR) system.

1.1 TNO

The Netherlands Organisation for Applied Scientific Research, hereafter 'TNO', is a modern, theme-led Research & Knowledge organization. It was established in 1930 by Act of Parliament with the intention of maximizing the practical relevance of scientific research to the public sector, industry and society at large. The government of the day believed that this would enhance the innovative strength of the Netherlands and contribute to long-term economic growth.

TNO is a national institution acting in the general interest and, for the purposes of European policy and legislation, is therefore a 'body governed by public law.' Although it operates under the formal responsibility of the Minister for Economic Affairs, TNO enjoys complete independence and autonomy in its day-to-day activities.

The organization has approximately 3,000 staff who work to develop and apply innovative knowledge. TNO conducts contract research on behalf of clients in all sectors, provides specialist advice and consultancy, and licenses the use of its many patents and the specialist software it has developed. TNO also tests and certifies products and services, issuing an independent quality assessment. The organization has spawned numerous commercial spin-offs to bring its innovations to market.

One of TNO's key strengths is that it brings various scientific disciplines together under one roof. Those disciplines combine and interact to create groundbreaking and sustainable new solutions. Increasingly, TNO seeks collaboration with partners in government and industry, working alongside knowledge institutions and societal organizations at home and abroad. Through its varied activities, TNO stimulates economic growth and social renewal. The organization's mission statement (as phrased in its 2015-2018 Strategic Plan) reads, "TNO connects people and knowledge to create innovations that boost the competitive strength of industry and the well-being of society in a sustainable way." Its objectives are encapsulated in the motto, "TNO, Innovation for Life". For further information, see: www.tno.nl.

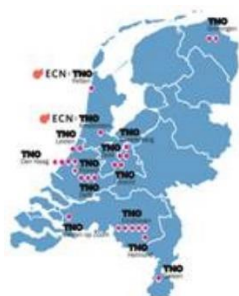
1.2 Organizational structure

TNO's high level of ambition demands an appropriate organizational structure and corporate culture. Staff must be given every support as they pursue innovation and productive cooperation. The current organizational unit structure is shown below:



All units are concerned with issues which are high on the national and European innovation agenda. The themes form the focus of the organization's nine units, each of which is responsible for acquiring and performing contract research relevant to its specific theme and innovation areas.

Staff of the various divisions and expertise areas are based at regional offices located throughout the Netherlands. The organization's head office is in The Hague and it is here that the central support departments ('Shared Services Organisation') are based.



Procurement

The Procurement Department oversees all purchasing, procurement and tendering procedures on behalf of TNO.

As part of the Finance, Procurement & Legal (FPL) division, the Procurement Department is responsible for organizing and implementing all procurement processes in keeping with the corporate objectives of the organization.

1.3 Procurement

The TNO Procurement Department is involved in the purchasing, procurement and tendering procedures on behalf of TNO, which is done in close cooperation with the department Biomass & Energy Efficiency which is part of the unit ECN part of TNO. As part of the Finance, Procurement & Legal division, the Procurement Department is responsible for organizing and implementing all procurement processes in keeping with the corporate objectives of the organisation.

1.4 Purpose

Before proceeding with the preparation of a tender, TNO would like to consult the market on how this tender (in broad lines) can be structured. Within the scope of the market consultation, advice is sought to gain insight into the potential market for the delivery of both a CSTR system and a STLPR system for TNO. The market consultation is open to all players in the market.

The market consultation generates benefits for all parties involved. TNO observes what is possible and what the perception is of the market, to provide a more effective and coordinated response in how, for example, preferences and requirements can be formulated in the tender.

For interested players in the market an added advantage is that they get an early view of TNO and the tender which might follow. In addition, the market can affect requirements which will come back in the tender. This allows participants to contribute to the success of the tender.

The purpose of the market consultation is covering the following aspects:

- To gain more insights in discriminating factors for different configurations of the CSTR system and the STLPR system.
- To gain more insight into the current possibilities and the choice on the market.
- To get a clear understanding of the visions, ideas and suggestions of market participants.
- To gauge market interest for this possible tender.
- To decide which procurement strategy is best suited to our functional requirements in the current market.

The results of the market consultation may be processed in the possible tender documents, without traceability of participants of this market consultation.

1.5 Schedule

There are no follow up sessions planned for this market consultation, although after the market consultation TNO may wish to contact subscribers for an explanatory interview on their reply. The schedule of the market consultation is shown in the table below.

Date	Deliverable / activity	Who?
17 th of January 2019	Market Consultation document published by TNO	TNO
28 th of January 2019, 15:00h	Deadline for submitting your input	Subscriber
Date of tender publication: exact date to be determined	TNO summary of market consultation results on TenderNed	TNO

1.6 Explanatory interview

Based on the answers of the Questionnaire of section 4, TNO may wish to invite or visit parties for an explanatory interview. TNO will assess the received answers on content and relevance for an explanatory interview for TNO, as well as the need for (further) explanation. The location for the interview will be Westerduinweg 3, Petten (NL).

2 Basic principles and preconditions

The basic principles and preconditions mentioned below apply to this market consultation:

- TNO observes the principles on non-discrimination and transparency when carrying out this market consultation;
- This document is solely intended for market consultation purposes;
- Market parties who do not join this market consultation are thus not excluded of participating the possible tender. Neither are market players who join this market consultation in any way excluded, or privileged in, the possible participation of the tender;
- If market parties are not joining this market consultation, although they are able to deliver such system, they are kindly requested to forward this information to the TNO contact person named in section 2.1;
- This market consultation is without any obligation, both for participants and for TNO;
- Parties that are participating in this market consultation, or that are not participating, cannot derive any mutual obligations or rights towards TNO;
- Participating to this market consultation does not confer an entitlement at obtaining a contract award;
- TNO shall not reimburse any eventual costs in participating to this market consultation;
- Participating market parties agree that the information provided by them can be processed anonymized in the further elaborating program of requirements;
- In the context of the market consultation, provided information may differ from the information that will be provided in the tender procedure;
- The contribution of participating Parties will be handled as much as possible with confidentiality and in any case TNO will take into account the legitimate interests of the parties;
- The official language during this market consultation is English;
- TNO is not bound in any way by the outcome of the market consultation or obliged in realisation and/or tendering of the project upon which the market consultation is linked;
- No claim will be honoured for the use of information, confidentiality, or request for compensation herewith;
- All documents submitted by the participating Parties are considered public documents and shall be copy-right free unless otherwise marked by participating Parties. If copyrights are applicable, TNO is protected by the participating Parties;
- TNO reserves the right:
 - To perform the proposed procurement process in a different way, in terms of content and style, than the process that may have been communicated;
 - To cease publication of the market consultation temporarily or permanently;
- Participating in this market consultation, constitutes the Parties unconditional approval of the procedure as stated in this document.

2.1 Form and content

The consultation is set up as follows:

Written responses

Any interested market party who believes that they can contribute to the market consultation, should respond to TNO. Responses should be received by TNO no later than 28th of January 2019, 15:00h. Responses can be sent to:

Name : Raymond Peddemors (Senior Buyer) and Frank Wisker (Category Manager)

Department : Procurement

E-mail : both raymond.peddemors@tno.nl and also to frank.wisker@tno.nl

In the heading of your e-mail and in all future correspondence relating to this market consultation should be clearly mentioned 'Market consultation CSTR STLPR 2019 FPL/INK 12'.

2.2 Intellectual property rights

Except where expressly permitted under Copyright Law or where necessary for the successful preparation of a Market Consultation document, no part of the market consultation documents may be reproduced in any form, by print, photocopy, DVD, CD-ROM, microfilm or other means, without the prior written permission of TNO. Market consultation documents and all accompanying documents submitted further to the Market Consultation Procedure become the property of TNO upon receipt.

2.3 Use of TNO logo and documents

It is not permitted to copy, modify or otherwise use the TNO logo on any documents submitted by the Market Party further to the Market Consultation Procedure.

3 Background of the demand

TNO intends to buy a CSTR system and a STLPR system to research the conversion of biomass-derived components and chemicals in a continuous mode. Both systems are to be located in a laboratory of the biorefinery cluster of the Biomass and Energy Efficiency (BEE) unit of ECN part of TNO in Petten (NL).

Both separate systems work independently of each other. They will be placed side by side to allow automated sampling. The sampling and analysis equipment is already available and is not part of this market research. If necessary, the sampling and analysis equipment can be placed between the two systems, but this is still open for discussion. In the sections below aspects are discussed in more detail, although it needs to be noted many of the figures mentioned are still under discussion and can also be influenced by the outcome of this market consultation.

3.1 The reactors

The heart of the both systems are their reactors. The final geometry of the reactors is still subject to discussion.

3.2 The equipment

In addition to the reactor, the systems have vessels with unprocessed (liquid) starting material, feed pumps and collection vessels for the product. In addition, the systems ensure accurate monitoring of the residence time, temperature, flow rates and the implementation of safety measures.

3.3 Environment

Both systems will be located indoor.

3.4 First specifications

In Appendix A the specification of the CSTR system is enclosed, which shows a detailed list of requirements, some of which are still to be discussed. In Appendix B the specification of the STLPR system is enclosed, which shows a detailed list of requirements, some of which are still to be discussed.

4 Questionnaire

Subscribers are not obliged to answer all questions of the market consultancy. Subscribers can be asked for additional explanation in a second round. Subscribers are requested to limit their response with a maximum of 4 pages of A4.

	Questions on interest
A1	Do you consider, based on the limited information of this document, to apply to the tender? If yes, why, if not, why not?
A2	If you consider to apply to the tender as a combination of parties, which parties would that be and why would you choose for these parties?
A3	Do you consider, based on the limited information of this document, when both systems are tendered separately, to apply to only one tender? If yes, why, if not, why not?
A4	Would it become more attractive to you to apply for both systems when it's possible to deliver one of the systems without of the reactor? If yes, why?
A5	Based on the limited information in this document, what would you estimate as budget for each installation and what would the estimated budget be for both together?
	Questions on the content
B1	Are the specifications feasible? If not, why and what would then be feasible?
B2	Are there any specifications that are relatively expensive but after adjustment will cost much less? If yes, which specification(s) and what would you advice?

	Question regarding the tender
C1	What is the track-record of your company in engineering / procurement / commissioning of CSTR's and STLPR's?
C2	We consider the development of a reactor system to consist of several phases: design, engineering, manufacturing, system integration, testing, commissioning. Which phases will be performed by yourself, which will be outsourced to third parties?
C3	What are your strongest added values?
C4	Which ones are the price-driving parameters in the execution of the project?
C5	Which important costs can be reduced using a well-chosen approach during contract?
	Questions regarding planning
D1	How much time do you need to make a sufficient proposal during the tender?
D2	What would be the lead time from contract award to Preliminary Design Review?
D3	When would it be possible to perform the Factory Acceptance Test at your premises?
D4	When would it be possible to perform the Site Acceptance Test at TNO?
D5	What is the expected maintenance interval?
D6	What do you consider as the greatest risk(s) of the development of each of the systems?
	Finally
E1	Are you prepared to explain your answers to the questionnaire orally by invitation?
E2	Do you have other ideas, suggestions, or comments?

5 Appendices

Appendix A Specifications CSTR system

Appendix B Specifications STLPR system