

Tender Instructions

Applicable to the European Public Tender for: a continuous furnace system

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 A07 – 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, an officer of that company and/or a Third Party with a material involvement in the Tender and the proposed Contract. Grounds for 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.

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: <http://www.tno.nl>.

1.2 Organizational structure

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

TNO STRUCTURE



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.

1.2.1 Procurement

TNO's Procurement Department oversees all purchasing, procurement and tendering procedures on behalf of TNO, doing so in close cooperation with Brightlands Materials Center (BMC), located in Geleen, the Netherlands.

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 Brightlands Materials Center

Brightlands Materials Center is a Joint Innovation Center of TNO and the Province of Limburg in the field of polymeric materials, performing programmatic research that is driven by the industrial and societal challenges of tomorrow. You can find more details about Brightlands Materials Center and its program lines on their website.

The Materials Solutions research group works together with a variety of industrial partners, as well as actors from the knowledge infrastructure, including other research organizations and universities. The work is typically contained in multi-year and multi-client research and technological development projects, including those within the context of the European Framework Programs.

1.3 Contract description

The purpose of the current Tender Procedure is to select one (1) Contractor to deliver a continuous furnace system. The deliverables and the manner in which they are delivered 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. The latter are in the nature of 'preferences' which should be taken into consideration to the greatest extent possible.

1.3.1 Background of the demand

TNO and Brightlands materials center have the goal to come with the first affordable, sustainable, energy-optimised window on a 1x1m scale demonstrating that it is possible to produce these windows at an industrial scale. These windows will combine high visible transparency combined with an autonomously switch (thermochromic), from solar infrared transmissive to blocking state depending on the temperature, without visible color change, for efficient heat management in the built environment.

SunSmart is Brightlands Materials Center Thermochromic Solar Control Coating for architectural glazing. The coating can change its properties from infrared transparent to IR blocking depending on the glass temperature.

1.3.2 Scope and content of the Contract

The Contract for the delivery of a continuous furnace system relates to the provision of supplies, services or works as specified in the Programme of Requirements (Chapters 6 and 8) as applicable.

In relation with the current Tender Procedure, TNO has not the intention to issue a Contract for maintenance/services. However, we wish to gain more insight in the various options you can offer TNO in relation with preventive and corrective maintenance.

In this perspective, TNO has divided maintenance/services into two types, namely basic and all-inclusive. The price for the variation in maintenance/services must be submitted by the Tenderer in Appendix A04. These quoted prices shall be fixed and no indexation will take place the first 2 years after the final acceptance of the continuous furnace system by TNO.

For the developing of a proposal what exactly falls under the maintenance/services (for the relevant price, as included in appendix A04), TNO expects a proposal further specified in section 1.3.2.1.

1.3.2.1 Optional maintenance/services contract

TNO has divided maintenance/services into two types, namely basic and all-inclusive. The price for the various options for maintenance/services must be submitted by the Tenderer in Appendix A04. These quoted prices shall be fixed, and no

indexation should take place the first 2 years after the final acceptance of the continuous furnace system by TNO. TNO has two different types of maintenance/services in mind, namely: basic and all-inclusive.

The price for the variation in maintenance should be submitted by the Tenderer in the price sheet (Appendix A04), as an optional item. For the elaboration of what exactly falls under the maintenance (for the relevant price, as offered in the price sheet), TNO expects an elaboration to be submitted as 'Appendix A07 - Maintenance/Services' (own format). TNO would like to receive a proposal for maintenance/services containing at least the two types of maintenance as described below, and this for the duration of 1, 2 and 3 years. TNO will pay attention to.

"All-inclusive"

What is offered for the "All-inclusive" maintenance contract type. What exactly does Tenderer offer and how does this match with the wishes of TNO, such as but not limited to response times, service-desk reachability, software updates, additional service hours, not covered in this type of contract, etc. Make a preventive and corrective breakdown here. The maintenance time of the continuous furnace system shall not exceed two weeks per year. Therefore, state the consequences of not achieving or not fulfilling the service level specified by the tenderer.

"Basic"

What is offered for the "Basic" maintenance contract type. What exactly does Tenderer offer and how does this match with the wishes of TNO, such as but not limited to response times, service-desk reachability, software updates, additional service hours, not covered in this type of contract etc. Make a preventive and (if available) a corrective breakdown here. The maintenance time of the continuous furnace system shall not exceed two weeks per year. Therefore, state the consequences of not achieving or not fulfilling the service level specified by the tenderer.

The entire answer should be no more than six (6) A4 pages. If the answer exceeds six A4 pages, the additional pages will be disregarded.

In addition to the maintenance contracts referred to above, the Tenderer is also entitled to propose another variant that, in the Tenderer's opinion, is even more in line with TNO's wishes and needs.

1.4 Socially responsible procurement

Sustainability is an extremely important aspect of TNO's core business. Much of our research 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.

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 to apply for the European public procurement procedure, which means that the Call for Tenders will be published on the TenderNed website at www.tenderned.nl. 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)	10-11-2021
2.	Final opportunity for interested parties to submit questions	28-01-2022; 10 hrs. (CET)
3.	Publication of (final) Memorandum of Information	11-02-2022
4.	Final date (and time) for submission of Tenders	22-02-2022; 14:00 hrs. (CET)
5.	Announcement of Intention to Award	25-03-2022
6.	Final date for submission of evidential documents by intended Contractor	01-04-2022, in accordance with conditions stated in Section 7.1
7.	Final date for lodging an objection	19-04-2022
8.	Confirmation of Contract Award	Close after 19-04-2022

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 Tendered and in a manner other than prescribed in this Tender Instructions. If 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 : Arjan Verhoeven
Position : Senior buyer
Department : Procurement
Correspondence : P.O. Box 8550, 5605 KN, Eindhoven
Email : Via TenderNed; questions and answers module of the related Tender procedure

Tenderers can not 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 should this be awarded to the Combination.

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' in 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 capacityA) 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).

B) Instructions for Provisional Contractors who intend to call upon the financial, economic, technical and/or professional capacity 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.

The Tenderer is aware that the provision of 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.

3. TNO reserves the right to have a third party credit agency assess the Tenderer's financial status prior to the confirmation of the Contract award. Should this assessment reveal that the Tenderer's and/or the Third Party's financial position is not (or no longer) in keeping with the requirements of the Tender Instructions, TNO will exclude that Tenderer and will consider awarding the Contract to the Tenderer with the next highest assessment score.

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 ninety (90) calendar days from the final date to submit Tenders (see paragraph 2.1). This period of validity is automatically extended until the point at which the final Contract is signed with the Tenderer who emerges as the Provisional Contractor.

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 Terms and Conditions of Procurement, version of June 2014, 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 Contract and exceptions to the General Terms and Conditions of Procurement.

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 Contract and/or the amended General Terms and Conditions of Procurement 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 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 be 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 a 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.

2.2.23 Factory Acceptance Test (FAT)

The continuous furnace system must be tested in the presence of TNO employees, conducted at Tenderer's premises (FAT) and prior approval of shipment to TNO. The FAT must include all the functional and technical user specification requirements as listed in this chapter 8.

The details of the factory test shall be defined between TNO and the Tenderer to whom the Contract will be awarded but Tenderers must submit a draft test protocol for the site acceptance test with its Tender.

2.2.24 Site Acceptance Test (SAT)

The SAT contains at least the following checkpoints:

- The continuous furnace system will be visually inspected for damages;
- The proper functioning of the equipment will be checked:
 - Mechanical functions,
 - Electrical safety- and switching functions,

- User interface(s), including software.
- All requirements (such as straightness etc.) and possible additional requirements will be checked;
- The presence and quality of the documentation will be checked

A full user acceptance test on-site of the contracted Tenderer must be performed by the Tenderer in cooperation with TNO.

Following approved user acceptance test on-site at TNO, the delivered continuous furnace system shall be at the unrestricted disposal of TNO for three 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 continuous furnace system is not operating in this period according to TNO's functional and technical specifications, the faults and/or malfunctions will be remedied 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.

The details of the site acceptance test shall be agreed between TNO and the Tenderer to whom the Contract will be awarded but Tenderers must submit a draft test protocol for the site acceptance test with its Tender.

2.2.25 Failure in FAT and/or SAT

In the event that the deliverables fail to meet the user Acceptance Criteria for the FAT/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 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.

2.2.26 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.

2.2.27 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.

2.2.28 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.

2.2.29 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 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 the draft Contract included as Appendix **C02** and 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 Dutch. 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.

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 Tenderer 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 an enumeration of dates TNO is prevented 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, 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 A07** which must be completed in full and signed duly 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. The completed Tender documents must be uploaded to the TenderNed secure document safe no later than **14:00 hrs. on 22-02-2022**.

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:

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 A04 Schedule of prices / charges

Appendix A05 Conformity list Programme of Requirements

Appendix A06 Notification of preferences/answers to questions.

Appendix A07 Optional maintenance/services contract

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 **A07**) 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, consisting of 3 scientists with expertise in the field of chemical solution deposition of functional oxide thin films, 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 4 to 8.

- Chapter 4** : Evaluation with regard to timely submission, form, presentation and completeness
- Chapter 5** : Evaluation regarding Eligibility Requirements and Grounds for Exclusion.
- 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 2.2.27).

4 Evaluation of timely submission, form, presentation and completeness

4.1 Timely submission

The Tender must be submitted before final date (and time) 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) 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 Conduct;
- Foreign companies without a Dutch subsidiary cannot apply for a CoC. If a tenderer has its corporate seat in a country that does not issue a CoC or an equivalent form, the tenderer must provide a statement in which the tenderer solemnly declares under oath that the grounds for exclusion do not apply to the business. The statement must be made before a competent judicial or administrative authority, a civil-law notary or a competent professional body of that country and must be addressed to the contracting authority.
- A declaration issued by the tax authority 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 validity of the declaration with regard to the social security contributions and/or taxes issued by the tax authority, must not exceed six months at the time of Tenderers submission. This is to confirm that the Tenderer, Combinant and/or Third Party has fulfilled its obligations under the legal provisions applicable.

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.

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 a liability insurance with a cover of at least € 2.000.000,- 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 (timely) 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 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.

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.

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)	300
Quality (QU)	700
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 **175** points in total 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 total score is the total of all non-rounded scores. The total score is rounded to one decimal, being the nearest. 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.

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 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 whose prescribed format is changed, are deemed invalid.

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

Criterion	Max. score
Price TP – Continuous furnace system, and includes: <ul style="list-style-type: none"> • Two year warranty; • FAT & SAT; • Installation on site; • Operator & maintenance training; • Delivery of the continuous furnace system according Incoterms DDP, TNO location BMC, Geleen, the Netherlands 	300
Total TP =	300

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) Only the unit prices and rates which appear on the price schedule will be included in the evaluation. They will remain valid throughout the duration of the Contract. Prices which deviate from those stated in the Tender Documents confer no rights or obligations on either party during the actual execution of the definitive Contract.
- 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 Tenderer is responsible for ensuring the accuracy of all figures and calculations. There will be no negotiations about the price sheet (Appendix **A04**).
- 5) All prices quoted by the Tenderer must be based on the contents of the Tender Documents and form a binding offer.
- 6) Specific minimum requirements and additional instructions for the completion of the Schedule of Prices can be found under the tab marked 'Additional 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 **430** 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:

$$\text{Points} = 300 - \left\{ \frac{(I - LI)}{LI} \times 300 \right\}$$

Where:

Points: number of points scored for the criterion Price

I: Tender with "Price-TP"

LI: Tender with lowest "Price-TP"

If $I \geq 2 \times LI$, 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 products/services concerned. These preferences have been identified by means of a process of consultation. Tenderers are asked to state whether and how they can meet these soft requirements. Elaborating on the preferences will help Tenderers distinguish themselves qualitatively from one another. For each preference, the Tenderer is asked to provide a description which addresses certain specific aspects.

The description should be clear and unambiguous, covering all the relevant points in order.

Each submission must be no more than the stated number of A4 pages (printed on one side only, with a line spacing of at 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 Tenderer proposes to meet the stated requirements must be submitted in accordance with the instructions in Chapter 8. The Tenderer must use the template provided (Appendix A05).

Responses explaining the manner in which the Tenderer proposes to meet the stated preferences must be submitted in accordance with the instructions in Section 8. The Tenderer must use the template provided (Appendix A06).

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

Chapter 7 Sub-sub-award criteria: Quality	Max points
Preference 8.1.2	70
Preference 8.1.4	35
Preference 8.1.6	90
Preference 8.1.8	28
Preference 8.1.13	21
Preference 8.2.3	56
Preference 8.2.8	105
Preference 8.2.11	105
Preference 8.2.12	105
Preference 8.2.13	21
Preference 8.5.1	57
Preference 8.6.1	7
Total	700

In a few cases, the evaluation of the soft preferences will rely on a score in the form of a percentage of the maximum score possible for the sub-sub-award criterium. These scores will reflect the degree to which the Tenderer meets each preference. The possible scores/ percentages are:

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.
Insufficiently answered	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 Call for Tenders. The connection with the quality element of TNO is insufficient.

Rating	Score	Notes
Sufficiently answered	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 Call for Tenders, but his answer is too limited. The alignment with the quality element of TNO 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 Call for Tenders. The alignment with the quality element of TNO 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 Call for Tenders. The alignment with the quality element of TNO 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 extent to which the proposed solution is specific, realistic, feasible, effective, complete, fitting and consistent
- the extent to which the proposed solution is consistent with the specific situation and circumstances, and
- the extent 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.

6.2 Award of Contract

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.

6.2.1 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.

6.2.2 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 Tenderer meets all requirements and can be realised, within 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 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 and the Provisional Contractor can proceed with the signing of the contract. TNO points out that the Contract has not been definitively awarded until the Contract has been signed by both TNO and the Contractor.

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 Chapter 8, the **Programme of Requirements** (PoR). By submitting a Tender, the Tenderer indicates his unconditional acceptance of all Minimum Requirements, including the terms and conditions stated in the Draft Contract (Appendix C02).

Tenders which do not comply unconditionally with all minimum requirements are deemed invalid and will be excluded from further consideration. This applies to the hard requirements. Tenders are requested to file an answer on the preferences/ soft requirement that can be scores by TNO (chapter 6).

In addition to the minimum requirements as stated in paragraph 6.1.2 of these Tender Instructions, this PoR also contains a number of preferences regarding the quality of the requested delivery/services.

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 template as provided (Appendix A05 and Appendix A06).

Activities further to 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 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.

The Programme of Requirement is divided into the following sections:

- 8.1 Continuous Furnace system - Dimensions and specifications
- 8.2 Continuous Furnace system - heating & atmosphere
- 8.3 general requirements
- 8.4 maintenance / services
- 8.5 trial test on site
- 8.6 software
- 8.7 terms and conditions of payment

The method of validation during FAT and/or SAT is defined as:

- “D” requirement validation by review of design;
- “I” requirement validation by inspection;
- “V” requirement validation by visual inspection;
- “T” requirement validation by Test.

When two methods of validation are mentioned, it means both methods will be used.

8.1 Aspect “Continuous furnace system - Dimensions and specifications”

Dimensions and technical requirements; in this paragraph technical requirements are listed related to the placement of the furnace into the pilot-line infrastructure as well dimension required for the furnace.

Aspect “Continuous furnace system - Dimensions and specifications”		Remarks for score (in case of preference)	Max. Score	Method of validation
Requirement 8.1.1	The continuous furnace system including all its components, should not consume more energy than 180A at 400V at peak capacity.			D

Aspect "Continuous furnace system - Dimensions and specifications"		Remarks for score (in case of preference)	Max. Score	Method of validation
Preference 8.1.2	<p>The continuous furnace system, including all its components, consumes less than 180A at 400V 5p.</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>	<p>If the peak consumption is reduced to:</p> <p><160A at 400V: 10 points</p> <p>< 140A at 400V: 35 points</p> <p><125A at 400V 5p: 70 points</p>	70	D
Requirement 8.1.3	<p>The continuous furnace system has be possibility to anneal float glass with the following dimensions:</p> <ul style="list-style-type: none"> • 1000mm X 1000 mm X 2.0 - 6.0 mm* • 500mm X 500mm X 2.0 - 6.0 mm* • 330mm X 450 mm X 2.0 - 6.0 mm* <p>* thickness can vary between 2.0-6.0 mm</p>			D
Preference 8.1.4	<p>It shall be possible to use annealing float glass with dimensions smaller than requirement 8.1.3, the thicknesses of which vary between 2.0-6.0mm. Wherein the smallest size is 100mm X 100mm</p>	Binair yes/no	35	D
Requirement 8.1.5	<p>The continuous furnace system should not have a larger footprint than 11 (l) X 2.5m (w) X 2.0 (h) (including a safe loading and safe unloading part of furnace) If the continuous furnace exceeds this dimensions, it cannot be placed within our infrastructure.</p> <p>Please describe how the safe loading and unloading of the furnace will be implemented/achieved.</p> <p>The entire answer should be no more than two (2) A4 page. If the answer exceeds two (2) A4 pages, the additional pages will be disregarded.</p>			D
Preference 8.1.6	<p>If the furnace has a smaller design, we will have more flexibility within our pilot-line infrastructure, therefore if the continuous furnace system has a smaller footprint than 11m (l) x 2.5m (w)m , (including loading and unloading part of furnace), this is of value for us.</p> <p>As long as the height does not exceed 2.0m (requirement 8.1.5), reducing it does not have a additional value.</p> <p>Reducing the size of the furnace however retaining safety as described in requirement 8.1.5.</p>	<p>For every 0.5m shorter in length 10 points are awarded, until a minimum length of 8m.</p> <p>For every 0.25m in width 10 points are awarded, until a minimum width of 1,75m.</p>	90	D
Requirement 8.1.7	<p>Nitrogen consumption needed to operate the system under normal operating conditions should not exceed 50m³/h.</p>			D

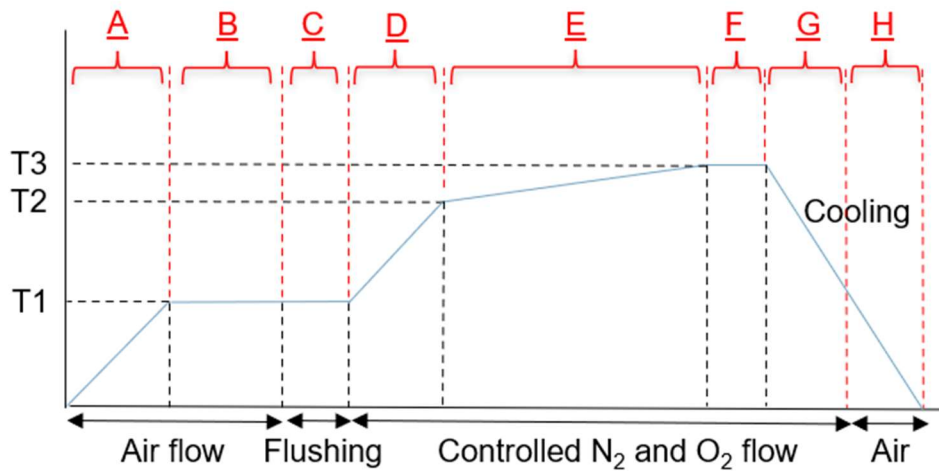
Aspect "Continuous furnace system - Dimensions and specifications"		Remarks for score (in case of preference)	Max. Score	Method of validation
Preference 8.1.8	<p>The nitrogen consumption of the continuous furnace system is below/is lower than 50 m³/h.</p> <p>Describe how this preference will be implemented/achieved.</p> <p>The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>	<p>For every 10 m³/h reduction in N₂ consumption; 7 points, meaning:</p> <p>< 40 m³/h. = 7 pnt < 30 m³/h. = 14 pnt < 20 m³/h. = 21 pnt < 10 m³/h. = 28 pnt</p>	28	D
Requirement 8.1.9	<p>If other utilities and/ or supporting apparatuses are required in addition to the ones specified above they should be listed, With the required flows, sizes and/or dimensions</p>			D
Requirement 8.1.10	<p>The floor loading should not exceed 500kg/m². The weight of the continuous furnace system can be distributed over a larger area.</p> <p>Please describe your proposed solution. The entire answer should be no more than three (3) A4 pages. If the answer exceeds three (3) A4 pages, the additional pages will be disregarded.</p>			D
Requirement 8.1.11	<p>For installation: Individual segments should fit through a door opening of 1.79m in width, 2.0m height and 2.5m in length.</p>			D
Requirement 8.1.12	<p>If an installation box / E-cabinet is used it should not exceed the following dimensions: 3.0m (length) x 0.75m (width) x 2.5m (height). Requirement 8.1.11 applies also for the E-cabinet.</p>			D
Preference 8.1.13	<p>E cabinet with a maximum size of 1.7m (l) x 1.25 (w) x 2.5m (h).</p>	Binair: yes/no	21	D
Requirement 8.1.14	<p>Installation of all components of the furnace has to be carried out by the supplier; in a dialogue with TNO</p> <p>The assembly of the continuous furnace with all it's components is the responsibility of the manufacturer at location.</p>			D / T

8.2 Aspect "Heating & atmosphere"

The heating procedure which the continuous furnace system should be able to run is depicted in the below Scheme 1.

In this procedure a multitude of steps are followed (A until G) in which temperature and/or atmosphere are changed. Each individual segment (A-G) will be listed in the requirements within this paragraph.

All mentioned temperatures are temperature measured on the glass. As part of the acceptance of the continuous furnace system, the temperature will be measured by placing glass panels of the required sizes in the continuous furnace system and measuring its temperature. Within the following list of requirements and/or preferences (8.2.1 - 8.2.12) all segments with their specifics are addressed.



Scheme 1: temperature profile

Segments C-G are performed under a controlled O₂ (10-150 ppm) atmosphere. To reach this atmosphere nitrogen and pressurised air should be mixed prior to insertion into the continuous furnace system. The nitrogen which is provided at our location has the following specifications:

- Purity of nitrogen > 99.9 vol%
- Oxygen < 5 ppmv
- Carbondioxide < 5 ppmv
- Hydrogen < 3 ppmv
- Dewpoint < -60 °C

The inlet pressure of the nitrogen will be ≤ 3.5 bar.

Aspect "Continuous furnace system- heating & atmosphere"		Remarks for score (In case of preference)	Max. Score	Method of validation
Requirement 8.2.1	Homogeneity of the temperature distribution on the surface of the glass should not vary more than 5°C from the programmed temperatures during all stages of the curing cycle, except in cooling section H when the temperature is below 200°C. (determination during FAT by attaching 9-12 thermocouples equally divided over the surface of the glass). During FAT a 1000mm X 1000mm X 2.0-6.0mm optiwhite, low-iron, soda-lime floatglass. will be used.			D + T
Requirement 8.2.2	Repeatability; during continuous operation of the oven all programmed and desired parameters should be achieved and be reproducible.			D+T

Aspect "Continuous furnace system- heating & atmosphere"		Remarks for score (In case of preference)	Max. Score	Method of validation
Preference 8.2.3	<p>Temperature measured at multiple positions on the glass plate during curing should not deviate more than 3°C from the programmed temperature during all stages of the curing cycle, except in the cooling section for when the temperature is below 200°C. (determination by attaching thermocouples to the surface)</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>	Binair: yes/no	105	D +T
Requirement 8.2.4	<p>The atmosphere within the continuous furnace system has to be homogeneous and not deviate more than 5ppm of the set O₂ concentration when an O₂ concentration (ranging between 10 and 150ppm) is specified in the process (this excludes segment A and B of scheme 1).</p>			D
Requirement 8.2.5	<p>O₂ concentration is measurable during operation of the continuous furnace system, with an accuracy ≤1 ppm and should be measured from segment C-G; with read-out.</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>			D
Requirement 8.2.6	<p>Segment A-B from scheme 1; Heating under air from ambient (18-26°C) to a set temperature of maximum 300°C with a controllable and programmable heating rate of 0.1-0.45°C/s with intermittent dwell times.</p>			
Requirement 8.2.7	<p>Segment C (= transporting from segment B to D), scheme 1; at a set temperature ranging between ambient and ≤ 300°C Wherein the time should be shorter than 1 minute; Within this timeframe the atmosphere is changed from oxygen rich to a set atmosphere containing between 10-150ppm of O₂ in N₂ rich atmosphere (using nitrogen with above-described quality). The O₂ should be adjustable (in segment D) to a set ppm at a ranging between 10-150ppm with a tolerance of 5ppm to the set O₂-concentration. Requirements 8.2.4 and 8.2.5 do not apply during the duration of segment C.</p>			D+T

Aspect "Continuous furnace system- heating & atmosphere"		Remarks for score (In case of preference)	Max. Score	Method of validation
Preference 8.2.8	<p>Segment C (= transporting from segment B to D), scheme 1; at a set temperature ranging between ambient and $\leq 300^{\circ}\text{C}$. Wherein the time is as short as possible; Within this timeframe the atmosphere is changed from oxygen rich to a set atmosphere containing between 10-150ppm of O_2 in N_2 rich atmosphere (using nitrogen with above-described quality). The O_2 should be adjustable to a set ppm at a ranging between 10-150ppm with a tolerance of 5ppm to the set O_2-concentration. Requirements 8.2.4 and 8.2.5 do not apply during the duration of segment C.</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>	For every 5 second shorter than 1 minute 7 points are awarded.	56	D+T
Requirement 8.2.9	Segment D-F from scheme 1; Heating from ambient to a set temperature of maximum 550°C at a heating rate programable and measurable between $0.06\text{-}0.45^{\circ}\text{C/s}$. With multiple (> 5) intermittent programable dwell-times in a set O_2 atmosphere containing between 10-150ppm of O_2 (using nitrogen with above-described quality). The O_2 should be adjustable to a set ppm at a ranging between 10-150ppm with a tolerance of 5ppm to the set O_2 -concentration.			D+T
Requirement 8.2.10	<p>Segment G from scheme 1: cooling. Samples can be homogenous (requirement 8.2.1) cooled from 550°C to 200°C under set atmosphere containing between 10-150ppm of O_2 in N_2 at a cooling rate of at least $\geq 0.1^{\circ}\text{C/s}$.</p> <p>Segment H: The cooling from 200°C towards ambient conditions can be performed under air (In or outside furnace), whilst maintaining safe operation conditions</p>			D+T
Preference 8.2.11	<p>Segment G: A faster, homogeneous ((requirement 8.2.1) and programmable cooling rate ($0.1^{\circ}\text{C/s}\text{-}0,5^{\circ}\text{C/s}$) from 550°C to 200°C which is homogenous.</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than two (2)A4 page. If the answer exceeds two (2) A4 pages, the additional pages will be disregarded.</p>	Binair: yes/no	105	D+T
Preference 8.2.12	Read out of surface temperature from substrate in real time.	Binair: yes/no	105	D+T

Aspect "Continuous furnace system- heating & atmosphere"		Remarks for score (In case of preference)	Max. Score	Method of validation
Preference 8.2.13	<p>To introduce forming gas (5%Hydrogen in Nitrogen) or air in segments C/D-F. When using forming gas: The combined atmosphere within the continuous furnace system should contain $\leq 1\%$ Hydrogen in N_2 atmosphere (measurable and controllable).</p> <p>Describe how this preference will be implemented/achieved. The entire answer should be no more than one (1) A4 page. If the answer exceeds one (1) A4 pages, the additional pages will be disregarded.</p>	Binair: yes/no	21	D

8.3 Aspect "General requirements"

Aspect "General requirements"	
Requirement 8.3.1	The continuous furnace system must be newly built, first-hand system.
Requirement 8.3.2	All electronic components and the continuous furnace system as a whole are CE marked, a declaration of conformity must be provided.
Requirement 8.3.3	The operation of all controls are interlocked to prevent damage to the continuous furnace system and for safety of the operator
Requirement 8.3.4	All documentation, software commands and read-out must be written in the English or Dutch language.
Requirement 8.3.5	<p>Documentation must include at least the following:</p> <ul style="list-style-type: none"> • Installation documentation (this includes for instance relevant STEP-files of interfaces, fitting diameters, electrical connections, floor load, required space for transportation, EMC fields, hoisting points etc.) • Instruction manual • Maintenance manual including all required technical documentation for Preventive and Corrective Maintenance, including relevant STEP-files and "as built" drawings. • Quick- start guide • P&ID of the system • Safety measures and their implementation • Certificates and manuals for all third-party hardware that is part of the continuous furnace system <p>All the documents should be delivered digitally in English or Dutch and are available during FAT.</p>
Requirement 8.3.6	<p>Certificates The supplier shall document all the relevant certificates.</p> <p>TNO requires at least:</p> <ul style="list-style-type: none"> - Calibration certificates (if applicable) - Specifications and manuals of equipment <p>Delivery of documentation is expected during FAT.</p>
Requirement 8.3.7	The warranty on the continuous furnace system and system components has to be at least 24 months as stated in the General Purchasing Conditions TNO (Appendix C03), starting after the SAT (onsite acceptance and test period) of the continuous furnace system by TNO.

Aspect "General requirements"	
Requirement 8.3.8	The Tenderer shall maintain an inventory of common spare parts that may otherwise cause system failures. Describe what type of parts will be kept in stock.
Requirement 8.3.9	The guaranteed availability of all system parts has to be at least 10 years.
Requirement 8.3.10	Instruction of personnel - training A minimum of 3 TNO employees will be trained on the system to operate the system, firstly at delivery and secondly after 3 months of operation.
Requirement 8.3.11	Instruction of personnel - maintenance A minimum of 3 TNO employees will be trained on preventive and corrective maintenance.
Requirement 8.3.12	The factory acceptance test (FAT) should be carried out at the premises of supplier.
Requirement 8.3.13	A test protocol for the factory acceptance test (FAT) will be agreed after Contract Award but before delivery of the continuous furnace system to Brightlands Materials Center (see also paragraph 2.2.23). Tenderer must submit a draft test protocol for the factory acceptance test with its Tender.
Requirement 8.3.14	The on-site acceptance test should be carried out at the site of the TNO, after installation and hook-up.
Requirement 8.3.15	A test protocol for the on-site acceptance test (SAT) will be agreed during the verification phase of this Tender (see also paragraph 2.2.24). Tenderer must submit a draft test protocol for the factory acceptance test with its Tender.
Requirement 8.3.16	EMC directive The system shall be able to operate safely and without interference in a normal environment
Requirement 8.3.17	Safety & Ergonomics standards It must be safe to operate the continuous furnace system for a skilled operator without any safety issues.

8.4 Aspect "Maintenance/services"

Aspect "maintenance/services"	
Requirement 8.4.1	Service during warranty period In case of system failure during warranty period TNO can contact the supplier by e-mail or phone on working days. The supplier will respond and propose a solution to TNO within 24 hours (during working days), and guarantees a maximal on-site response time of three (3) working days, for maintenance, troubleshooting, and/or repair in case of system failures.
Requirement 8.4.2	Service department Tenderer must have a European service department that has a high level of competence in troubleshooting the supplied equipment, by telephone assistance, or, in the case of complex failures, by a service visit. At least 2 persons in the service organization must be able to carry out such field repairs. To reduce down time, Tenderer keeps a supply of common replacement parts (requirement 8.3.8). Tenderer must be able to supply telephone assistance through a service hotline. Tenderer has a response time of no more than 3 working days outside the warranty period. Provide a description and a reference of the service department so that it is clear that it meets the requirements.

8.5 Aspect "Trial test on-site"

TNO is constantly striving for the best possible way to conduct research and therefore needs instruments on which it can rely. The technology TNO is asking for in this tender is not new in itself, but the combination of technology and the materials to be tested are not so common. Therefore TNO would like to have an on-site trial test of the complete continuous furnace system if available. The on-site trial test must take place in the week 2 or week 3 (2022). The exact date will be set in consultation with the supplier.

Aspect "trial test on-site"		Remarks for score (In case of preference)	Max. Score
Preference 8.5.1	<p>To do an on-site trial test, in a (semi-) continuous furnace system which can operate as described in requirement 8.2.8: Segment D-F from scheme xx; Heating from ambient to a set temperature of maximum 550°C at a heating rate programmable and measurable between 0.1-0.35°C/s. With multiple (> 5) intermittent programmable dwell-times in a set N₂/O₂ atmosphere containing between 10-150ppm of O₂.</p> <p>Tests to be demonstrated during on-site trial testing will be performed in the presence of the TNO staff, includes:</p> <ul style="list-style-type: none"> - homogeneity achieved of the temperature on a glass plate of minimum size 20 x 20 cm² and 3.0 mm thickness, - Easiness of operating the system/user friendliness of the system - Safety in operating such system <p>Tenderer will be provided with the required substrates by TNO.</p>	See table 6.1.2	57

8.6 Aspect "Software"

Aspect "Software"		Remarks for score (in case of preference)	Max. Score	Method of validation
Preference 8.6.1	<p>As the system will be used by multiple users, a user-friendly system is important for efficient operation by users. Please describe the user-friendliness of the control software and explain the capabilities of the software and how it is designed. If possible, provide some screenshots of the software.</p> <p>Describe or illustrate at least the following aspects:</p> <ul style="list-style-type: none"> - the recognisability of elements (such as text, images and interactions with the system) to the user; - the way the software supports intuitive operation; - the way the system helps prevent the user from making a mistake; - the versatility of the software <p>The answer will be assessed on the basis of the following key elements: no score will be given for the individual elements - the preference will be assessed in its entirety:</p> <ul style="list-style-type: none"> - Completeness, consistency and comprehensiveness; - Degree of user-friendliness (use of defined 	See table 6.1.2	10	D +T

Aspect "Software"		Remarks for score (in case of preference)	Max. Score	Method of validation
	<p>calculations, use of customized channels, effort it takes to set up the system, ease of use in general).</p> <p>The answer to this preference must not exceed three (3) A4 pages excluding screenshots and other figures.</p>			
Requirement 8.6.2	<p>Operating systems become obsolete and their security updates end.</p> <p>The Tenderer will actively provide TNO with the necessary operating system software updates, to fix, among others, software bugs. These updates shall be provided free of charge to TNO for a period of at least ten (10) years after SAT.</p>			

8.7 Aspect "Terms and conditions of payment"

Aspect "terms and conditions of payment"	
Requirement 8.7.1	<ul style="list-style-type: none"> ▪ 30% at order, and after receipt of a bank guarantee covering 60% of the total price; ▪ 30% after approval by TNO of the Factory Acceptance Test (FAT), in the presence of a TNO employee and approved by TNO Management and TNO Procurement. ▪ 20% after delivery at location TNO Holst Centre of the total system. At this moment TNO will return the bank guarantee. ▪ 20% after installation and commissioning On-site and Site Acceptance Test (SAT) including test periods, approved by TNO Management and TNO Procurement. <p>The Tenderer to whom the Contract will be awarded must provide a bank guarantee to TNO covering at least 60% of the total price. TNO must have the right to draw the bank guarantee in any and all cases where 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 Management and TNO Procurement.</p>

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 Tender Document (ESTD)
- *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 Tender Document (ESTD)
- *Where necessary, a copy of this form should be provided for each Third Party on whose resources the Tenderer intends to rely.*
- Appendix A04** Schedule of Prices and Costs
- Appendix A05** Conformity list Programme of Requirements
- Appendix A06** Notification of preferences/answers to questions
- Appendix A07** Optional maintenance/services contract

B) To be submitted on request (evidential documents)

- Appendix B01** Self-declaration with regard to subcontractor(s) to be deployed during performance of Contract
- *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 Terms and Conditions of Procurement, June 2014

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.