

Tender Instructions

Applicable to the European Public Tender for: the Realization and Delivery of Möbius2 Modules DSM and ASM

Contracting authority:

The Netherlands Organisation for Applied Scientific Research / TNO

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Definitions

In this document, certain capitalized words have a specific restricted meaning, as given below. In the case of nouns, the specific meaning applies to both singular and plural forms. Terms which do not appear in this list but which are defined by legislation, notably the *Aanbestedingswet* (Procurement Act 2012, amended 2016) take the meaning intended by that legislation.

Aanbestedingswet (Dutch Procurement Act)	: the <i>Aanbestedingswet 2012</i> , effective 1 November 2012, as published in the Government Gazette 2012 no. 542; amended 1 July by Act of 22 June 2016 to amend Netherlands Procurement Act 2012 in connection with the implementation of European Directives 2014/23/EC, 2014/24/EC and 2014/25/EC; commonly referred to in English as the Procurement Act. May be abbreviated to 'AW'.
Appendices	: Appendices to these Tender Instructions, viz. <ul style="list-style-type: none"> • A01 to A06 – prescribed templates to be used when preparing and submitting the Tender (bid) • B01 to B04 – prescribed templates to be used for the provision of information by one or more Third Parties e.g. evidential documents to support the Self-Declaration • C01 to C03 - documents and supplementary information which form part of the Tender • Instructions but are not intended for submission to any external party.
Award Criteria (singular: criterion)	: the criteria used by TNO to determine which Tenderer has filed the most economically advantageous tender. Further information on the Award criteria can be found in chapter 6.
Award Decision	: the decision taken by TNO whereby the winning Tenderer is to be invited to enter into a Contract; alternatively, the decision not to award the Contract to any party.
Contracting authority	: The Netherlands Organisation for Applied Scientific Research (TNO).
Combination	: an alliance of companies or legal entities who submit a joint tender as if acting as a single entity. Each member of the alliance is jointly and severally responsible and liable in law for the effective performance of the Contract, if awarded.
Contractor	: the successful Tenderer to whom the Contract is awarded.
Contract	: the legally binding agreement between TNO and the Contractor, effected further to the outcome of the Tender procedure.
Eligibility Requirements	: the requirements imposed by TNO on all tendering parties not automatically excluded (under the Grounds for Exclusion), establishing minimum standards which must be met in order to be considered for the Contract.
Grounds for Exclusion	: reasons whereby a party is automatically deemed ineligible to take part in the Tender procedure. Depending on the contents of the tender documents and description, such reasons may relate to the (personal) circumstances of the Tenderer company, an officer of that company and/or a Third Party with a material involvement in the Tender and the proposed Contract. The Grounds Exclusion are explained in chapter 5.
Minimum Requirements	: the minimum requirements imposed by TNO with regard to the provision of supplies, services or works, i.e. the manner in which the Contractor is to perform the activities specified by the Contract.
Memorandum of Information	: a document providing further information about the Tender procedure and/or the tender documents, compiled by TNO in response to queries it has received from Tenderers. (The queries are anonymized in the interests of confidentiality.)
Tender	: the bid submitted by the Tenderer.
Tender Instructions	: the current document in which the Tender procedure is described.

- Tender Procedure : the European tendering procedure through which a Contract is to be awarded.
- Third Party : any natural person or legal entity upon whom a market party (the Tenderer) can call to meet the requirements of financial and economic capacity and/or technical and professional competence, regardless of the nature of the relationship between the market party and the Third Party.

Abbreviations

TNO	The Netherlands Organisation for Applied Scientific Research
ICT	Information and communication technology
FPL	Finance, Procurement and Legal
DSM	Dissolution Module
ASM	Anti-Solvent Module
GHG	Greenhouse gases
ABS	Acrylonitrile Butadiene Styrene
TRL	Technology Readiness Level
PO	Polyolefins
PE	Polyethylene
PP	Polypropelene
ESPD	European Single Procurement Document
EUR	Euro
TP	Price
QU	Quality
FAT	Factory Acceptance Test
SAT	Site Acceptance Test
DFA	Dossier of Financial Agreements
DAC	digital-to-analog converter

1 Contracting Authority and Contract

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 3,400 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 2022-2025 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. TNO's organizational unitstructure has recently been changed and has a services organisation and 6 (new) units, as follows:

- Buildings, infrastructure and maritime (new: Mobility & Built Environment)
- Circular economy and environment (new: Energy & Materials Transition)
- Defence, safety and security
- Energy transition (new: Energy & Materials Transition)
- Healthy living & Work
- High Tech Industry
- Information and communication technology (new: ICT, Strategy & Policy)
- Strategic analysis and policy (new: ICT, Strategy & Policy)
- Traffic and transport (new: Mobility & Built Environment)

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 units and expertise areas are based at nine 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.

1.2.1 Procurement

TNO's Procurement Department oversees all purchasing, procurement and tendering procedures on behalf of TNO, doing for this tender in close cooperation with the Department Sustainable Process & Energy Systems.

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.

1.2.2 Department Sustainable Process & Energy Systems

Within TNO, the department of Sustainable Process & Energy Systems has as a goal to create new technologies and processes that benefit people & our planet, without compromising profit.

Three areas of our current interest are:

- Green chemistry, where we look at utilization of biobased feedstock for production of chemicals and at sustainable chemical processing, e.g. electrochemical conversions.
- Gas treatment, which provides solutions, for the production of renewable gases (biogas, syngas, hydrogen, etc.) and for the capture and utilization of CO₂.
- Circular Plastics, which develops a specific recycling process, the TNO Möbius technology, recovering pure polymers from waste plastic streams

1.3 Contract description

The purpose of the current Tender Procedure is to select one (1) Contractor for the Realization and Delivery of Möbius2 Modules DSM and ASM. The supplies and the manner in which they are supplied must comply with the specifications and criteria given in the Tender documents, and notably the programme of requirements (see Chapter 8). There may be a combination of 'hard' and 'soft' requirements. The former are mandatory and must be met. If one or more of the 'hard' requirements are not met, the Tender will be excluded, provided the exclusion is not disproportionate. The 'soft' requirements are in the nature of 'preferences' which should be taken into consideration to the greatest extent possible.

1.3.1 Scope and content of the Contract

The Contract relates to the provision of supplies and services as specified in the programme of requirements (Chapters 6 and 8) as applicable. Below is some more background information about the TNO Möbius dissolution technology and the scope and content of the Contract.

In 2019, Europe produced 58 million tonnes (Mt) plastics. Despite their dark side, plastics are here to stay for reasons of functionality. Plastic demand is predicted by McKinsey (2018) and Nova Institute (2021) to grow by a factor of 3 in 30 years accounting for 20% of oil consumption and 15% of greenhouse gas (GHG) emissions by 2050 if practices remain unchanged.

Although recycling rates for plastics have been steadily increasing, it is clear that the potential as predicted is far from realized; only 32% of the 29,1 Mt of plastic waste collected annually in Europe is recycled. Also, polyolefins and ABS recycling rates are low and need to grow to maximize circularity, i.e. lower material usage and minimized environmental impact. Plastic circularity also holds great promise with respect to reducing dependency on fossil feedstocks and thus geopolitics. Therefore, TNO has set up a Circular Plastics program (<https://www.tno.nl/en/sustainable/environment-sustainability/circular-plastics/>).

For the recycling potential to be utilized, higher quality of mechanically recycled plastic is required as well as an increased efficiency of chemical recycling. One of the promising technologies to upgrade plastics is dissolution. TNO-SPES has been working on this technology under the name of Möbius (<https://www.tno.nl/en/sustainable/environment-sustainability/circular-plastics/recycling-plastics-dissolution/>). Some schematics on the technology are given below. Dissolution achieves high grade polyolefins streams by separation of the target polymer from other polymers and/or removal of additives and contamination. Either these recycled materials can be directly compounded into plastics products or further processing in mechanical or chemical recycling is enabled.



Figure 1. Schematic representation of the TNO Möbius dissolution concept (left) and process scheme (right).



Figure 2: Current experimental setup for the TNO Möbius dissolution technology

To be able to further develop the TNO Möbius dissolution technology, this tender is to realise scale-up to TRL5 of the TNO Möbius dissolution technology as being developed by TNO-SPES, named the Möbius2. This set-up is intended to process plastics waste in the range of a 0.25-2 kg per day. This Tender concerns two of the modules that are part of the Möbius2, the DSM and ASM. The other Modules, namely Module 1 and Module 3, are not part of this tender. They will however supply the feed towards the DSM and ASM as can be seen in Figure 3. Module 1 supplies hot solvent towards DSM and Module 3 is a separation step that will supply a mixture of solvent and polymer towards ASM.

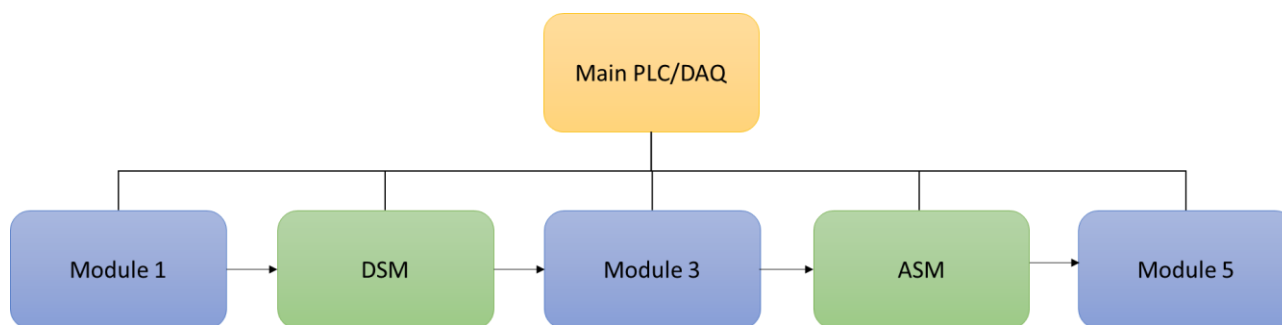


Figure 3: Block flow diagram of Möbius2

The goal for the circular plastics program is to be able to use collected waste plastics again for food packaging. This requires high quality of recycled plastics, currently unattainable due to the presence of various contaminants. State-of-the-art plastic recycling techniques fail to remove these impurities. Möbius technology is a breakthrough that is able to reach high quality of recycled polymers

Several partners and clients have asked TNO for proof of the technology at higher TRL. By realising the Möbius2 we are able to develop the Möbius dissolution technology further for these clients and determine key parameters for further scale-up towards commercialisation. Moreover, this set-up will allow the supply of more product material to test in client’s intended application. Specifically, the set-up will process one of the largest streams of plastic waste, polyolefins (PO) waste, into purified polyethylene (PE) or polypropylene (PP).

The aim with the Möbius2 is to have a process that is capable of recovering pure plastics from waste plastics. A process has been designed where each module has a specific task within the entire process. The modules can be connected in different configurations to the main control to change the process if needed. The DSM is intended to dissolve the target polymer in the waste plastic, the ASM is intended to recover that polymer. A Möbius2 set-up at RCSG Rijswijk is anticipated.

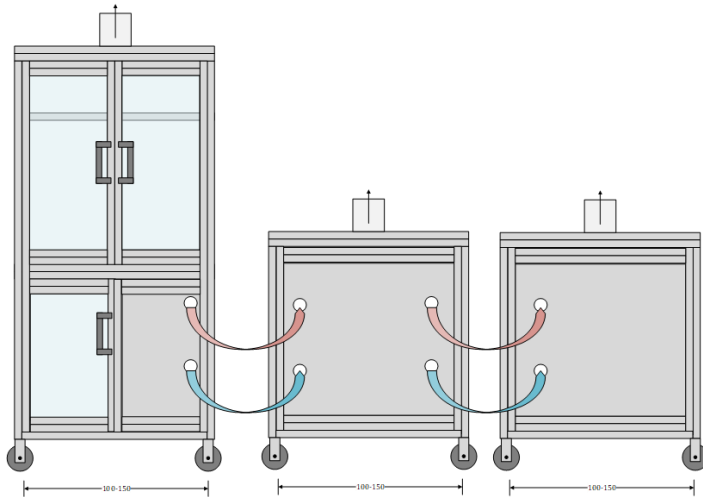


Figure 3: Schematic representation of the Möbius2 modular configuration

Möbius2 is foreseen as a modular system, meaning that each of the modules could be eventually removed, replaced or a new module is added to the entire system.

1.3.2 Contract duration

The Contract will be a one off Purchase Order for the realisation and delivery of the aforementioned DSM and ASM. TNO will make all reasonable efforts to allow the Contract to come into effect on the date mentioned in the Schedule of Paragraph 2.1.

1.3.3 Current situation and assessment of future requirements

In the current situation, the realization of a Möbius2 set-up for plastics recycling based on dissolution at RCSG Rijswijk is anticipated. Therefore TNO seeks suppliers for the delivery and realisation of two of the Möbius2 modules as described in the Programme of Requirements, notably Chapter 8.

1.3.4 Lots

This Tender consists of one Lot.

1.4 Socially responsible procurement

Sustainability is an extremely important aspect of TNO's core business. Much of our research, including the Möbius technology development subject of this Tender, is concerned with managing the economic, environmental and social impact of developments within our adopted themes. We do so using the 'roadmap' approach. In addition, we devote very close attention to the manner in which we can minimize the negative impact – and ideally maximize the positive impact – of our own operations.

We therefore attach great importance to social and environmental responsibility: People and Planet. We acknowledge that our staff are essential to our mission. The core values of TNO – integrity, independence, professionalism and social responsibility – underpin the organization's strategy and all its activities.

In terms of environmental responsibility, our policy centres on the spearheads of energy efficiency, reducing the carbon footprint of business travel, and sustainable procurement practice. Further information can be found in the TNO Sustainability Report which forms part of the TNO Annual Report.

Socially responsible procurement practice is therefore an intrinsic part of the procurement agenda. All procurement decisions are taken in consultation with the TNO budget holders and involve careful consideration of sustainability aspects. Where relevant and possible, the sustainability aspects will be translated into sustainability requirements and/or preferences which will be included in the Tender Instructions document.

2 The Tender Procedure

The Tender Procedure is conducted in full compliance with the conditions of the Dutch *Aanbestedingswet* (Procurement Act), which in turn is based on relevant European legislation. TNO has opted for the 'public' tendering procedure. This means that the Call for Tenders will be published on the TenderNed website at www.tenderned.nl.

TNO has opted to apply the European public procurement procedure. This is because based on the limited competition in the field to which the Contract pertains, a restricted number of Tenders are expected whereupon the public procedure is likely to be more cost-efficient.

2.1 Schedule

The proposed schedule for the Tender Procedure is as follows:

No.	Action	Deadline
1.	Publication of Call for Tenders (on www.tenderned.nl)	23-01-2023
2.	Final opportunity for interested parties to submit questions	17-02-2023, 12:30 PM CET
3.	Publication of (final) Memorandum of Information	24-02-2023
4.	Final date (and time) for submission of Tenders	07-03-2023, 12:30 PM CET
5.	Announcement of Intention to Award	21-03-2023
6.	Final date for submission of evidential documents by intended Contractor	31-03-2023
7.	Final date for lodging an objection	11-04-2023
8.	Confirmation of Contract Award	Close after 11-04-2023

Dates are indicative, with the exclusion of the date to file questions and remarks for the Memorandum of Information and the date to submit the Tender. TNO reserves the right to amend the schedule but will of course observe all legislative requirements. Tenderers will be informed about any amendment to the schedule.

2.2 Tender conditions

2.2.1 Acceptance

The submission of a tender is confirmation that the Tenderer accepts all applicable conditions in the Tender Documents.

2.2.2 Formats

The Tenderer must use the prescribed templates and formats provided in the Appendices to the Tender Instructions. It is expressly forbidden to make any alteration to these templates without the prior consent of TNO.

2.2.3 Self-declaration

The Tenderer must complete and submit a Self-declaration (Appendix **A01** and, if applicable, Appendix **A02** and/or **B01**) according to the following instructions.

The Tenderer must use Adobe Reader to open and complete Appendix **A01**, **A02** and **B01** (the European Single Procurement Document; ESPD). Opening Appendix **A01**, **A02** and **B01** in any other program may result in the loss of information that has been pre-entered by TNO. The submission of a Self-declaration in any form other than that included with the original tender will exclude the entire tender from further consideration. The Tenderer bears sole responsibility for opening Appendix **A01**, **A02** and **B01** and for submitting the Self-declaration in the prescribed manner.

2.2.4 Order of precedence

Where any discrepancies between the contents of the various tender documents exists, the following order of precedence applies (in descending order of importance).

- Memoranda of Information, most recent first
- Tender Instructions and Appendices
- Call for Tenders.

2.2.5 Contact person and communication

All communication with respect to the Tender Procedure will only take place through TenderNed and in a manner other than prescribed in this Tender Instructions. If legal contact with TNO is required / necessary, communication only takes place at TNO's contact point below, which communication must always be done in writing via the e-mail address mentioned below.

Name : Raymond Peddemors
Position : Senior buyer
Department : Procurement
Correspondence : P.O. Box 96800, 2509 JE, The Hague, the Netherlands
Email : **via TenderNed; the questions and answers module of the related Tender**

Tenderers cannot derive rights from verbal statements, promises and suggestions from TNO employees or agents, made in connection with the Tender Procedure and / or tender documents. Tenderers can only rely on written information provided by or on behalf of TNO.

Failure to comply with the above conditions, or any attempt to influence the judgement or decisions of any person involved in the Tender procedure, will result in immediate disqualification.

2.2.6 Language

Tenders must be submitted in the English language. Tenders submitted in other languages than the English language will be excluded from further participation in this Tender procedure. Evidential documents which cannot be submitted in the English language, can be submitted in the original language but the Tenderer should be able to provide a (sworn) translation on request.

2.2.7 Multiple tenders

The submission of multiple Tenders is not permitted. Each interested party may submit only one tender regardless of the capacity in which it does so (independent Tenderer, lead contractor, subcontractor or member of a combination). A group of companies, as defined by Article 2:24b of the Dutch Civil Code, may submit only one tender unless it is possible to show that there is no dependent relationship between the companies, i.e. no company is able to influence the decisions or operations of another. It is only permissible for two or more companies within the same group to submit competing tenders if they can demonstrate their independence and confidentiality of information (the 'Chinese wall' principle) to the satisfaction of TNO by any means they consider appropriate. Companies forming part of the same group can submit a single tender which specifies their respective roles (lead contractor and subcontractor or acting as a Combination).

2.2.8 Combination

A Combination is defined as an alliance of companies which submits a tender as a single party. A Combination must comply with the following criteria:

Coordinator

Where a Tender is submitted by a Combination, a Self-declaration (Appendix **A01**) must be completed by its coordinator, who must provide the following required information *with regard to the Combination itself*, in addition to the standard information required by the Self-declaration.

- (i) In Part IIA, under the heading 'Manner of Participation', tick the 'Yes' box to indicate that the Tender is being submitted on behalf of a Combination.
- (ii) In Part IIA, under the heading 'Manner of Participation' at 'If so', subsection a), the coordinator should state which of the eligibility requirements he fulfils (if applicable) and the specific tasks for which he is responsible.
- (iii) In Part IIA, under the heading 'Manner of Participation' at 'If so', subsection b), enter the official name(s) and legal structure of all other members of the Combination.
- (iv) If the Combination has been formalized and has a registered trading name, this should be entered in Part IIA under 'Manner of Participation' at 'If so', subsection c).

Other members

Each of the other Combination members must complete and submit a separate ESPD (Appendix **A01**) to include the following information regarding the Combination itself (in addition to all other required information):

- i) In Part IIA under 'Manner of Participation', tick the 'Yes' box to indicate that the Combination member is taking part in the Tender Procedure alongside other partners.
- ii) In Part IIA, under the heading Manner of Participation, subsection a), the Combination member should state which of the eligibility requirements he fulfils (if applicable) and the specific tasks for which he is responsible.
- iii) In Part IIA, under the heading Manner of Participation, subsection b), enter the official name(s) and legal structure of all other members of the Combination.
- iv) If the Combination has been formalized and has an official trading name, this should be entered in Part IIA under Manner of Participation, subsection c).

By submitting the tender, all members of the Combination accept joint and individual responsibility and liability for the fulfilment of all obligations and responsibilities of the Contract itself should this be awarded to the Combination.

All Self-Declarations must be duly signed by an authorized company officer.

2.2.9 Subcontractor

A partnership comprising a lead contractor and a subcontractor can submit a single Tender. The lead contractor is at all times responsible and liable in law for the proper performance of the Contract activities, including those delegated to the subcontractor.

A lead contractor can submit a Tender with a subcontractor in one of the following two manners. The signatory's authority must be established by enclosing a certified extract from the Chamber of Commerce Trade Register with the subcontractor's Self-declaration form (Appendix B01).

- Use of subcontractor's credentials to fulfil Eligibility Requirements
If the Tenderer is reliant on the financial, economic, technical and/or professional capacity of a Subcontractor to fulfil the Eligibility Requirements, that subcontractor is also regarded as a Third Party. In such instances, the Tenderer must follow the instructions given in Para. 2.2.10 concerning reliance on the resources of one or more Third Parties.
- Subcontractor's contribution to fulfilment of Contract
Where the Tenderer meets all Eligibility Requirements unaided but nevertheless wishes to deploy a subcontractor for the fulfilment of the Contract or parts of the Contract, the Tenderer must list all subcontractors to be involved in the fulfilment of the Contract in part IID of the Self-Declaration.

Instructions for the Tenderer when completing the Self-declaration (Appendix A01)

The Tenderer should state whether he does or does not intend to involve one or more subcontractors in the performance of the Contract by completing Part II D of the Self-declaration (Appendix A01).

- If there is no intention to involve a subcontractor:
The Tenderer should tick the box marked 'No' in Part II D of the Self-declaration (Appendix A01).
- If the Tenderer does intend to involve one or more subcontractors:
The Tenderer should tick the box marked 'Yes' Part II D of the Self-declaration (Appendix A01), and enter the names of those subcontractors in the space provided beneath 'If so'.

Instructions for submission of evidential documents

At the request of TNO and within the period specified in Para. 7.1., the Tenderer who is identified as the lead Contractor (subject to confirmation by TNO) is required to submit the corresponding information that he submitted about himself (in Parts II A, II B and III of the Self-declaration) for all subcontractors listed in Part II D of the Self-declaration (Appendix A01). The Tenderer must provide this information by submitting a Self-declaration form (Appendix B01) in which the relevant sections have been completed by each subcontractor.

The subcontractor's Self-declaration (Appendix B01) must be duly signed by an authorized company officer. The Tenderer must establish the signatory's authority by enclosing a certified extract from the Chamber of Commerce Trade Register with the subcontractor's Self-declaration form (Appendix B01).

➤ Required action between notification of Award and commencement of Contract

Where the successful Tenderer intends to involve one or more subcontractors in the performance of the Contract, TNO must be informed, in writing, of the name or names of the subcontractors who are to perform the contract, of the name of the duly appointed legal representative of each subcontractor, as well as the name, telephone number and email address of a contract person for each subcontractor. This information is to be provided no later than seven days prior to the date

of commencement of the Contract that was agreed by TNO and the Contractor or subcontractor. No subcontractor may be involved or changed without TNO's prior written consent.

➤ Required action during performance of Contract

Any subcontractors engaged by the Contractor during the performance of the Contract must be approved by TNO. Such approval must be confirmed in writing before the subcontractor is permitted to begin work on the contract (or part thereof) assigned to him by the Tenderer. This provision applies where the Contractor was not required to name specific subcontractors during the Tender Procedure and where new subcontractors are recruited after the Contract work has commenced. If there are any changes to the information relating to a subcontractor, the Contractor or subcontractor must inform TNO immediately and in writing.

In order to approve a subcontractor, TNO must ascertain that none of the Grounds for Exclusion listed in the original Tender Procedure apply. TNO may require the Contractor or subcontractor to submit evidential documents to establish that this is the case. The documents to be requested by TNO are limited to those listed in Section 5. 1 of the Tender Instructions.

If TNO determines that one or more Grounds for Exclusion does indeed apply to the subcontractor, approval will not be granted. TNO will allow the Contractor to propose another subcontractor, whereby the same approval procedure will be followed. TNO will hold the Contractor and subcontractor(s) responsible for the correct and timely execution of the Contract, regardless of any delay due to a subcontractor having been excluded from participation.

2.2.10 (no) Reliance on Third Party resources

The Tenderer may call upon the financial, economic, technical and/or professional capacity of one or more Third Parties. Where the Third Party is to provide financial resources, both the Tenderer and that Third Party are jointly responsible and liable in law for the proper execution of the Contract (if awarded).

Where the Tenderer calls upon the technical or professional capabilities of one of more Third Parties, those Third Parties must take an active part in the performance of the Contract activities (assuming that the Contract is indeed awarded to the Tenderer).

No reliance on Third Party resources

A Tenderer who does *not* intend to make any use of the financial, technical or professional capabilities of any Third Party should tick the box marked 'No' in Part II C of the Self-declaration (Appendix **A01**).

Reliance on Third Party capacity

A) Instructions for completion of Tender

If the Tenderer *does* intend to call upon the financial, economic, technical or professional capabilities of one or more Third parties, he should fill in Part II C of the Self-declaration (Appendix **A01**) as follows:

1. tick 'Yes' in the appropriate section
2. indicate *which* of the Eligibility Requirements will be met further to the involvement of the Third Party
3. state *how* the Third Party's involvement will fulfil the relevant Eligibility Requirement(s).

The Tenderer who intends to call upon the financial, economic, technical and/or professional capacity of one or more Third Parties should also provide:

4. a separate Self-declaration form (Appendix **A02**) for each such Third Party, in which parts II A, II B and III have been completed. The forms must be signed by the duly authorized legal representative of the Third Party concerned, and this person's authority to sign must be confirmed by means of a certified extract from the Chamber of Commerce Trade Register. Note that the extract does not have to be submitted at the same time as the Tender itself; TNO will request further information in accordance with the following provisions.

Addition requirement where Tender relies on the technical or professional capabilities of one or more Third Parties

5. Where the Tenderer intends to call upon the technical or professional capabilities of one of more Third Parties, a list of reference projects must be provided for each Third Party (in addition to that relating to the Tenderer). The list of Third Party reference projects should be compiled using the prescribed template provided as Appendix **A03**.

B) Instructions for Provisional Contractors who intend to call up the resources of one or more Third Parties

If the Tenderer selected by TNO and thus identified as the Provisional Contractor (subject to confirmation) intends to call upon the financial, economic, technical or professional capacity of one or more Third Parties, that Tenderer must submit the following documents on request, within the period stipulated in Para. 7.1 of the Tender Instructions:

1. A declaration produced and duly signed by each Third Party confirming that the Tenderer will have access to the resources stated. Where the Tenderer intends to call upon the financial and economic capacity of the Third Party, the declaration must be made using the template provided as Appendix **B02**. In the case of technical and/or professional capacity, the statement should be made using the template provided as Appendix **B03**.
2. A certified extract from the Chamber of Commerce Trade Register pertaining to each Third Party for whom a Self-declaration (Appendix **A02**) is submitted. The extract should confirm that the legal validity of the signature on the Self-declaration (i.e. the signatory is an authorized officer of the company concerned).
3. All evidential documents listed in Para. 5.1 for each of the Third Parties named in the Tender, confirming that none of the Grounds for Exclusion apply.

Supplementary provision for a proposed Contractor intending to call upon the financial and economic capacity of one or more Third Parties

4. If the Tenderer selected by TNO and thus identified as the Provisional Contractor intends to call upon the financial and economic capacity of one or more Third Parties, that Tenderer must, at the request of TNO and within the period stipulated in Para. 7.1 of the Tender Instructions, submit all documents listed in Para B (concerning '*Instructions for provisional contractors*') together with the evidential documents which establish that each of the Third Parties meets the Eligibility Requirements in respect of financial and economic status. (This replaces the requirement for the Tenderer to submit evidence of its own financial and economic status.)

2.2.11 Alternative Tenders

The submission of alternative Tenders is not permitted. Alternative Tenders will be disregarded.

2.2.12 '...or equivalent'

Where the Tender documents, including Appendices, refer to any specific brand name, patent, type, model, manufacturing process, etc., the words '*... or equivalent*' should be understood to follow.

2.2.13 Reserved rights

1. TNO may, at its own discretion and without having to state reasons, decide not to award the Contract to any of the parties from whom Tenders have been received. TNO reserves the right to suspend or cancel the Tender Procedure entirely or partially. Tenderers are not entitled to compensation for any form of loss or damage directly or indirectly incurred as a result.
2. TNO reserves the right to subject all information provided by Tenderers to further scrutiny for the purposes of verification. Referees may be contacted without prior notice to the Tenderer or Third Party.

Providing false or incomplete information will result in exclusion from the Tender Procedure. Any agreements made prior to the discovery of the false or incomplete information will be revoked and contracts will be annulled. No compensation will be paid. TNO expressly disclaims liability for loss or damage howsoever caused.

2.2.14 Confidentiality

The Tenderer undertakes to treat all information which may affect the commercial interests or scientific integrity of TNO in the strictest confidence. Information is provided on a 'need to know' basis and must not be disclosed to any employee or agent of the Tenderer's organization or those of a Third Party (including consultants and subcontractors) unless such disclosure is essential to the effective preparation of the Tender or, where applicable, the proper performance of the Contract. TNO acknowledges the confidentiality of all information provided in support of the Tender and undertakes not to disclose such information to unauthorized parties. However, Tenderers are advised that TNO is under a legal obligation to explain and justify the Award Decision, which may entail the disclosure of information pertaining to the Tenders received, both successful and unsuccessful.

2.2.15 Distortion of competition

Attempts to distort fair competition, such as collusion or cartel-forming, are grounds for disqualification. Where TNO has plausible indicators of any such attempt, the Tenderer will first be given an opportunity to prove otherwise. If, in the sole opinion of TNO, the Tenderer is not able to provide a satisfactory defence, he will be excluded from the remainder of the Tender Procedure.

2.2.16 Withdrawal of Tender

Submitted tenders cannot be withdrawn after the final date to submit a Tender (see paragraph 2.1). The Tender will remain in place throughout its period of validity.

2.2.17 Period of validity

The Tender represents a formal offer which must remain valid for at least three (3) months from the final date to submit Tenders. This period of validity is automatically extended with the Tenderer who emerges as the Provisional Contractor until the point at which the final Contract is signed.

If an objection to the Award Decision is placed before the judicial authorities in accordance with paragraph 6.2.1, the period of validity will (if necessary) be further extended by a period of thirty calendar days following the day on which the court returns its judgment.

2.2.18 Terms and Conditions of Contract

The Award of the Contract is to be effected by means of:

- A purchase order; and
- TNO's General Purchasing Conditions, February 2022, as included as Appendix C03, except where the Tender Documents include alternative provisions, in which case the Tender Documents take precedence.

As provided by Para. 2.3 of the Tender Instructions, the Tenderer may propose amendments to the current formulation of the General Purchasing Conditions. TNO will confirm the amendments to be made, which will be listed in the final Memorandum of Information. Acceptance of the final version of the amended General Purchasing Conditions is to be regarded as a minimum requirement. Failure to meet this requirement in full will result in exclusion from the remainder of the Tender Procedure.

The submission of a Tender indicates the Tenderer's full acceptance of all terms and conditions applicable at the time of submission.

2.2.19 Suppliers' Terms and Conditions; Provisional Tenders

The Tenderer's general terms and conditions, under any name and/ or any form whatsoever, do not apply. Imposing its own general terms and conditions in and/ or on the Tender, shall render the Tender invalid and leads to exclusion of the Tenderer.

Only TNO's General Purchasing Conditions apply to the Contract (Appendix C03).

2.2.20 Legally valid signature

The Tender and all documents included must be duly signed in ink by an authorized representative of the Tenderer organization. The hard copy of each document is then scanned and uploaded to the TenderNed site. The signatory's authorization to sign must be established by means of a certified extract from the Chamber of Commerce Trade Register. If the signatory is not listed as an authorized representative of the Tenderer organization in the Trade Register, a mandate signed by a registered company officer must be provided. The extract and mandate must be submitted at the first request of TNO in accordance with the instructions and deadline stated in Para. 7.1 of the Tender Instructions.

The signature under the Tender also applies as a signature under the Self-declaration, Article 2.2.3, the form "ESPD".

If a Tender and/ or one or more documents are legally and duly signed, the Tender is invalid and the Tenderer will be excluded, except when this is disproportionate and not contrary to the fundamental principles of procurement law.

2.2.21 Reimbursement of Tender costs

All costs incurred further to the production and submission of the Tender are to be borne by the Tenderer. TNO shall not provide any form of reimbursement.

2.2.22 Statement of prices and costs

Prices and costs must be stated in euros (EUR), excluding Value Added Tax. The prices and costs are to remain applicable throughout the Contract term except where the Contract terms make alternative provisions. TNO wishes to make clear that price negotiations do not form part of the Tender Procedure. Tenderer is requested to present a cost breakdown.

2.2.23 Acceptance Testing

A full acceptance test on-site at TNO, RCSG Rijswijk, must be performed by the tenderer in cooperation with TNO. The SAT contains the following checkpoints:

- The modules will be checked for damages;
- The proper functioning of the modules on key aspects as defined during the FAT will be checked, such as;
 - Mechanical functions,

- Electrical, - and switching functions,
- Controls and data storage,
- Safety functions.
- The FAT includes testing all functions and the requirements as listed in the schedule of requirements section 8, and all other functions offered by the tenderer, the SAT will be used to confirm this after delivery as well as check that any shortcomings identified in the FAT are solved;
- The presence and quality of the required documentation will be checked in the FAT.

The details of the FAT and SAT shall be defined and agreed between TNO and the final Tenderer. As part of the tender bid, we ask the Tenderer to submit a proposal for the FAT and SAT-plan (Requirement 8.1.37).

Following approved user acceptance test on-site, the delivered ASM and DSM modules shall be at the unrestricted disposal of TNO for six months. If the system works according to TNO's functional and technical specifications, without faults and/or malfunctions, the test period shall be concluded by TNO. If the ASM and DSM modules are not operating in this period according to TNO's functional and technical specifications, the faults and/or malfunctions will be remedied by the Tenderer, and another test period, of one month, must successfully be completed and approved by TNO, up to a maximum of three test periods of one month each.

2.2.24 Failure in FAT or SAT

In the event that the deliverables fail to meet the user Acceptance Criteria for the FAT or SAT, the Supplier must set out such failures in a written statement, to be signed by both parties. The supplier must then provide TNO with a corrective action plan for such failures. For the FAT this will be checked at the SAT. In both cases this plan should be provided within twenty (20) calendar days, or such other period if mutually agreed upon by the parties, from the date of signing of such statement. The supplier shall remedy such failures at no additional charge within the timeframe laid down in the corrective action plan.

2.2.25 Publicity

The Tenderer and any partners and/or subcontractors of the Tenderer must not make any public statement or comment about the Tender Procedure, except with the prior written permission of TNO.

2.2.26 Intellectual property rights

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

2.2.27 Use of TNO logo

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

2.2.28 Defects in the Tender and explanations by the Tenderer

In case a Tender has a defect which makes the Tender invalid, the Tenderer will be excluded, except when this is disproportionate and repair of the defect is in compliance with the fundamental principles of procurement law. TNO has the right, but no legal obligation, to offer a Tenderer the opportunity to repair the defect. For instance this could be done by submitting a missing document. Repairing a defect in the Tender is only possible and can only be allowed when this is in accordance with the fundamental principles of procurement law, in particular the principle of equal treatment. Any repair must be made within 48 hours after a written request by TNO. In case a defect is not sufficiently and/ or timely repaired, the Tender will be declared invalid and the Tenderer will be excluded. Tenderers must draft their Tender as clear and concrete as possible to avoid unclarity. TNO has the right to ask Tenderers for a clarification of their Tender. Tenderers must be aware that if a clarification is asked by TNO, the clarification must be provided within 48 hours after the written request. A clarification may not change the (contents of the) Tender.

2.3 Further information (questions)

The Tender documents, including the Tender Instructions and Appendices, have been drafted with the greatest possible care. Interested parties are entitled to submit questions, remarks and requests for clarification at any time before the deadlines given in the schedule in Para. 2.1. The questions may relate to the contents of the tender documents or to the Tender Procedure itself. Clarification may be sought where there are any apparent ambiguities or discrepancies between documents. Further information should be requested within the stated period and in the manner described in this paragraph. A Tenderer who fails to request information on time and in the prescribed manner will forfeit his right to object to any identified defects at a later date, for instance after the Award Decision has been provided.

During the period between the Call for Tenders and the information deadline, Tenderers may also submit grounded questions, suggestions for amendments to the text of the Tender documents, including TNO's General Terms and Conditions of Procurement (Appendix C03). Suggestions should be restricted to textual improvements, editorial corrections and clarifications; they may not affect the essence of the Contract or the applicable Terms and Conditions. TNO reserves the right to act upon or reject such suggestions at its sole discretion.

Questions, comments and requests for supplementary information must be submitted in English. They must only be submitted in writing, in the form of an email, and must use the 'editable' MS Excel template provided in Appendix C01. The specific aspect of the documents or procedure to which the query refers should be clearly indicated using the drop-down menu in Excel. The file must then be submitted by email to the TNO contact person named in Para. 2.2.5.

If two or more Memoranda of Information are issued, Tenderers may only submit questions, remarks, questions and/ requests for clarification for the second of following Memorandum of Information that concern the immediately preceding Memorandum of Information.

The TNO contact person will compile one or Memoranda of Information which provide the answers to the questions submitted. The source of the questions will not be identified by name. The deadline for submitting questions is given in Para. 2.1. The Memoranda of Information will be published at www.tenderned.nl in accordance with the schedule in Para 2.1. All questions and the answers provided are to be regarded as an integral component of the Tender Instructions. In principle, the Tender Instructions document becomes definitive with the publication of the final Memorandum of Information. TNO advises interested parties to delay submitting a Tender until the final Memorandum of Information has been published since it may include information which affects the content of the Tender.

Responsibility for reading and acting upon the Memoranda of Information in a timely manner rests with the Tenderer. If the production of the final Tender is jeopardized by technical problems affecting the TenderNed site, the Tenderer should contact the TNO contact person named in Para. 2.2.5, and TenderNed, without delay. If the TenderNed site is indeed 'down', TNO will implement an alternative course of action (subject to the provisions of the Procurement Act.)

TNO advises Tenderers to delay submitting a Tender until the final Memorandum of Information has been published. This may include information and details of changes to the Tender Instructions that affect the process of drawing up a Tender.

2.4 Disputes and applicable jurisdiction

All aspects of the Tender Procedure are subject to Dutch law. Any dispute concerning the Tender Procedure requiring legal adjudication must in the first instance be placed before the Court in Interlocutory Proceedings in the District of The Hague, Prins Clauslaan 60.

Tenderers who object to (any part of) the Tender Procedure, (any part of) the information provided, or any other aspect directly or indirectly relating to the Tender Procedure and likely to affect its outcome, must bring their objections to the attention of the TNO contact person named in Para. 2.2.5 at the earliest possible opportunity. Before bringing proceeding to the District Court, the concerning Tenderer is required to request the TNO contact for a enumeration of TNO's prevented days from attending.

The period in which a formal objection can be lodged against the Award Decision and/or the Tender Procedure is twenty calendar days from the date on which the Award Decision is issued. The objection must be made in writing and the writ must be served at the registered statutory address of TNO within the twenty-calendar day period. Where formal proceedings have not been instigated within the designated period, lapse Tenderers forfeit their right to do so later ('rechtsverwerking').

Where a court order challenging the Award Decision and/or the Tender Procedure is sought, in a timely and legally valid manner, the Tenderer to whom the Contract has been provisionally awarded is expected to intervene in the Proceedings. If the Tenderer fails to do so, they will forfeit their right to a judicial procedure or to third-party proceedings if the judgment in the first instance requires TNO to amend or withdraw the Award Decision. It is in the interests of all parties to create clarity at the earliest possible opportunity and this requires all arguments to be presented openly and without delay.

2.5 Submission of the Tender

2.5.1 Digital submission

The Tender comprises all forms in Appendices **A01 to A06** which must be completed in full and duly signed by a legally authorized representative of the tendering organization. The formats given in the Appendices must be used. For the signature requirements, see Para. 2.2.20.

For the current tender procedure, TNO has opted to use the online TenderNed system. TenderNed is the Dutch government's online tendering system. All Dutch authorities are obliged to announce their national and European tenders on TenderNed's announcement platform, so businesses can have insight into all public publications from a single webpage.

If you would like to bid in TenderNed you first have to register your company. Please keep in mind that the TenderNed application is only available in Dutch. The following information on registering your company and bidding is available in English:

- [Registering a foreign business](#)
- [Logging in as a foreign entrepreneur](#)
- [Request to participate in a restricted procedure](#)
- [Submitting a bid directly in an open procedure](#)
- [Training and consultancy](#)

Other manuals and instructions are only available in Dutch. You can also contact TenderNed's Service Desk at +31 70 379 88 99 or [email](#). Their opening hours are: 08:30-17:00 CET.

The completed Tender documents must be uploaded to the TenderNed secure document safe no later than **12:30 PM CET on 07-03-2023**.

Tenders which are submitted beyond the published deadline or which are not uploaded to TenderNed's secure document safe in accordance with the instructions given in this document will be excluded from the remainder of the Tender Procedure. Responsibility for the timely and correct submission of documents rests with the Tenderer at all times.

Tenderers are urged to read the instructions on the TenderNed site, particularly those relating to the uploading of documents to the secure document safe. Note that the upload must be confirmed using the 'registration wizard' which has two-factor authentication requiring users to enter a code which has been sent to them as a text (SMS) message.

Tenderers are advised to allow ample time for the uploading of documents. If a technical problem occurs which places the timely submission of the Tender at risk, the Tenderer should immediately report this situation to TenderNed AND to the TNO contact person named in Para. 2.2.5. If TenderNed does experience a technical problem that makes it impossible for tenders to be submitted shortly before the deadline and TNO is unaware of any Tenders that, despite the technical problem, have been successfully uploaded to TenderNed's secure document safe, then TNO will extend the deadline for submission of Tenders, subject to the restrictions imposed by Article 2.109 of the Procurement Act. TNO advises Tenderers to take note of the contents of Article 2.109a, further to which they should be prepared to submit an encrypted code identifying their Tender should there be any technical problem preventing the full Tender being uploaded to TenderNed.

2.5.2 Structure and presentation

The following instructions apply to the structure and presentation of the Tender submission. The Tender must consist of the following documents:

Part A comprises the following documents (files):

Appendix A01 Self-declaration by Tenderer (European Single Procurement Document; ESPD)

Appendix A02 Self-declaration by Third Parties on whose resources or abilities the Tenderer Relies (European Single Procurement Document;)

Appendix A03 Prescribed format for Reference projects

Appendix A04 Schedule of Prices and Costs

Appendix A05 Conformity list Programme of Requirements

Appendix A06 Notification of preferences/answers to questions

All forms must be completed in full and then printed out. The paper hard copy is to be signed in ink by a legally authorized representative of the Tenderer organization and then scanned to create a digital (PDF) version.

The various PDF files (Appendices **A01** to **A06**) are to be placed in a single folder which must then be compressed ('zipped'). This folder should be named **xxxx_part A**, where **xxxx** is replaced by (part of) the name of the Tenderer organization. Upload this compressed folder to TenderNed's secure document safe.

If a Tender is incomplete, the Tender is invalid and the Tenderer will be excluded, except when this is disproportionate and not contrary to the fundamental principles of procurement law.

3 Evaluation of Tenders and Tenderers

3.1 Evaluation team

A multidisciplinary team will be assembled to undertake the qualitative evaluation of the Tenders. Its members will include experts in the subject matter and processes involved. The team members evaluate the Tenders on the basis of quality alone; they are not informed of the financial aspects.

Each member of the evaluation team assesses the Tender against the qualitative (sub sub) award criteria, doing so independently and without reference to the other members of the team. A meeting is then held at which the individual evaluations are compared and discussed. The overall score given for each of the (sub sub) award criteria is the average of the individual scores.

3.2 Evaluation procedure

The evaluation procedure consists of the phases, as described in Chapters 2 to 8.

Chapter 2 : Evaluation against Tender conditions

Chapter 4 : Evaluation with regard to timely submission, form, presentation and completeness

Chapter 5 : Evaluation against Eligibility Requirements and Grounds for Exclusion. These are mandatory provisions, whereby non-compliance will result in immediate and irrevocable exclusion from the remainder of the Tender Procedure.

Chapter 6 : Evaluation against the Award Criteria. This is based on a numerical score for each material aspect.

Chapter 7 : Evaluation of evidential documents which the Provisional Contractor is requested to submit to TNO.

Chapter 8 : TNO's evaluation against the Minimum Requirements (with regard to Contract performance) and the Programme of Requirements (PoR).

Based on the overall evaluation, TNO will rank the Tenders in order. The Tender in first place is the '*Economically Most Advantageous Tender based on the Price-quality Ratio*' ('*Best PQR*').

At any time during the evaluation procedure, TNO may contact a Tenderer to request clarification where necessary. Tenderers are expected to provide a response within 48 hours (paragraph 2.2.29).

3.3 Provisional award decision

Once the tenders have been assessed and TNO has upheld the Contract Award recommendation, the intention to award notice shall be issued to notify both the successful and the rejected tenderers of this decision. The award shall be specifically subject to:

- the results of the verification of the supporting documents for Grounds for Exclusion and suitability requirements.
- approval by the Executive Board of TNO.

If, for some reason the need arises, TNO reserves the right to decide against awarding the contract (provisionally or otherwise, Paragraph 2.13). The issue of the intention to award notice by the contracting authority shall not constitute the acceptance of the tenderer's bid, as defined in article 6:217, Section 1 of the Netherlands Civil Code.

4 Evaluation of timely submission, form, presentation and completeness

4.1 Timely submission

The Tender must be submitted before the final date (and time) for submission of Tenders (paragraph 2.1). Any Tender that is received by TNO after this deadline will be deemed invalid and excluded from further consideration.

4.2 Form, presentation and completeness

Tenders will be assessed in terms of completeness and compliance with the published instructions. The omission of required information will result in disqualification.

Tenders which are incomplete and/or fail to comply with the presentation instructions will be declared invalid and excluded from further consideration.

5 Evaluation against Grounds for Exclusion and Eligibility Requirements

5.1 Grounds for Exclusion

The Tenderer will be evaluated against the Grounds for Exclusion. The Self-Declaration (European Single Procurement Document; Appendix A01, A02 and B03) includes a section which requires the Tenderer to confirm that none of the Grounds for Exclusion applies. If one or more of the Grounds for Exclusion does apply, the Tenderer will be excluded from the Tender Procedure. The Tenderer on who one or more of Ground of Exclusion applies, has the right to describe in the Self-Declaration if it has taken any self-cleaning measures which prove the Tenderer's reliability and/ or if exclusion is disproportionate (article 2.87a and 2.88 Dutch Procurement Act).

Where any of the Grounds for Exclusion applies to any one member of a Combination, the entire Combination is excluded from the Tender Procedure. The Combination, or one or more of its members, on who one or more of Ground of Exclusion applies, has the right to describe in the Self-Declaration if it has taken any self-cleaning measures which prove the Combination's reliability and/ or if exclusion is disproportionate (article 2.87a and 2.88 Dutch Procurement Act).

Where the Tenderer calls upon the resources or abilities of one or more Third Parties, as described in Para. 2.2.10, and one or more Grounds for Exclusion applies to any of those Third Parties, TNO will disallow the involvement of that Third Party. The Tenderer will then be given an opportunity to find another Third Party able to provide the necessary resources. The Tenderer must do so within seven (7) calendar days after TNO's message. If the Tenderer is unable to do so within the allotted period, or if the replacement Third Party is also subject to any other Grounds for Exclusion, the Tenderer will be excluded from the remainder of the Tender Procedure. Tenderers must be aware that the replacing Third Party must comply to the same Eligibility Requirements as the original Third Party.

In the first instance, a duly completed and signed Self-declaration form (Appendix **A01**) is enough to establish that none of the Grounds for Exclusion applies to the Tenderer. In the case of a Third Party, the Self-declaration form in Appendix **A02** is required. If the Tenderer is identified as the Provisional Contractor, it must provide evidence concerning the Self-Declaration. At the request of TNO, that Tenderer must provide the following evidential documents within the period stated Para. 7.1. In the case of a Combination, each individual member of that combination must submit these documents within the period stated Para. 7.1. Where the Tenderer calls upon the resources or abilities of one or more Third Parties, the Tenderer must submit these documents for each Third Party within the period stated Para. 7.1.

The evidential documents in question are:

- A certified extract from the Chamber of Commerce Trade Register pertaining to the Tenderer, or in the case of a Combination, to each member individually. The extract(s) must be dated no more than six months prior to the date of submission.
- A Certificate of Conduct (GVA) by the Tenderer or - in the case of a Combination - of any combinant and/or - if the Tenderer appeals to one or more Third Parties - every Third Party to which the Tenderer appeals. The Certificate of Conduct (GVA) is dated no more than two years prior to the date of submission of the Tender. To apply for a procurement statement, the Tenderer, combinant and/or Third Party must consult the Justis website (www.justis.nl) and follow the instructions contained therein regarding the application for a Certificate of Good Conduct;
- A declaration issued by the Tax Administration of the Tenderer or – in the case of a combination – of any combinant and/or – if the Tenderer appeals to one or more Third Parties – every Third Party to which the Tenderer appeals. The declaration must at the time of submission of the Subscription not exceed six months to prove that the Tenderer, combinant and/or Third Party has fulfilled his obligations under applicable legal provisions applicable to him relating to the payment of national insurance premiums or taxes.

Tenderers are reminded that it can take several weeks to obtain some types of evidential document. Especially a Certificate of Conduct (GVA), for which a maximum term of sixteen (16) weeks applies. It is therefore advisable to apply for them at the earliest possible moment. It will then be possible to produce the documents when required. It should also be noted that Tenderers are responsible for the timely submission of evidential documents, including documents pertaining to any Third Parties on whose resources they intend to rely. TNO therefore advises Tenderers to approach those Third Parties as soon as possible to make the necessary arrangements. Third Parties should be made aware of the time needed to obtain some documents.

A Tenderer who fails to submit and/or fails to timely submit and/or fails to fully submit the requested evidential documents (pertaining to himself or to any Third Parties) on time will be excluded from the Tender Procedure, except when exclusion is disproportionate. TNO may then invite the party who came second in the evaluation process to submit evidential documents.

5.2 Evaluation of Eligibility Requirements

A Tenderer must be able to demonstrate the level of expertise and skill required to perform the Contract activities. These are termed the 'Eligibility Requirements'. The Tenderer is evaluated against the Eligibility Requirements as formulated for the Tender. If the Tenderer intends to call upon the professional expertise of one or more Third Parties, as described in Para. 2.2.10, TNO will assess whether each of those Third Parties fulfils the Eligibility Requirements.

The Eligibility Requirements apply to several aspects: financial and economic capacity, technical and professional ability, and professional qualifications. The Tenderer must meet all Eligibility Requirements in order to be considered for the Contract, either independently or by relying on the capacity of one or more Third Parties.

5.2.1 Financial and economic capacity

5.2.1.1 Insurance

The Tenderer must hold full liability insurance with a cover of at least € 1.000.000 per event giving rise to damage or series of related events, or must be willing to meet this requirement if identified as the Provisional Contractor. The insurance cover must be in place for the entire term of the Contract.

In the first instance, a duly completed and signed Self-declaration form (Appendix **A01**) is sufficient to establish that this requirement has or will be met. If, for the purposes of the present Eligibility Requirement, the Tenderer intends to rely on the financial and economic capacity of a Third Party, a separate Self-declaration must be submitted using the template provided as Appendix **A02**.

At the request of TNO, the Tenderer identified as the Provisional Contractor must submit evidence, within the period specified, of adequate insurance cover in the form of the policy document or a certificate of insurance issued by a recognized insurance company, showing that the Tenderer is insured as required in the Tender documents. Where the policy document is in the name of a holding company, group or concern, the Tenderer must present a copy together with evidence that cover extends to the Tenderer organization.

Where the Tenderer is not (yet) in the possession of the insurance policy or a certificate of insurance issued by an insurance company, within the period specified, he must complete, sign and return a Declaration of Intent to do so (Appendix **B04**). This is a statement to the effect that the Tenderer will obtain the required insurance cover and present the necessary evidential documents no later than **seven calendar days** before the signing of the Contract. It should be noted that this is a suspensory condition; failure to provide a copy of the policy or a certificate of insurance issued by the insurance company will result in the Contract offer being withdrawn and the Tender being deemed invalid. TNO will not issue confirmation of the Contract until the deadline for legal objections has passed or, if an objection is indeed lodged, it is overruled by the court. The Contract itself cannot be signed until TNO is in possession of evidence that the Tenderer holds the required insurance cover. In the absence of such evidence, TNO reserves the right to withdraw the Contract offer, whereupon the runner-up in the Tender evaluation process will assume first place and will be identified as the Provisional Contractor.

The prescribed document format for the insurance policy or certificate of insurance is enclosed as Appendix **B04**.

5.2.2 Technical and professional competence

The evaluation of technical and professional competence is an indicator of whether the Tenderer can be expected to perform the Contract activities to the required standard.

5.2.2.1 Reference projects

To support the evaluation of technical and professional competence, the Tenderer is required to submit two (2) reference projects using the template provided in Appendix **A03**. The reference projects should demonstrate that the Tenderer has adequate experience and possesses the skills which make up the core competencies listed below. For each core competency, the Tenderer should refer to *one* of the reference projects in **A03**. It is not necessary to list a separate reference project for each core competency; one project may be used to demonstrate several competencies.

To demonstrate adequate experience in the core competencies listed below, the Tenderer should submit details of reference projects as part of the tender. This is accomplished using Appendix **A03**, which must be completed in full and signed in ink by a duly authorized representative of the Tenderer organization. If the Tenderer intends to call on the technical or professional resources of one or more Third Parties, a completed and signed form (Appendix **A03**) should also be submitted in respect of each Third Party, stating the core competency /competencies to which it refers.

All reference projects must be completed. A forecast of expected awarded projects, or projects not yet completed, will not be accepted as a reference project by TNO.

Core competency 1 – The Tenderer has experience in the manufacturing and delivery of pressurized and heated systems.

Reference project: During the three (3) years prior to the date of the Call for Tenders, the Tenderer has completed a project that demonstrates core competency 1, and had a contract value of at least € 150.000, excluding VAT. The project must have been completed in accordance with all the contractual conditions agreed at the time, including those relating to lead time and budget.

Core competency 2 – The Tenderer has experience in the manufacturing and delivery of pilot modules in the (chemical) process technology. Size range excepted between 1-100 kg/h throughput.

Reference project: During the three (3) years prior to the date of the Call for Tenders, the Tenderer has completed a project that demonstrates core competency 2, and had a contract value of at least € 150.000, excluding VAT. The project must have been completed in accordance with all the contractual conditions agreed at the time, including those relating to lead time and budget.

TNO reserves the right to verify all references TNO assumes that the Tenderer will have informed its referees accordingly and has obtained their permission. Where the Tenderer has not demonstrated the necessary experience in both competencies, the Tender will be declared invalid and excluded from the remainder of the Tender Procedure.

5.2.3 Professional authority

By completing the Self-declaration (Appendix A01) the Tenderer declares that he is registered in the relevant professional register or trade register, in compliance with all requirements of the member state in which he is based.

At the request of TNO, the Tenderer must provide the following evidential documents within the period stated in Para. 7.1:

- For companies registered in the Netherlands: an original certified extract from the Chamber of Commerce Trade Register should be submitted. This must be no more than six months old at the time of submission. Companies registered in another country should provide a comparable document in accordance with national legislation and practice.
- If the Tenderer is a legal partnership, extracts should be submitted for all parties who are included on the Trade Register, together with a declaration signed by all partners establishing the right of representation with regard to the Tender.
- If the Tenderer is a Combination, an extract should be submitted for each member.
- If the Tenderer intends to call upon the resources of one or more Third Parties or subcontractors, extracts should be submitted in respect of each Third Party or subcontractor.

5.3 Legal suitability to perform an assignment

On 8 April 2022, the EU adopted a fifth sanctions package regarding the Russian war in Ukraine (Council Regulation 2022/576). In that package, contracting authorities are prohibited from granting assignments to (1) natural persons with Russian nationality or legal entities established in Russia, (2) legal entities that are owned for 50% or more by one of the natural persons or legal entities referred to under (1), and/or (3) natural persons or legal entities acting in the interests or on the instructions of a natural person or legal entity referred to under (1).

TNO applies the above requirements as a suitability condition for this contracting procedure. A tenderer will be legally unsuitable to perform the assignment (Section 2.90(4) of the Dutch Public Procurement Act (*Aanbestedingswet*)), and its tender will be invalid, if:

- 1) the natural persons with Russian nationality or the legal entities are established in Russia; and/or
- 2) they are legal entities that are owned for 50% or more by natural persons or legal entities referred to under (1); and/or
- 3) they are natural persons or legal entities acting in the interests or on the instructions of a natural person or legal entity referred to under (1).

The tenderer must therefore demonstrate in its tender that:

- 1) the tenderer does not have Russian nationality and/or is not established in Russia; and
- 2) the tenderer is not owned for 50% or more by a natural or legal person referred to under (1); and

- 3) the tenderer is not acting in the interests or on the instructions of a natural or legal person referred to under (1), including the payment of monies to a natural or legal person referred to under (1), whether or not it is legally obliged to do so and whether or not it is actually possible at present.

If one or more of the above three (3) requirements cannot be demonstrated, the tender will be invalid.

For this purpose, a tenderer to which TNO intends to award an assignment must submit the following evidence within seven (7) calendar days of a written request by TNO to that effect:

- a) a recent (not older than six (6) months from date of registration) extract from the Commercial Register reflecting the most recent state of affairs; and
- b) a current overview of the holding structure (if the tenderer is part of a holding structure) showing the direct and indirect ownership relationships of the tenderer; and
- c) a copy of the tenderer's current articles of association.

The tenderer must continue to meet the suitability requirement. TNO will be entitled to check this during the term of the contract. If it becomes apparent during the term of the contract that the tenderer/contractor does not meet – or no longer meets – the suitability requirement, TNO will be entitled to terminate the contract with immediate effect, without being liable to pay damages to the tenderer/contractor.

6 Evaluation against Award Criteria

TNO will evaluate and rank the Tenders based on the Award Criteria. In most cases, the primary consideration will be the Price-Quality Ratio (PQR).

6.1 Best Price-Quality Ratio

This criterion is divided into the following sub-award criteria and weighting factors. A numerical score is given in respect of Price (TP) and another for Quality (QU).

Award criteria	Max. points
Price (TP)	500
Quality (QU)	500
Total	1000

Minimum quality requirement

TNO attaches great importance to achieving the best possible Price-Quality Ratio for the services which fall under this Tender. Quality is nevertheless a leading factor. A minimum requirement is therefore applied whereby the Tender must achieve a score of at least 300 points for the sub criterium of 'Quality'. A Tender which fails to do so will be excluded from further consideration, regardless of Price (TP).

The Tender with the highest total score is designated the '*Economically Most Advantageous Tender based on the Price-quality Ratio*' ('*Best PQR*'). The scores are rounded down to the nearest (1) decimal point. The overall score is the total of all non-rounded scores. The Call for Tenders will state the maximum scores available for each (sub-) sub-award criterion.

In the event of a 'tie' - two Tenders with exactly the same total score - the choice will fall to the Tender with the highest score for Quality. If all Tenders also tie for Quality, the Provisional Contractor will be selected by a drawing of lots.

6.1.1 Sub-award criterium: Price (TP)

To allow an evaluation of the Tender by total price (the TP sub-award criterium), the Tenderer should complete the Schedule of Prices and Costs in Appendix **A04**. If this schedule is found to include omissions or inaccuracies, the entire Tender will be declared invalid and excluded from further consideration.

The price is assessed according to the following elements. To allow a fair comparison of total price (TP), Tenderers must use the schedule provided by TNO as an MS Excel worksheet (Appendix **A04**). On completion, the schedule must be printed out, signed by an authorized representative of the Tenderer organization. It should then be added to the Tender. The Tenderer must adhere to the prescribed format. All sections must be completed. Tenders containing an incomplete form or a form of which the prescribed format is changed, are deemed invalid.

The allocation of points for Price is shown in the table below:

Criterion Price (TP)	Max. score
The (total price of the) Contract includes: - Minimum requirements and offered preferences; - Two year warranty; - Factory acceptance test (FAT); - Freight and shipping (DDP incoterms 2020); - Start up on site, excluding hook up; - Site acceptance test (SAT); - Manual of main components and documentation;	500
Price (TP)	500

When evaluating the Tender against the sub-award criterium of price, TNO will check that the schedule of costs and prices (Appendix A04) has been completed in full. A price quotation on the basis of the schedule must meet the following minimum requirements:

- 1) Prices and costs must be stated in euros, excluding VAT, and accurate to two decimal places.
- 2) All figures and calculation factors cited in the Dossier of Financial Agreements (DFA) are indicative; no rights may be inferred of claimed.
- 3) Hourly rates are deemed to be 'all-in' amounts which include all costs associated with the service provision, including but not limited to travel and accommodation expenses, office costs and overheads. The Tenderer confirms that there will be no additional costs further to the performance of the Contract. Costs, rates and/ or prices not included in the price sheet (Appendix A04) will not be paid by TNO during the fulfilment of the Contract.
- 4) The schedule of prices must be completed in full. The Tenderer must use the MS Excel spreadsheet provided by TNO without any amendments or alterations.
- 5) The Tenderer is responsible for ensuring the accuracy of all figures and calculations. There will be no negotiations about the price sheet (Appendix A04).
- 6) All prices quoted by the Tenderer must be based on the contents of the Tender Documents and form a binding offer.
- 7) Specific minimum requirements and additional instructions for the completion of the Schedule of Prices and Costs can be found under the tab marked 'Instructions'. Submission of the Tender indicates that the Tenderer accepts these conditions in full.

The lowest Total Price (TP) is assessed using the cumulative costs as defined by TNO and appearing on the schedule.

The Tender which offers the lowest Total Price (TP), corresponding to the lowest amount calculated for the total price, will be awarded the maximum of 500 points. Other Tenders will be scored *pro rata* in inverse proportion to price.

The calculation of the total number of points for Price is made using the following formula:

$$Points = 500 - \left\{ \frac{(I - LI)}{LI} \times 500 \right\}$$

Where:

Points: number of points scored for the criterion Price

I: Tender with "Price (TP)"

LI: Tender with lowest "Price (TP)"

If $I \geq 2xLI$, zero (0) points are awarded for the criterion Price (TP).

6.1.2 Sub-award criterium: Quality (QU)

Chapter 8 of the Tender Instructions, the Programme of Requirements (PoR), sets out the Minimum Requirements which must be met during the performance of the Contract activities. These are hard requirements, as formulated by TNO. If one or more of the hard requirements of the PoR are not met, the Tender is invalid.

In addition, the PoR includes a number of preferences with regard to the quality of the goods concerned. Tenderers are asked to state whether and how they can meet these soft requirements. The ability to do so is likely to influence the assessment of quality. For each preference, the Tenderer is asked to provide a description which addresses specific aspects as defined in the preference.

The description should be clear and unambiguous, covering all the relevant points. Each submission must be no more than the stated number of A4 pages (printed on one side only, with a line spacing of a least 1, minimum font size of 9 pt and margins of 2.5cm left, right, top and bottom).

TNO will base its assessment solely on the answers given, which must remain within the permitted length. If an answer exceeds the permitted length, the pages exceeding the maximum will not be assessed. Tenderers should avoid including cross-references to other documents in an attempt to evade the length restriction. Illustrations, diagrams, tables, organograms and sample reports are permitted. Any appendices do not form part of the answer and will not be included in this part of the evaluation procedure. It is possible that two or more tenderers will achieve the same scores for a particular question.

The answers setting out the manner in which the which the Tenderer proposes to meet the stated requirements must be presented in accordance with the instructions in Chapter 8. The Tenderer must use the templates provided in Appendix A05 and A06.

The allocation of scores for Quality is shown in the table below.

Chapter 8 Sub-sub-award criteria: Quality	Max points
8.4.1 Project Plan	200
8.4.2 Detailed Design Workplan	200
8.4.3 Execution Plan	100
Total	500

The evaluation of the answers to questions relating to the preferences listed in the PoR will also rely on a system of numerical scores. These scores will reflect the degree to which the Tenderer meets each preference. The various sub-sub-criteria will be scored by the individual assessors in accordance with the table below. The overall score (derived from the averages of the individual scores) will then be calculated as described in Para. 3.1.

Rating	Score	Notes
No/poor answer	0%	Nil score. In the assessment team's opinion, the tenderer does not answer the quality element or has skipped it altogether.
Inadequate answer	20%	In the assessment team's opinion, the tenderer does not sufficiently address the required elements and aspects in terms of content and relevance. The tenderer does not take sufficient account of the principles set out in this invitation to tender. The connection with the quality element of the contracting authority is insufficient.
Adequate answer	50%	In the assessment team's opinion, the tenderer does sufficiently address the required elements and aspects in terms of content and relevance, but his answer is too limited. The tenderer does take sufficient account of the principles set out in this invitation to tender, but his answer is too limited. The alignment with the quality element of the contracting authority is only partially sufficient.
Good answer	80%	In the assessment team's opinion, the tenderer addresses the required elements and aspects well in terms of content and relevance. The tenderer takes good account of the principles set out in this invitation to tender. The alignment with the quality element of the contracting authority is good.
Very good answer	100%	In the assessment team's opinion, the tenderer addresses the required elements and aspects very well in terms of content and relevance. The tenderer takes full account of the principles set out in this invitation to tender. The alignment with the quality element of the contracting authority is very good.

NB: These are the only possible scores; there are no intermediate values.

When evaluating the degree to which the Tender addresses TNO's preferences, the assessors will consider:

- the degree to which the proposed solution is specific, realistic, feasible, efficient, effective, complete and consistent
- the degree to which the proposed solution is in keeping with the specific situation and circumstances, and the degree to which it address the (hard) requirements and preferences stated in the PoR.

The evaluation is based on the 'total picture' created by each answer.

In addition, one open question (Question 8.5.1) is also asked, to which TNO would like to receive an answer. However, no points can be earned for your answers to this question.

Tenderers must be aware that the Tender will be a contract document if the Contract is awarded to the Tenderer. Therefore, the Tender must be as specific as necessary. A more specific Tender will score higher than a more general Tender.

6.2 Award of Contract

6.2.1 Announcement of Award Decision

All Tenderers will be notified of the results of the evaluation and the Award Decision. Every effort will be made to ensure that this notification is given on the date stated in the Schedule in Para. 2.1.

The notification of the Award Decision will state which Tenderer has been selected as the Provisional Contractor and will give general reasons for the rejection of other Tenders. In the interests of confidentiality, TNO will not provide any information relating to the Tender price offered by the unsuccessful Tenderers.

6.2.2 Objections

A Tenderer who does not agree with the Award Decision may lodge an objection. He must do so within twenty (20) calendar days of the date of the Award Decision and in the manner described in Para 2.4.

If interlocutory proceedings are filed, the Court's preliminary decision will be the basis for the continuation of the Tender Procedure.

6.2.3 Confirmation of Award

Once the period permitted for objections has elapsed and no interlocutory proceedings are filed, TNO will contact the winning Tenderer, as soon as possible, with a view to signing the Contract *unless* an appeal has been lodged with the judicial authorities. The Award is confirmed and is deemed to be final when TNO and the Tenderer enter into a formal Contract. Until the agreement is signed, TNO has no obligation, legal or otherwise, towards the Tenderer or any other party.

7 Evaluation of evidential documents and other documents

7.1 Submission of evidential documents and other documents

The Tenderer identified as the Provisional Contractor must submit all necessary documents and information in support of the statements made in the Self-declaration, as well as any other documents and/or information necessary to determine whether the Tender meets all requirements and can be realised, no later than seven (7) calendar days of being requested to do so by TNO. (These documents in question are those supporting Appendices **B01** to **B04** and any others stipulated in the Tender Instructions and/or request for information.)

TNO will request the Provisional Contractor to submit the required evidential documents which will then be evaluated against the following criteria:

- Timely submission (within allotted period)
- Whether all requested documents have been provided and are complete. The absence of (part of) any document and/or other information may result in the disqualification of the Tender.
- Whether the documents support the Tenderer's eligibility, as claimed by means of the self-Declaration.

It is stressed that any Tenders which prove to include material errors or make claims which cannot be substantiated will be excluded from the Tender Procedure. Tenderers must therefore compile their Tenders with the utmost care and truthfulness.

TNO can request the Provisional Contractor to provide other documents or evidence concerning the contents of the Tender.

7.2 Suspensory conditions

Where the Tenderer is unable to submit a copy of the required insurance policy or a certificate of insurance issued by a recognized insurance company within the period stated in the foregoing paragraph, but has nevertheless signed the Declaration of Intent in Appendix **B04**, and provided that the period permitted for objections has elapsed without any party notifying the intention to instigate legal action (or such action has been adjudicated in TNO's favour), TNO will notify the Tenderer of its intention to enter in a contract 'under suspensory conditions'. In practice, this means that the Contract may only be deemed final and valid if the Tenderer is able to submit a copy of the required insurance policy or a certificate of insurance issued by a recognized insurance company, showing that the Tenderer is insured as required in the Tender documents, no later than a period of seven (7) calendar days before the signing of the Contract. The Contract will be finalized upon receipt of one or other of these documents.

If the Tenderer fails to submit either a copy of the insurance policy or a certificate of insurance issued by a recognized insurance company, the Contract will be deemed null and void. TNO reserves the right to approach the party whose Tender was ranked second in the Tender Procedure with a view to entering into a Contract.

7.3 Contract signing

If the conditions in paragraph 7.1 and 7.2 and no interlocutory proceedings are filed within twenty (20) days after Award decision, or, if proceedings are filed, the claims are denied, TNO will proceed to formalise the Award of the Contract by sending the Contractor a purchase order. TNO points out that the Contract has not been definitively awarded until the purchase order has been submitted to the Contractor by TNO.

8 Minimum requirements with regard to Contract performance (Programme of Requirements)

TNO will assess all Tenders against the Minimum Requirements which relate to the manner in which the Contract itself is to be performed. The Minimum Requirements imposed by TNO itself are listed in this Chapter 8, the Programme of Requirements (PoR).

By submitting a Tender, the Tenderer indicates his unconditional acceptance of all Minimum Requirements, including TNO’s General Purchasing Conditions – February 2022 (Appendix C03).

Tenders which do not comply unconditionally with all minimum requirements in the PoR are deemed invalid and will be excluded from further consideration. Tenders are requested to supply answers on the preferences that can be scored by TNO (Chapter 6) as well.

As stated in Para. 6.1.2 of these Tender Instructions, this PoR contains, in addition to the minimum requirements, a number of requests, which are asked by question, regarding the quality of the requested realization and delivery.

The Tenderer demonstrates the ability to meet the requirements and preferences by means of his answers to the various questions, which must be structured in accordance with the instructions given in Chapter 8. The Tenderer must use the templates provided in Appendix A05 and A06.

Activities further to (under) the Contract must be performed in full accordance with the Tender Documents and the Tender submitted by the Tenderer. TNO wishes to stress that the requirements listed in the PoR form are binding Contract conditions. Any amendments to the PoR made during the term of the Contract are to be implemented within the framework provided by the Contract. TNO will ensure that there is no material alteration to the Contract or the obligations it imposes on either party.

Chapter 1 of this document includes a description of current situation. It sets out the purpose and scope of the Contract and hence the purpose and scope of the PoR.

Anticipated Möbius2 set-up at Rijswijk

As stated in Chapter 1, the aim with the Möbius2 is to have a process that is capable of recovering pure plastics from waste plastics. A process has been designed that consists of modules that have specific function in the process. This tendering document focuses of two of the modules, DSM and ASM.

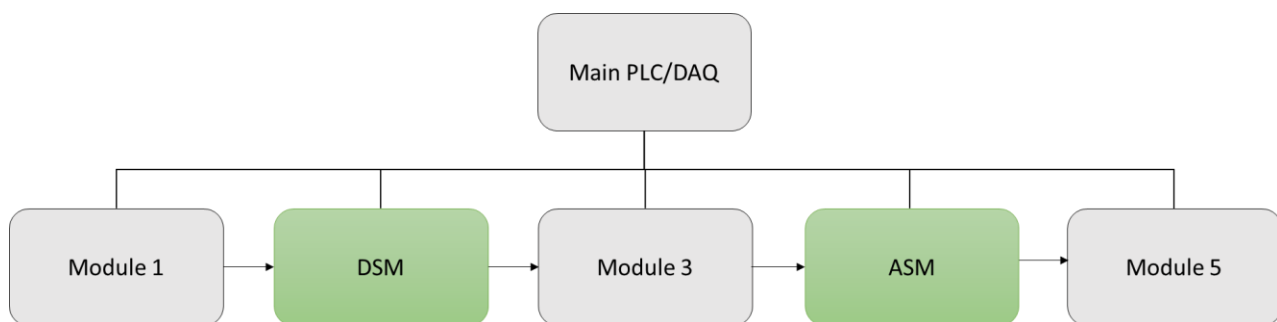


Figure 4: PFD of the entire system with the DSM and ASM modules highlighted

Sections Programme of requirements

The Programme of Requirement is divided into the following sections:

- 8.1 Technical Requirements of the realization and delivery applicable to both the DSM and ASM Module
- 8.2 Preferences of the realization and delivery applicable to both the DSM and ASM Module
- 8.3 Additional technical requirements of the realization and delivery of the DSM Module specifically
- 8.4 Additional requirements of the realization and delivery of the ASM Module specifically
- 8.5 General requirements

General remarks

Here below are some general remarks that are useful for the tenderer:

- Working hours: Working hours at TNO are between 07:30 and 18:00 on weekdays.
- Workspace: RCSG Rijswijk has compressed air from 4- 8 barg at the location. Both low nitrogen supply (6 bar(g)) and high pressure nitrogen (180 bar(g)) are available. Cooling water is available at 13 degC.
- Heating required for inside the Modules: Heating baths will be supplied by TNO.
- TNO envisions the modules to be similar to Figure 2 in design. A ventilated cupboard with equipment inside.
- The DSM and ASM will be operated in an environment where the ambient temperatures of 5-35 degC and there is a relative humidity of 10 to 90%, noncondensing.

8.1 Programme of Requirements of the realization and delivery of both the DSM and ASM Module

This contains the requirements regarding both DSM and ASM Modules.

<i>Requirements of the realization and delivery of the DSM and ASM Module</i>	
<i>Requirement 8.1.1</i>	<i>The DSM and ASM will each have their own control cabinet that is able to communicate with one central control unit.</i>
<i>Requirement 8.1.2</i>	<i>The DSM and ASM shall clearly notify the operator of its current operation status, including alarms and warnings and communicate to main central control unit.</i>
<i>Requirement 8.1.3</i>	<i>The DSM and ASM shall be designed for a lifetime of 10 years. Components with shorter lifetime will be documented and marked.</i>
<i>Requirement 8.1.4</i>	<i>The flow rate of liquid solvents into the DSM and ASM shall be between 1-10l/h. These liquids have a density of 0.7 – 1 kg/l and a viscosity range between acetone and water.</i>
<i>Requirement 8.1.5</i>	<i>The DSM and ASM shall be capable of safely handling flammable (cat. II) organic solvents.</i>
<i>Requirement 8.1.6</i>	<i>The DSM and ASM shall be able to operate in a temperature range from 25(ambient)- 150 degC.</i>
<i>Requirement 8.1.7</i>	<i>The DSM and ASM shall be able to operate from 1 bar(g), to a pressure of 15 bar(g) at the maximum operating temperature.</i>
<i>Requirement 8.1.8</i>	<i>The DSM and ASM shall be skid mounted.</i>
<i>Requirement 8.1.9</i>	<i>The DSM and ASM skid will have a maximum height of 2 m.</i>
<i>Requirement 8.1.10</i>	<i>One of the dimensions (either the width or length) of the DSM and ASM skid will be at most 1 m.</i>
<i>Requirement 8.1.11</i>	<i>One of the dimensions (either the width or length) of the DSM and ASM skid will be at most 1.7 m.</i>

Requirement 8.1.12	<i>The DSM and ASM shall comply with the maximum floor loading of 10 kN/m².</i>
Requirement 8.1.13	<i>The DSM and ASM shall be liftable using a standard pallet truck pushed through the narrowest dimension of the module.</i>
Requirement 8.1.14	<i>The DSM and ASM shall each be powered by a standard three phase electrical connection (400V). The connector should be 3P+N+E with a maximum current rating of 16 or 32 A.</i>
Requirement 8.1.15	<i>The DSM and ASM skids shall be equipped with 2 suction points, 250 mm diameter, to be connected to the RSCG ventilation.</i>
Requirement 8.1.16	<i>The DSM and ASM skids shall be designed in such a way that they minimize solvent exposure to the operator during filling, cleaning, draining and operation.</i>
Requirement 8.1.17	<i>Those parts in the DSM and ASM that need it, shall be easily accessible for maintenance, replacement and cleaning.</i>
Requirement 8.1.18	<i>The DSM and ASM shall meet all relevant general Dutch laws for experimental equipment, given that the site has all relevant permits.</i>
Requirement 8.1.19	<i>The DSM and ASM shall each measure the concentration of organic vapors in one of the ventilation connection with a LEL sensor for safety reasons. The value is sent to the central control unit for control and safety.</i>
Requirement 8.1.20	<i>The DSM and ASM shall each measure the flow (m³/h) in the ventilation connection for safety reasons. This value shall be a read-out electronically.</i>
Requirement 8.1.21	<i>The equipment and piping inside the DSM and ASM shall be able to be purged with nitrogen via an automated process. This is not intended for the cupboard itself.</i>
Requirement 8.1.22	<i>The hot equipment and piping inside the DSM and ASM shall be insulated to minimize the loss of heat.</i>
Requirement 8.1.23	<i>The DSM and ASM shall be placed inside closed setup frame, equipped with doors and windows for easy access to the setup. See photo of current Möbius1.0 set-up for reference of what TNO envisions.</i>
Requirement 8.1.24	<i>The DSM and ASM shall both have one inlet for Nitrogen and two outlets. One should be used as an inlet for Nitrogen, a second should be an outlet towards the following module and the third at an outlet towards the 250mm ventilation outlet. The connections shall be made by Swagelok and all piping should be in imperial measurements.</i>
Requirement 8.1.25	<i>The DSM and ASM shall have sensors that measure temperature(accuracy=0.1 degC), pressure (accuracy=+/-0.25%) of and flow rate pressure (accuracy=+/-0.5%) where it is important in the module for safety and operation of the module. The temperature and pressure should be controlled remotely.</i>
Requirement 8.1.26	<i>The DAC of the DSM and ASM shall read-out the various sensors and other inputs at a sample rate of 1s.</i>
Requirement 8.1.27	<i>The DAC of the DSM and ASM shall have configurable alarms and configurable procedures regarding those alarms.</i>

<p><i>Requirement 8.1.28</i></p>	<p><i>Data acquisition and control (DAC) system be located in a separate cabinet mounted to the frame with locable door. The box should be mounted in such a way that each module can be right next to another module on both sides.</i></p>
<p><i>Requirement 8.1.29</i></p>	<p><i>The DAC of the DSM and ASM shall have 4-20mA output signals for all installed sensors (waivers are possible for the type of output signal after good motivation and approval by TNO)</i></p>
<p><i>Requirement 8.1.30</i></p>	<p><i>The DSM and ASM skids should be fitted out with wheels for easy maneuvering in the RSCG lab but also be able to be stationary for years without losing maneuverability.</i></p>
<p><i>Requirement 8.1.31</i></p>	<p><i>All equipment and piping in the DSM and ASM that are in direct contact with the solvent or plastic feed shall be made of SS 316L, and for the entire system there is a high preference for items to be of item systems profile 8.</i></p>
<p><i>Requirement 8.1.32</i></p>	<p><i>Delivery time – It is preferred by TNO that delivery takes place within 20 weeks, after TNO submitted a purchase order.</i></p> <p><i>Tenderer is requested to provide the fastest, most reliable delivery time that Tenderer can guarantee, without any additional costs for TNO.</i></p> <p><i>Note: not achieving the offered delivery time will lead to a penalty discount of 20% of the total order amount and shall be immediately due and payable and eligible for setoff and will replace clause 8.4 of the General Purchasing Conditions TNO – 2022.</i></p>
<p><i>Requirement 8.1.33</i></p>	<p><i>Terms and conditions of payment:</i></p> <ul style="list-style-type: none"> <i>- 30% at order, after receipt of a bank guarantee covering 80% of the total amount.</i> <i>- 50% after delivery at location TNO.</i> <i>- 10% after successful Site Acceptance Test (SAT)</i> <i>- 10% after the test periods and approval by TNO’s management.</i> <p><i>The Tenderer to whom the Contract will be awarded must provide a bank guarantee to TNO, covering at least 80% of the total price. The Bank guarantee and the bank who issues the Bank guarantee have to be approved by TNO (minimal A rating). TNO must have the right to draw the bank guarantee in any and all cases where Tenderer falls short in fulfilling its obligations under the Contract. The validity of the bank guarantee may not expire until approval of the SAT by TNO.</i></p>
<p><i>Requirement 8.1.34</i></p>	<p><i>The DSM and ASM shall be delivered with all relevant documentation. This documentation must include at least the following:</i></p> <p><i>Installation documentation</i> <i>Design Package, including the P&ID of the system</i> <i>List of components/equipment</i> <i>Instruction manuals of the components and equipment where applicable</i> <i>Maintenance manual including all required technical documentation for Preventive and Corrective Maintenance of the components and equipment where applicable.</i> <i>Description of the safety features implemented</i> <i>Certificates and manuals of all third-party hardware that is part of the system.</i></p> <p><i>All the documents should be delivered digitally in English and are inspected during FAT.</i></p>

<p><i>Requirement 8.1.35</i></p>	<p><i>The system must be fully automated during normal operation and safely shutdown without operator intervention in case of a safety deviation for instance. Also, all critical components (to be discussed with TNO at a later stage) shall be CE certified.</i></p>
<p><i>Requirement 8.1.36</i></p>	<p><i>The DAC of the DMS and ASM shall be LabVIEW software based and Modbus TCP or equivalent serial communication protocol. All units shall be read-out and logged using SI based units such as °C, barg, l/h, m3/h, g/min, %LEL, .</i></p>
<p><i>Requirement 8.1.37</i></p>	<p>A Factory Acceptance Test must be performed by the tenderer at the location of the tenderer. As described on page 18, as part of the tender bid, we require the Tenderer to submit a proposal for the FAT plan. TNO states that the minimum requirements for checkpoints that must be incorporated in the FAT plan are:</p> <ul style="list-style-type: none"> • Both modules will be checked for damages; • The proper functioning of the modules will be checked; <ul style="list-style-type: none"> ○ Mechanical functions, ○ Electrical, - and switching functions, ○ User interface(s), including software, controls and data storage, ○ Safety functions ○ A mock experiment to check the combined equipment in each module. • The FAT includes testing all functions and the requirements as listed in the schedule of requirements section 8, and all other functions offered by the tenderer. • The presence and quality of the required documentation will be checked. <p>The details of the FAT shall be defined and agreed between TNO and the final Tenderer.</p>
<p><i>Requirement 8.1.38</i></p>	<p>A full Site Acceptance Test on-site at TNO, RCSG Rijswijk, shall be performed by the tenderer in cooperation with TNO. As part of the tender bid, we require the Tenderer to submit a proposal for the SAT plan TNO states that the minimum requirements for checkpoints that must be incorporated in the SAT plan are:</p> <ul style="list-style-type: none"> • Both modules will be checked for damages; • Any open issues from the FAT will be checked • A limited repeat of the proper functioning check of the modules during the FAT; Execution of a mock experiment to check the combined equipment in each module; • The presence of the required documentation will be checked.

8.2 Additional requirements of the realization and delivery of the DSM Module specifically

The Dissolution Module (DSM) is used for dissolving the plastics in an organic solvent under increased pressure and temperature. The module will consist of a stirred autoclave were plastic waste is added into the system as well as solvent of the solvent. The DSM will contain two identical autoclaves. A possible P&ID of one of the autoclaves sections of the DSM can be seen below. The DSM will need to have a nitrogen line were the pressure into the autoclave can be regulated. The DSM autoclaves should be able to run separately, in cascade as well as in parallel, making it possible to test as many different configurations as needed. The DSM module will be fed with a heated solvent that needs to stay warm, so insulation is also of utmost importance.

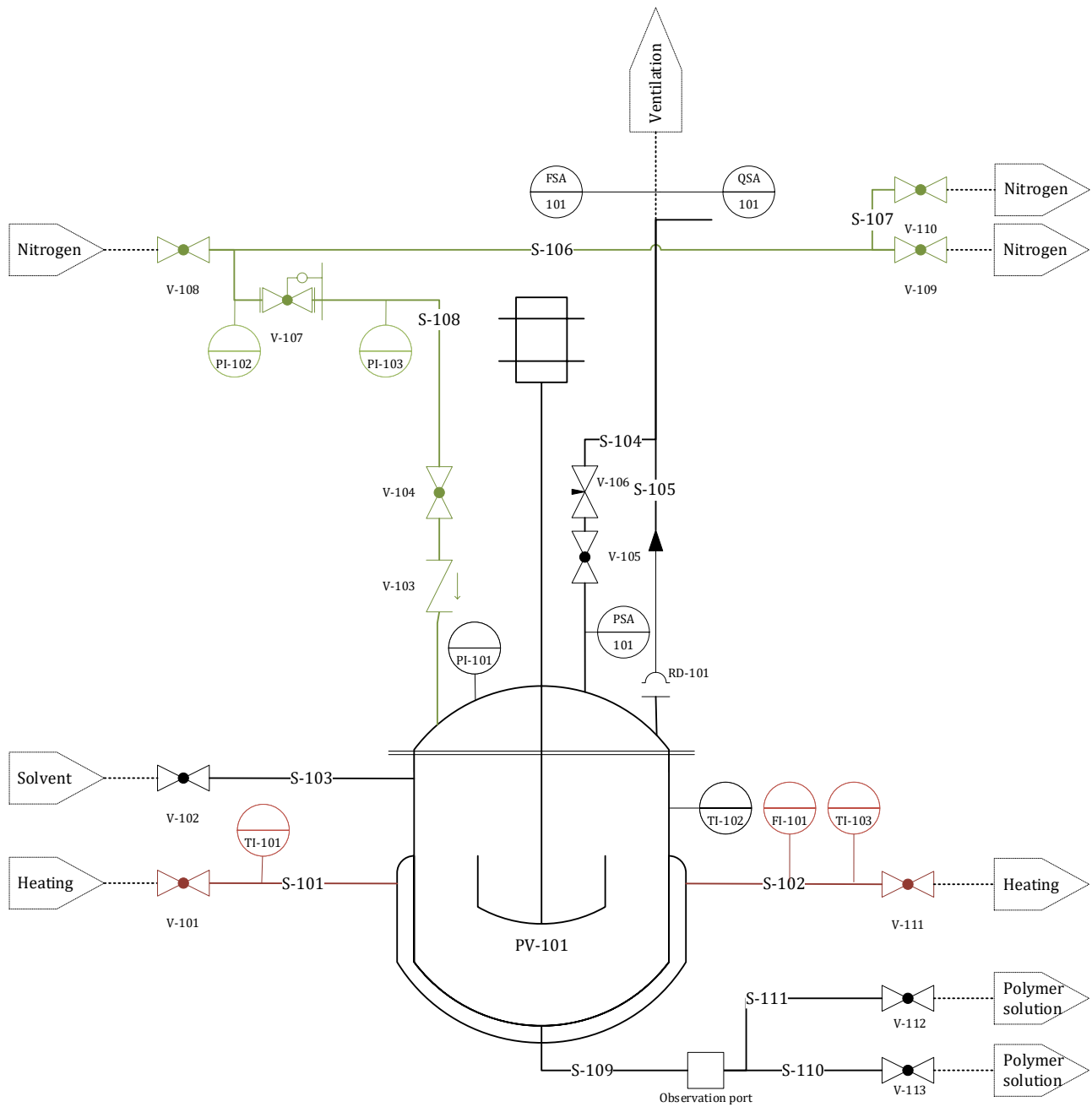


Figure 5: Possible P&ID of one of the autoclave sections the DSM Module

The following table contains the requirements that are specific to the DSM Module.

Additional requirements on the realization and delivery of the DSM Module	
<i>Requirement 8.2.1</i>	<i>The DSM shall be built around two CSTR type autoclaves.</i>
<i>Requirement 8.2.2</i>	<i>The operator shall be able to choose between each of the autoclaves, or to operate them in parallel or both of them in series. . This should be done with actuated valves.</i>
<i>Requirement 8.2.3</i>	<i>The DSM shall be capable of handling various forms of plastic feed by changing the type of the stirrer and its rotational speed.</i>
<i>Requirement 8.2.4</i>	<i>It shall be possible to load the DSM with various forms of plastic feed. Flakes with maximum size of up to 5mm x 3mm, roundish pellets and chunks of up to 10 mm diameter.</i>
<i>Requirement 8.2.5</i>	<i>Solids, including the plastic feed, shall be able to be added to the each autoclave of the DSM under pressure with overpressure.</i>
<i>Requirement 8.2.6</i>	<i>Each of the autoclaves shall have a size of 7.5l.</i>
<i>Requirement 8.2.7</i>	<i>The DSM shall be able to maintain the temperature of the dissolution process in each autoclave at a set temperature up to 150 degC by using a jacket. The heating fluid will be supplied by another module supplied by TNO.</i>
<i>Requirement 8.2.8</i>	<i>Each autoclave of the DSM shall be able to stir the plastic feed in the CSTR at a speed of 1 to 200 RPM. The content of the autoclaves can be assumed to be either a slurry with the particles as described in Requirement 8.2.4 in the solvent described in Requirement 8.1.5 or a solution with a viscosity range off 0.7-10 mPa*s.</i>
<i>Requirement 8.2.9</i>	<i>Each autoclave of the DSM shall be able to be pressurized with nitrogen up to the maximum operating pressure.</i>
<i>Requirement 8.2.10</i>	<i>Apart from the main polymer solution exit, each autoclave of the DSM shall have a secondary exit for cleaning and flushing purposes.</i>
<i>Requirement 8.2.11</i>	<i>Each autoclave of the DSM shall have a transparent section at the exit of or in the dissolution section.</i>
<i>Requirement 8.2.12</i>	<i>The DSM should be fitted with a sampling port.</i>
<i>Requirement 8.2.13</i>	<i>All piping shall be traced.</i>
<i>Requirement 8.2.14</i>	<i>The DSM should be fitted with a coarse filter before the polymer solution leaves the DSM.</i>

8.3 Additional requirements of the realization and delivery of the ASM Module specifically

The purpose of the anti-solvent module (ASM) is to precipitate the plastic by using an anti-solvent. The Module consists of two stirred autoclave where the anti-solvent and the feed (consisting of another solvent and the plastic) are added together. In the autoclaves, a

suspension of polymer and the two different solvents is formed. The ASM will contain two identical autoclaves. A possible P&ID of one of the autoclaves sections of the ASM can be seen below. The ASM will need to have a nitrogen line were the pressure into the autoclave can be regulated. The ASM autoclaves should be connected by a pipe to transfer liquid between the two but it is not required that the autoclaves run in parallel or in series. A possible P&ID of one of the autoclaves in the ASM can be seen below. The ASM will need to have a nitrogen line were the pressure into the autoclave can be regulated. The ASM module will be fed with a heated solutions that need to say warm, so insulation is also of utmost importance.

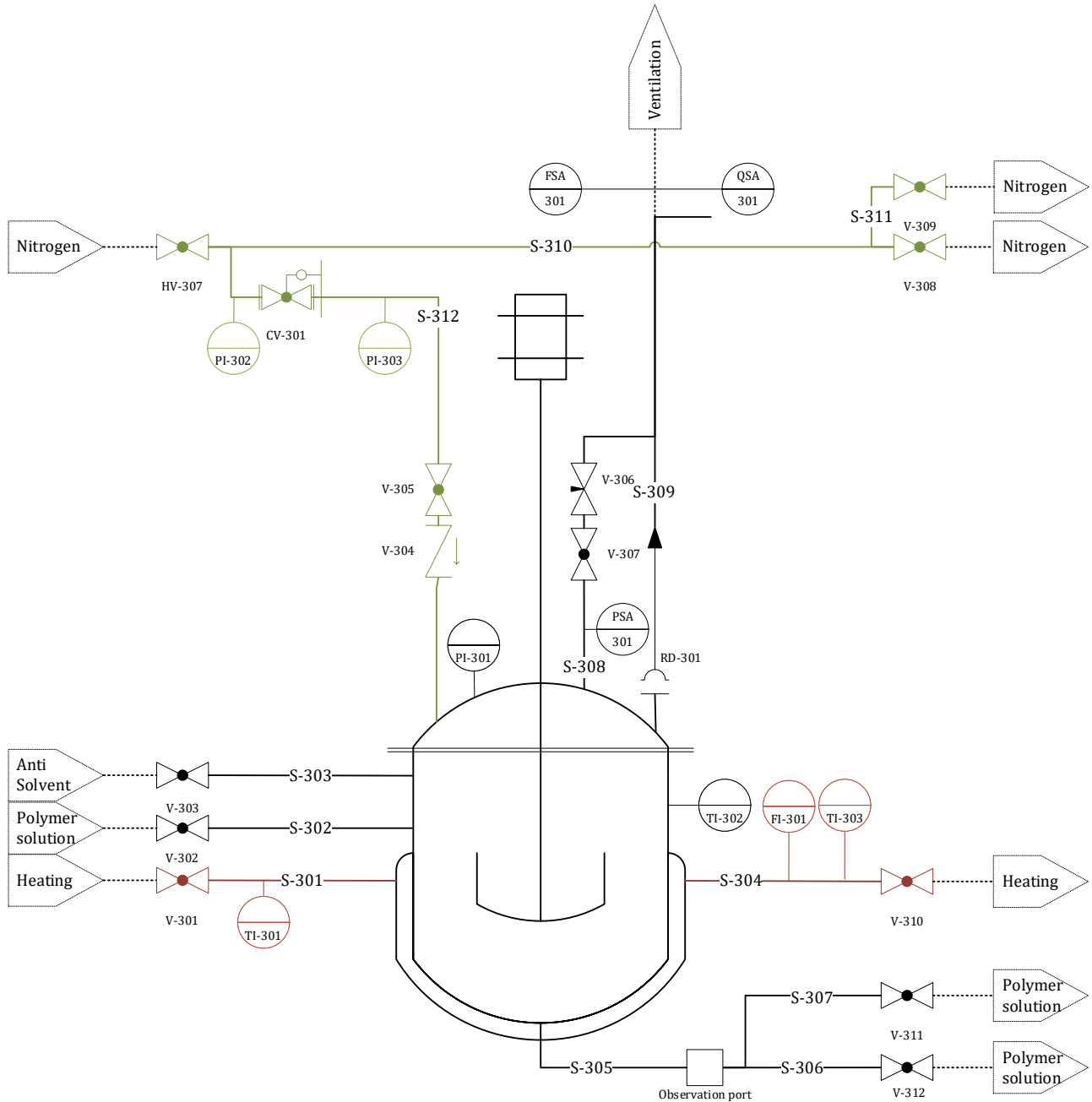


Figure 6: Possible P&ID of the ASM module

The following table contains the requirements that are specific to the ASM Module.

Additional requirements on the realization and delivery of the ASM Module	
Requirement 8.3.1	The ASM shall contain two CSTR type autoclavise.
Requirement 8.3.2	The autoclaves ASM shall have a 10l.
Requirement 8.3.3	The ASM shall be able to maintain the temperature of the precipitation process in the autoclave at a set temperature from 35(ambient) to 150 degC by using a jacket. The heating fluid will be supplied by another module supplied by TNO.
Requirement 8.3.4	The ASM shall measure, read-out and log the temperature and pressure inside the autoclaves.
Requirement 8.3.5	The ASM shall be able to measure, read-out and log the amount of liquid in the autoclaves.
Requirement 8.3.6	The ASM shall be able to stir the feed in the autoclaves at a speed of 1 to 200 RPM.
Requirement 8.3.7	The autoclaves of the ASM shall be able to be pressurized with nitrogen up to the maximum operating pressure.
Requirement 8.3.8	Apart from the main polymer solution exit, the autoclave of the ASM shall have a secondary exit for cleaning and flushing purposes.
Requirement 8.3.9	The ASM shall have a transparent section at the exit of or in the autoclaves.
Requirement 8.3.10	The ASM should be fitted with a sampling port on the autoclaves.
Requirement 8.3.11	All piping that is upstream of the autoclaves that contains the solvent solution, anti solvent or heating, as stated in the P&ID shall be traced.

8.4 Preferences of the realization and delivery of the DSM and ASM Module

This paragraph contains the preferences regarding both DSM and ASM Modules.

Preferences of the realization and delivery of the DSM and ASM Module	
<p>Preference 8.4.1</p> <p>Project Plan</p>	<p>By means of this selection criterion, TNO wants to gain insight into the manner in which the detailed design and build of the DSM and ASM module results in a smooth FAT, delivery and SAT. Please describe in a Project Plan your way of working. TNO is particularly, but not solely, interested in these aspects:</p> <ul style="list-style-type: none"> • How the tenderer foresees the communication between the two parties (0-50 points); • How the tenderer foresees risk management for this project (0-50 points); • How safety analysis will be conducted (0-50 points) and how this effects change management, if needed (0-50 points).

	<p><i>Tenderer's answer must be not more than 4 A4 pages, according to the instructions in Paragraph 6.1.2, including pictures and/or schemes and at least a Gantt-chart.</i></p> <p><i>TNO's assessors will consider the degree to which the plan is an efficient, effective and realistic plan.</i></p>
<p>Preference 8.4.2. Detailed Design Workplan</p>	<p><i>TNO is looking for innovative yet economical proposals for the module of the DSM and ASM Modules. Please describe your innovative technical solutions in the realisation of the DSM and ASM Modules.: Tenderer can answer with either of the two options:</i></p> <ol style="list-style-type: none"> <i>1. Technical innovative solutions for DSM and ASM (0-175 points);</i> <i>- or -</i> <i>2. Proof of old cases that the tenderer has realised that are relevant and/or similar to the DSM and ASM (0-100 points).</i> <p><i>Please describe how you think these innovations will technically as well as economically fit the requirements, or even enhance the module beyond this in a safe manner.</i></p> <p><i>Tenderer's answer must be not more than 4 A4 pages, according to the instructions in Paragraph 6.1.2, including pictures, schemes, etc.</i></p> <p><i>The DSM and ASM will need to have sampling ports that can deliver representative samples of the process. Please describe how tenderer foresees this in practice (0-25 points).</i></p> <p><i>TNO's assessors will consider the degree to which the plan contains (the combination between) realistic and innovative solutions.</i></p>
<p>Preference 8.4.3 Execution Plan</p>	<p><i>This quality award criterion 8.4.3 and the requirements 8.1.37 and 8.1.38 have a lot of pressure on the time component relative to the realisation of the Möbius2 total set-up and therefore of each module. Our deadline for start commissioning is June 1st 2023.</i></p> <p><i>Please describe in your execution plan the planning and how you think the delivery and subsequent successful SAT, will fit this timeframe (0-100 points).</i></p> <p><i>Tenderer's answer cannot exceed 2 A4 pages, according to the instructions in Paragraph 6.1.2, , including pictures and/or schemes and at least a Gantt-chart.</i></p> <p><i>TNO's assessors will will consider the degree to which the plan is an efficient, effective and realistic plan.</i></p>

8.5 Question

<p>Question about sustainability</p>	
<p>Question 8.5.1 Sustainability</p>	<p><i>Considering the growing awareness with regard to sustainable business practices, nationally and internationally, whether required by laws and regulations, promoted by the UN Sustainable Development Goals, or even by the changing</i></p>

societal expectations, there are numerous reasons in today's world that drive organizations to be more sustainable, including TNO.

As you may know, ISO 20400 is an international standard that provides guidelines on sustainable procurement. The standard can be used by any organization that intends to improve their social, economic, and environmental sustainability.

Do you apply the ISO 20400 guideline or similar guidelines and if so, how do or did you implement this in your own organisation? You may also answer the question by specifying what measures you already initiated to pursue a more sustainable procurement and where do you see opportunities for yourself and for TNO?

Please describe your answer within maximum 2 A4 pages and please note that for this part no point will be awarded.

9 Appendices

All Appendices to the Tender Documents are published to accompany the Tender Instructions on www.tenderned.nl.

The Appendices fall into three categories:

A) To be submitted with Tender

- Appendix A01** Self-declaration by the Tenderer: European Single Procurement Document (ESPD)
- *If the Tender is to be submitted by a Combination, a copy of Appendix A01 must be submitted by each member of the Combination.*
- Appendix A02** Self-declaration by all Third Parties on whose resources the Tenderer intends to rely: European Single Procurement Document (ESPD)
- *Where necessary, a copy of this form should be provided for each Third Party on whose resources the Tenderer intends to rely.*
- Appendix A03** Prescribed format for Reference projects
- Appendix A04** Schedule of Prices and Costs
- Appendix A05** Conformity list Programme of Requirements
- Appendix A06** Notification of preferences/answers to questions

B) To be submitted on request (evidential documents)

- Appendix B01** Self-declaration with regard to subcontractor(s) to be deployed during performance of Contract: European Single Procurement Document (ESPD)
- *Where necessary, a copy of this form should be provided for each subcontractor*
- Appendix B02** Declaration re. use of Third Party financial and economic capacity
- Appendix B03** Declaration re. use of Third Party technical and professional competence
- Appendix B04** Declaration re. insurance policy/certificate of insurance

C) Additional information:

- Appendix C01** Standard template for questions submitted by Tenderer
- Appendix C03** TNO General Purchasing Conditions, February 2022

Remarks

Some of the forms and templates listed above are made available as 'editable' MS Excel or MS Word files. This is to facilitate both their completion by the Tenderer and the subsequent evaluation by TNO, in accordance with Chapter 5. Some (sections of the) documents are secured in order to prevent unintentional or undesirable changes.

It is not permitted to make any alteration to the format or pre-completed content of any document. The format and text of all documents as included in the Tender Instructions and published on www.tenderned.nl will take precedence at all times.