

BENELUX GENERAL SECRETARIAT  
Rue de la Régence/Regentschapsstraat 39  
Brussels 1000

NEGOTIATED PROCEDURE WITHOUT PRIOR PUBLICATION FOR SUPPORT FOR RESEARCH ON A  
'CROSS-BORDER HYDROGEN BACKBONE IN THE BENELUX AND NEIGHBOURING REGIONS'  
SPECIFICATION No. 2022/01/Benelux-Hydrogen

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## SECTION 1: General Information

### 1.1. Introduction

The present tender has as its object a call for proposals for research as part of the Benelux Union to ‘develop a cross-border hydrogen backbone in the Benelux region and the neighbouring regions’, as part of its process of regional integration towards a European energy transition.

This service contract is commissioned by the Benelux General Secretariat and funded by the Belgian Federal Government, the Walloon Region, The Netherlands and Luxembourg.

### 1.2. Contracting authority

The **Benelux Union** is an intergovernmental partnership based on a Treaty (1958 and renewed in 2008) between Belgium, the Netherlands and Luxembourg, and subordinate regulations. Active on two core themes (1) internal market and economy and (2) security and society, it aims to stimulate cross-border sustainable and digital cooperation between the countries and to play a pioneering and driving role within the European Union. The Benelux General Secretariat, based in Brussels, lies at the heart of the Benelux Union.

The **Benelux General Secretariat** serves as a secretariat for the Benelux Committee of Ministers, the Council of the Union and the various Commissions and Working Groups, including the Benelux Hydrogen working group. Based in Brussels, it is the central hub of Benelux Union activities.

The contracting authority is the Benelux Union, represented by

Mr Alain De Muysen,  
Secretary General of the Benelux Union,  
Rue de la Régence–Regentschapsstraat 39  
1000 Brussels

Additional information on the content aspects of the tender is available only on request by e-mail to the Directorate for Internal Market and Economy: Jan Molema, Director (Secretariat: [b.wauters@benelux.int](mailto:b.wauters@benelux.int)). Additional information on the procedure for the contract of the tender is available only on request by email to Dorian Pycke, [d.pycke@benelux.int](mailto:d.pycke@benelux.int).

Although the Benelux Union acts as contracting authority, it is only responsible for the general coordination of the tender and subsequently the contract. The project is financed by the funded by the Belgian Federal Government, the Walloon Region, The Netherlands and Luxembourg (i.e. hereafter ‘the financial partners’), which will make the necessary funds available.

### 1.3. Subject of the contract

#### 1.3.1. Clarification of the context of the contract

The Benelux ‘hydrogen’ working group is a group of representatives of the relevant ministries on hydrogen of the Benelux-countries, North-Rhine Westphalia and Hauts-de-France. The working group has been exchanging since 2019 on the hydrogen developments in the different countries and regions. The Benelux-countries co-signed in May 2020 a [Joint political declaration](#) of the Pentalateral Energy Forum on the role of hydrogen in decarbonising the energy system in Europe. In October 2020, a [Joint Declaration](#) of the Benelux Prime Ministers during the Summit highlighted the importance to analyze the needs for future

dedicated hydrogen infrastructure. In the meantime, respective hydrogen strategies and roadmaps have been elaborated and published in [Belgium](#) (including [Flanders](#)), the [Netherlands](#), [Luxembourg](#) and in the neighbouring regions like [Hauts-de-France](#) and [North Rhine-Westphalia](#).

In March 2021, the Benelux Directors General for energy instructed the Benelux Secretariat to come forward with a study proposal to explore the ecosystem for a Benelux hydrogen backbone. The Benelux 'Hydrogen' working group elaborated a study description (see attached).

### **1.3.2. Subject of the tender**

With this study the Benelux 'hydrogen' working group would like to build on previous work and broaden and deepen the analysis to work towards a cross-border hydrogen market and backbone by 2050, with intermediate steps in 2030 and 2040.

The aim of this exercise is to facilitate cross-border cooperation, within the Benelux and with its neighboring regions (Hauts-de-France, Grand Est, North Rhine-Westphalia, Saarland, Rhineland-Palatinate, Lower Saxony), in matters related to hydrogen and its derivatives<sup>1</sup>. The report should give a comprehensive overview, of the quantification and location of potential demand and supply (including both domestic production and import) of hydrogen and its derivatives based on established energy policies. In a second step, it should also anticipate the infrastructure needs for import, transport, storage and distribution.

The report shall be based on existing (long-term) scenarios, national/regional hydrogen strategies and independent academic studies as well as the accompanying discussion among experts and stakeholders, which will have to be organised in the formats of meetings and workshops. The outcomes of these contact moments as well as the state of play are to be reflected in progress and interim reports. The contractor shall then set out its findings in a draft final report – with the support of graphics and visuals - to be presented to the Benelux 'Hydrogen' working group. The contractor shall then finalise the draft final report into a final report, taking into account any remarks received.

The final report will identify obstacles and opportunities and formulate policy recommendations, which will be presented to the relevant Ministers and serve as a decision support tool.

### **1.4. Procurement procedure**

A one-stage procurement procedure (so without a separate selection phase) has been chosen, whereby any interested contractor may submit a bid in response to the call to tender. In evaluating the bids, the contracting authority may negotiate on all aspects of the bids with a view to improving the initial bids or any subsequent bids. The choice for a negotiated procedure without prior publication is in compliance with article 14 of the Financial Regulations of the Benelux General Secretariat.

### **1.5. Rules applicable to the tender and the contract**

The applicable rules for this tender and the subsequent contract are the specifications, including annexes, the selected bid and the Financial Regulations of the Benelux General Secretariat. The candidates may request a copy of the Financial Regulations from the contracting authority. In case of contradiction between the specifications and the bid selected, the specifications shall take precedence.

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<sup>1</sup> Renewable hydrogen can be converted to "derivatives", e.g. ammonia, methanol or synthetic kerosene. These derivatives may prove more appropriate depending on a given use case, e.g. for long distance transport of energy, maritime shipping, aviation or chemical industries.

**SECTION 2: Procedure for awarding the contract****2.1. General conditions for the award procedure****2.1.1. Language**

The procedure for awarding the contract is conducted in English. The candidate shall use only English in his oral and written interactions with the contracting authority.

Documents submitted by the candidate to the contracting authority must be in English unless:

- otherwise stated in these specifications or by the contracting authority; or
- they are official documents which are not available in English (e.g. certificates of compliance). These documents may be submitted in the original language.

Nevertheless, the contracting authority reserves the right to require a translation (official to the extent desired) of any documents submitted in a language other than English in such cases. The candidate shall bear the cost of such translation.

**2.1.2. Confidentiality**

The candidate is obliged to treat information received from the contracting authority or from other parties involved in the procedure or otherwise acquired in the course of the award procedure as strictly confidential. Unless necessary for the preparation of the bid and/or the proper execution of the contract, the candidate may not under any circumstances provide, share, hand over or otherwise disclose this information to any third party without the prior written consent of the contracting authority.

Candidates shall also refrain from disclosing (parts of) their bid or information about their involvement in the award procedure to third parties, without prior consultation with and approval from the contracting authority.

**2.1.3. Costs**

The candidate shall bear all costs it may incur in the course of the award procedure and shall not be entitled to reimbursement for the costs of participating in the procedure.

**2.1.4. Termination or suspension of the award procedure**

The contracting authority may decide at any time to discontinue, suspend or change the award procedure, for example – but without limiting this right to these cases – if the necessary funds are not obtained from the financial partners (*cf.* article 1.2.); if there is no reasonable chance that agreement can be reached by conducting the award procedure; if the contracting authority has come into the possession of new information; or if other legal, financial, administrative or other circumstances make it impossible or difficult to fulfil the contract.

## **2.2. Submission of bids**

### **2.2.1. Right to submit bids and manner of submission**

Each candidate may submit only one bid for the contract.

### **2.2.2. Legal form of the candidate**

Offers can be submitted either by one legal entity or by a combination of undertakings, taking the form of a(n) (temporary) association.

The undertaking or association submitting an offer is referred to above and further as the "candidate".

If an association submits an offer:

- the offer must be signed by all members of the association;
- none of the members may find themselves in a ground for exclusion (cf. article 2.5.1.);
- (unless mentioned otherwise) all obligations of a single entity which acts as candidate, also apply to all individual members of the association which acts as candidate;
- the offer identifies the member of the association that acts as contact point of the contracting authority. The contracting authority sends notifications only to the contact person of the candidate in the context of this award procedure;
- each member of the association is jointly and severally bound towards the contracting authority.

Candidates/ associations, are, in principle, not allowed to change their composition during the award procedure. In case such changes would be made or planned, the candidate must immediately notify the contracting authority. Nevertheless the contracting authority has the right (but is not obliged) to allow such changes, if the following conditions are met:

- the change is necessary in view of reasons made plausible by the candidate;
- the competitive position of the other candidates is not undermined;
- subsequent to the change, the selection criteria are still met, and none of the exclusion grounds are applicable;
- all new members must declare themselves jointly and severally liable to the contracting authority for the performance of the candidate's obligations.

Every change request must be substantiated with the necessary documents. These documents must allow the contracting authority to assess the impact of the change in an informed way.

### **2.2.3. Submission of bids**

Communication and exchanges of information between the contracting authority and the candidates, including the submission and receipt of bids, shall, at all stages of the procurement procedure and unless otherwise decided by the contracting authority, take place via electronic communication as described below.

Bids must be signed electronically by a person or the persons authorised to enter into commitments on behalf of the candidate. If an association submits an offer, it must be signed by the competent person(s) of each member of the association.

The candidate shall send his bid to the following e-mail address: [hydrogen@benelux.int], which accepts emails with a maximum size of 140 Mb. Bids are collected in a locked e-mail inbox. The email inbox will be opened only after the deadline for submission of bids, as determined in the following paragraph.

The deadline for the submission of bids is 06/05/2022 at 17:00 CEST. Bids not received by the contracting authority by that time may be rejected by the contracting authority without further attention.

## 2.3. Bids

### 2.3.1. Information to be included in the bid

The candidate shall use the attached bid form.

The bid is prepared in English. For attachments to the Tender, see section 2.3.3.

The candidate shall clearly indicate in his bid which information is confidential and/or relates to technical or commercial secrets and may therefore not be disclosed by the contracting authority.

The following information at least will be given in the bid:

- the overall price in words and in figures (excluding VAT);
- the signature of the person(s), as applicable, who are empowered to sign the bid and enter into legal commitments on behalf of the candidate;
- the capacity of the person or persons, as the case may be, signing the bid;
- the date on which the aforementioned person or persons, as the case may be, signed the bid.

The candidates are reminded that the Benelux General Secretariat is not subject to VAT.

### 2.3.2. Period of validity of the bid

The candidates shall remain bound by their bid for a period of four months, commencing the day after the deadline for submission of bids set out in these specifications.

### 2.3.3. Documents to be enclosed with the bid

Candidates shall attach to their bid:

- all documents requested in the context of the selection and award criteria, including:
  - the documents requested in articles 2.5.1.3, 2.5.2.1 and 2.5.2.2;
  - a description of the working methodology;
  - the information requested in article 2.6.2.3. for the persons involved in the performance of the service and the manner in which they will be used in the performance;
  - the proposed schedule for the performance of the service;
- the articles of incorporation and any other useful documents showing the authority of the signatories to the bid.

### 2.3.4. Pricing

The price for the contract shall be a **maximum of €49,999.00 (forty-nine thousand nine hundred ninety-nine EURO)** excluding VAT. This sum includes travel and miscellaneous expenses.

All prices given in the bid form must be expressed in EURO.

This is a contract at an overall and capped price, which must cover all aspects of the performance of the contract.

The contractor shall be deemed to have included all possible costs applicable to the services in its overall price, with the exception of VAT.

No price review shall be possible for the present contract, nor can candidates invoke unforeseeable circumstances (whether or not related to COVID-19).

## 2.4. Procedure

### 2.4.1. Questions and Answers

Candidates may ask questions about these specifications. These questions should be submitted **in writing, by e-mail**, no later than 22/04/2022 at 17:00 CEST (i.e. two weeks before the final deadline for submission of bids) to [y.jarine@benelux.int](mailto:y.jarine@benelux.int)). The candidate must be able to demonstrate that the questions were submitted in good time.

The contracting authority shall endeavour to answer the questions no later than one week before the deadline for submission of bids.

The contracting authority will only respond to questions of a general nature which may lead to further clarification of the contents of this specification. Questions or comments that are not merely intended to clarify the specifications or to provide additional information and which involve the discussion or negotiation of certain parts of the specifications, or questions submitted after the deadline, will in principle not be answered.

The candidate may submit questions/comments to the contracting authority only once. Questions/comments will only be answered (in writing) if relevant to the contract.

If a candidate does not ask any questions, everything is deemed to be clear to that candidate. The contracting authority reserves the right to consider questions marked as confidential by a selected candidate as non-existent. The same applies to questions where a request is made not to disclose the answers to other candidates.

### 2.4.2. Submission of bids

Bids must be submitted no later than **06/05/2022 at 17:00 CEST** in the manner described in article 2.2. Article 2.3.3. specifies the information and documents which, inter alia, must be submitted, including, but not limited to, information relating to the selection and award criteria.

### 2.4.3. Evaluation of bids

#### 2.4.3.1. Concerning selection

In the first instance, the contracting authority will examine the reliability and suitability of the candidates for the performance of the contract on the basis of the criteria set out in the specifications (see below).

It will examine in turn:

- Whether the candidates fall within any of the exclusion cases (see article 2.5.1.);
- Whether the candidates meet the qualitative selection criteria (see article 2.5.2.).

#### 2.4.3.2. Concerning the award

##### 2.4.3.2.1. Check for completeness and regularity

The contracting authority will next evaluate the completeness and regularity of the bids submitted. In particular, the contracting authority will evaluate whether the submitted bids include all documents described as required in this specification and whether such bids comply with the formal requirements of the specification.

The contracting authority will also evaluate whether the bid deviates from the specifications in such a way as to give the candidate a discriminatory advantage, distort competition, prevent the evaluation of the bids or comparison with other bids, or render the candidate's commitment to perform the contract under the terms of these specifications non-existent, incomplete, or uncertain.

The contracting authority may, without being obliged to do so, offer a candidate the opportunity to correct its bid if it contains substantial or insubstantial irregularities.

The contracting authority reserves the right – without obligation – to invite all selected and regular candidates to present their bid (individually) to the contracting authority.

#### 2.4.3.2.2. Evaluation on the basis of the award criteria

The contracting authority will – if necessary after the aforementioned correction – evaluate complete and regular bids using the award criteria described in article 2.6.

The contracting authority will then decide whether to award the contract immediately or to start negotiations with one or more of the candidates.

In the first case (immediate award of the contract), articles 2.4.4. to 2.4.6. shall not apply and the contract can be awarded immediately in accordance with article 2.4.7. Candidates are therefore expected to already have included in their bid all the elements required and necessary for the performance of the contract, including their best prices.

In the second case (negotiations), the contracting authority may limit the negotiation phase to, in principle, three candidates.

However, if it is determined:

- that the differences between the three best bids and the others are very small, the contracting authority may increase the number of candidates invited to participate in the negotiations;
- that there are significant differences between the three best bids, the contracting authority may further limit the number of candidates invited to participate in the negotiations.

If the number of candidates is less than three, the award procedure may still be continued with this smaller number of candidates.

#### **2.4.4. Negotiations (optional)**

If the contracting authority decides to initiate negotiations, these will be held with a view to optimising the bids submitted (i.e. to achieve an overall price-quality improvement in view of the award criteria described in article 2.6.).

Negotiations may take place verbally, at negotiation meetings (possibly online), or in writing. The contracting authority may raise any issue it wishes during negotiations. The contracting authority is free at all times to decide on which subjects it wishes to negotiate. The contracting authority is not obliged to adopt suggestions from the accepted candidates.

The contracting authority may organise multiple negotiation sessions.

During negotiations, the contracting authority may ask the candidates to elaborate on certain parts of their bids. The contracting authority also reserves the right to modify the specifications when it is useful or necessary (i) to improve the overall price-quality of the bids, or (ii) to optimise the technical specifications.

#### **2.4.5. Submission of amended bids (optional)**

Upon completion of negotiations, candidates will be invited to submit their amended bids.

The deadline and method of submission will be described in the invitation to submit the amended bids.

## **2.4.6. Evaluation of amended bids (optional)**

### *2.4.6.1. Check for completeness and regularity*

The contracting authority will evaluate the completeness and regularity of the amended bids submitted. In particular, the contracting authority will evaluate whether these amended bids include all documents described as required in this specification and whether these bids comply with the formal requirements of the specification.

The contracting authority will also evaluate whether the amended bid deviates from the specifications in such a way as to give the candidate a discriminatory advantage, distort competition, prevent the evaluation of the amended bids or comparison with other amended bids, or render the candidate's commitment to perform the contract under the terms of these specifications non-existent, incomplete, or uncertain.

The contracting authority may, without being obliged to do so, offer a candidate the opportunity to correct his amended bid if it contains substantial or insubstantial irregularities.

### *2.4.6.2. Evaluation on the basis of the award criteria*

The contracting authority will – if necessary after the aforementioned correction – evaluate the adjusted complete and regular bids using the award criteria described in article 2.6. On the basis of this evaluation, the contracting authority will prepare a ranked list of the candidates.

## **2.4.7. Awarding and conclusion of the contract**

The contract will be awarded to the candidate whose bid (adjusted, as the case may be), after evaluation on the basis of the award criteria described in article 2.6.

The contract will be concluded through express confirmation by the contracting authority to the candidate whose bid is chosen that the contract has not only been awarded but also concluded. Until that moment the contracting authority is in no way bound to conclude the contract and can freely decide to stop the tender, amend it, etc...

## **2.5. Selection of candidates**

The mere act of submitting a bid constitutes an implicit sworn declaration by the candidate that he does not meet any of the grounds for exclusion listed below.

### **2.5.1. Grounds for exclusion**

#### *2.5.1.1. Mandatory grounds for exclusion*

At any stage of the award procedure, a candidate who, by court decision with the force of res judicata, has been convicted of one of the following offences shall be excluded from access to the procedure:

1° participation in a criminal organisation as referred to in article 2 of Council Framework Decision 2008/841/JHA of 24 October 2008 on the fight against organised crime;

2° involved in bribery as referred to in article 3 of the Convention on the fight against corruption involving officials of the European Communities or of the Member States of the European Union or in article 2.1, of Council Framework Decision 2003/568/JHA of 22 July 2003 on combating corruption in the private sector;

3° fraud as referred to in article 1 of the Convention on the Protection of the European Communities' Financial Interests;

4° terrorist offences or offences related to terrorist activities as referred to in the Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism, or inciting, aiding or abetting or attempting to commit such a crime or offence as referred to in the said Directive;

5° money laundering or financing terrorism as referred to in the Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purpose of money laundering or terrorist financing;

6° child labour and other forms of trafficking in persons as referred to in article 2 of Directive 2011/36/EU of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629/JHA;

7° employment of third-country nationals illegally residing in the country.

Candidates may also be excluded from access to the award procedure at any stage if they have not fulfilled their obligations concerning payment of tax or social security contributions, unless:

1° they do not owe contributions in excess of €3,000;

2° they have obtained deferred payment for that debt and strictly observe the repayment schedule.

#### *2.5.1.2. Optional grounds for exclusion*

The contracting authority may exclude a candidate at any stage of the award procedure in the following cases:

1° where the contracting authority demonstrates by any appropriate means that the candidate has failed to meet his statutory environmental, social or labour obligations under European Union law, national law or collective bargaining agreements;

2° where the candidate is in a state of bankruptcy or liquidation, has ceased trading, is undergoing judicial reorganisation, or has filed for bankruptcy, is the subject of liquidation or judicial reorganisation proceedings, or is in an analogous situation following similar proceedings under other national legal provisions;

3° where the contracting authority can demonstrate, by any appropriate means, that the candidate has committed serious professional misconduct that could call into question his integrity;

4° where the contracting authority has sufficiently plausible indications to be able to conclude that the candidate has committed acts, concluded agreements or made arrangements aimed at distorting competition;

5° where a conflict of interest cannot be effectively remedied by other less drastic measures;

6° where, due to the candidate's previous involvement in the preparation of the procurement procedure, a distortion of competition has occurred which cannot be remedied by less drastic

measures;

7° where the candidate has shown significant or persistent deficiencies in the performance of a substantial requirement of a previous public contract, a previous contract with a contracting authority or a previous concession contract and this has led to the taking of ex officio measures, damages or other similar sanctions;

8° where the candidate has been guilty of serious misrepresentation in providing the information necessary to verify the absence of grounds for exclusion or compliance with the selection criteria, or has withheld information, or was unable to produce supporting documents for this purpose;

9° where the candidate has attempted to unlawfully influence the contracting authority's decision-making process, to obtain confidential information that may give him unlawful advantages in the procurement procedure, or to provide culpably misleading information that may have a significant impact on exclusion, selection and award decisions.

#### *2.5.1.3. Documents to be attached*

The candidate must attach the following documents to his bid:

1. An extract from the criminal record in the name of the candidate (legal entity);
2. Documentary evidence that the candidate is up to date with its payments of social security contributions;
3. Documentary evidence that the candidate is up to date with payments of taxes and duties;
4. An attestation that the candidate is not in a state of bankruptcy.

The documents referred to above shall be considered recent if they are less than three months old on the final date for the submission of the first bid.

Candidates must attach all of the aforementioned certificates and extracts or equivalent documents issued by the country concerned (social security statement, tax statement, criminal record extract, attestation of solvency) to their bids. Where a document or attestation is not issued in the country concerned or this does not provide adequate evidence for all grounds for exclusion, a solemn declaration by the person concerned may be added as a replacement (for that aspect alone).

When the offer is submitted by an association (see article 2.2.2), the above-mentioned obligations and related modalities apply to each member (i.e. each undertaking) of the association.

### **2.5.2. Qualitative selection**

The candidate is further required to demonstrate, via the documents requested below, that he is sufficiently competent, both financially and technically, to successfully fulfil this contract.

#### *2.5.2.1. Financial capacity*

The candidate must demonstrate sufficient financial capacity to perform the contract.

Compliance with this requirement will be assessed on the basis of:

- The candidate having an annual turnover of at least €90.000 – excluding VAT – for each of the last three completed financial years. Turnover includes the sum reported under code 70 in the financial statements of Belgian companies (full schedule). For financial statements of foreign companies, turnover means the amount to which the company is entitled or expects to be entitled in exchange for goods supplied or services provided.

Evidence to this effect is given by the following documents:

- A statement of the candidate's total sales, for each of the previous three financial years; or
- The financial statements of the candidate for the same three financial years.

When the offer is submitted by an association (see article 2.2.2), the minimum annual turnover can be demonstrated by relying on the annual turnovers of no more than three members of the association.

#### *2.5.2.2. Technical capacity*

The candidate must demonstrate that he has appropriate technical professional competence to perform the contract. If the offer is submitted by an association, the following requirements apply at the level of the association, which means that the members of the association must meet the requirements jointly (and not each separately).

In view of the subject of the contract, the candidate is thus expected to demonstrate the necessary knowledge and experience as follows.

The candidate shall do so by producing a list describing at least one service provided in this context during the last 3 years (maximum 1 double-sided page per reference if multiple), proving its experience in providing scientific consulting to Ministries, preferably multiple projects and in at least one of the Benelux countries (Belgium, the Netherlands and Luxembourg).

At least one of the previously provided services should demonstrate experience with data analysis and in energy (transition) policies and regulatory frameworks, in particular regarding hydrogen, or similar and equivalent.

The candidate demonstrates through the reference(s) it cites that it has the experience required for the aspects described in article 4.1. Only references which are sufficiently relevant to the contract at hand will be considered.

The candidate must provide adequate information about each reference for the contracting authority to be able to evaluate it (including the amount, place and time they were performed).

### **2.6. Award criteria**

The contracting authority shall select a regular bid taking into account the following criteria.

**2.6.1. First award criterion: Price (40%)**

The candidate shall give the overall price in words and in figures (excluding VAT) with a reasonable estimate of materials expenses and personnel costs including daily rates, and an estimated breakdown of expenditures and costs by individual working packages.

The points for the "price" criterion are calculated using the following formula:

$$P = 40 \times \frac{P1}{P2}$$

Where:

- *P* is the number of points awarded to the candidate for the "price" criterion;
- *P1* is the lowest overall price excluding VAT offered by any candidate in a bid under consideration.
- *P2* is the total overall price excluding VAT offered by the candidate whose bid is being assessed.

**2.6.2. Second award criterion: Quality (60%)**

The points awarded for this sub-criterion (in percentage) are assigned as follows:

Each offer is subject to evaluation:

Fail	0
Poor	1
Medium	2
Good	3
Excellent	4

Where :

0 = 0/10 (0%)

1 = 2,5/10 (2,5%)

2 = 5/10 (5%)

3 = 7,5/10 (7,5%)

4 = 10/10 (10%)

The criterion quality is evaluated on the following sub criteria, which must be read in accordance with the description mentioned in the scope of the study (cf. Annex 1):

**2.6.2.1. Working method in view of the topics specified (10%)****2.6.2.1.1. Description**

The candidate provides a description of the approach/strategy he will use for the execution of the contract, thereby taking into account that all of the topics specified in the scope of the study (cf. Annex 1, point 3) should be tackled.

The candidate explains why the working method proposed is the most appropriate working towards the final report. To this end, the candidate may refer to concrete examples from his practice – anonymised if

necessary – of an approach/strategy applied for another client which he would adapt to suit the contracting authority and the present contract.

Furthermore, the candidate's attention is drawn to the fact that a lot of studies are currently being published on hydrogen. As it is important that the working method takes the current state of play into account as well as the discussions currently under way in Europe, the offer should reflect upon these recent studies, thereby indicating which finished or ongoing studies or scenarios could be analysed and how, with the goal of good integration of these projects.

The candidate should also explain how he will make his working method suitable to be applied to the various Benelux member states and to which extent it can be extended to other European member states, keeping the laboratory and forerunner function of the Benelux member states for the rest of Europe in mind.

Furthermore, the candidate must address potential problems he foresees concerning the execution of the research and possible mitigating measures.

#### *2.6.2.2. Planned analysis of scenarios / content (10%)*

##### *2.6.2.2.1. Description*

The candidate should give a planned analysis of the demand, supply and infrastructure potential for hydrogen and derivatives in the Benelux member states and neighbouring regions (Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Grand-Est, Hauts-de-France) by 2050. In addition, the candidate should show the import needs of the Benelux member states and neighbouring regions. The analysis should also draw some conclusions about the development of the scenarios and potential differentiation throughout the time frame of 2030, 2040 and 2050. The candidate specifies how the method allows for an assessment for these different time horizons.

The planned study should provide quantified projections based on clear scenario(s) and the mapping of the different potentials.

In addition, the candidate should describe the existing regulatory framework of (renewable) hydrogen production, transport, storage and usage and examine the favorable framework to foster cross-border hydrogen economy within the Benelux-countries and neighboring regions as well as respective business cases.

The candidate is expected to explain how cooperation between the Benelux member states and neighbouring regions will contribute to a cross-border hydrogen backbone and which main drivers could lead the member states there and which obstacles will have to be dealt with.

#### *2.6.2.3. Technical approach and relational interaction (10%)*

##### *2.6.2.3.1. Description*

Taking into account what is described in the scope of the study (cf. Annex 1, point 4), the candidate has to elaborate briefly on how he will prepare, conduct and follow up the meetings and workshops, fitting in the provided timeframe. The candidate should state and back up his technical ability to organise and conduct video conferences, naming the platforms he has access to, preferably using Microsoft Teams.

The candidate also describes how he will approach the contract from a relational point of view with the

involved partners, being the Benelux Hydrogen working group, other representatives of the Benelux member states, stakeholders and experts who will be involved in the workshops and the General Secretariat of the Benelux Union as contracting authority. In doing so, the candidate clarifies how cooperation with the involved partners should proceed and what is expected of the involved partners. In doing so, the candidate should provide at least an overview/description of:

- a description of the technical tools to be used to interact, present and explain the work to the involved partners (oral presentation, PowerPoint, etc.);
- the time limits within which any oral or written questions from the contracting authority will be answered and clarification of its availability (office opening hours, list of contacts for the candidate by phone/mobile);
- a description of the organization of 1 or 2 workshops based on the non-exhaustive list of stakeholders identified in the study description.

#### 2.6.2.4. *Schedule (10%)*

##### 2.6.2.4.1. Description

The candidate is expected to provide an overview (and justification) of the intended schedule for the contract, with the understanding that the maximum duration of 6 months must not be exceeded (except in the case of exceptions duly justified and motivated by the candidate and approved by the contracting authority).

The candidate's schedule takes into account that it will have to organise various meetings as well as workshops. And that additionally the candidate needs to submit slide decks, progress and interim reports and one draft final report. The draft final report should be presented to the Benelux Hydrogen working group. The schedule should reflect and take into account that this research takes place in a multilateral and multistakeholder, as well as a political, context, allowing for alignment, coordination, approval procedures and flexibility.

#### 2.6.2.5. *Composition and experience of the team (10%)*

##### 2.6.2.5.1. Description

The candidate presents his team structure, in which one person is nominated as project leader. This must include: the people who will be involved in the preparation, performance and follow-up for the contract.

The candidate identifies the profiles and adds CVs (at least: name, language skills, number of years of relevant experience and experience with similar contracts, relevant education/training), and indicates how the project team members will be deployed in accordance with their capabilities, with their duties and responsibilities in the light of the methodology specified (e.g. expressed as a percentage of the contract this person will perform).

An informative staffing plan could be submitted. The staffing plan could indicate how the candidate will address the various interdisciplinary issues and deal with them in a timely manner while maintaining high scientific standards throughout the life of the project.

It will be addressed how the team can be coordinated such that it can provide well-founded scientific assistance in the scope of this project, also on short notice and with flexibility. In addition, the team structure mirrors the specific requirements by multistakeholder processes in a political context in an appropriate way.

*2.6.2.6. Communication package (10%)*

The candidate is expected to provide a communication package to be used to present the study externally, ensure visibility and disseminate the results. The package should include a slide deck for communication purposes with graphics and visuals. These graphics and visuals should also be easy to publish/share on various digital platforms (website, social media, etc.).

**2.6.3. Final Assessment**

The points for the award criteria are totalled. The contract will be awarded to the candidate who achieves the highest final score after evaluation by a selected team of experts from the Ministries in the Benelux countries as well as the Benelux General Secretariat.

The contracting authority may seek the assistance of external experts in the evaluation of the bids.

**SECTION 3: Performance of the contract****3.1. Lead officials**

The following lead official is appointed for the content aspects of the contract: Jan Molema, Director of Internal Market & Economy of the Benelux General Secretariat.

Only the lead official is authorised to control and supervise the contract.

When the contract is concluded, the lead official will be the main contact for the contractor. All correspondence and inquiries concerning the performance of the contract shall be addressed to him, unless otherwise expressly stated in the present specifications.

The lead official may delegate some of his powers.

**3.2. Confidentiality**

All documents submitted by the contractor in the course of the performance of the contract are the property of the contracting authority and may not be published or communicated to third parties except with the prior written consent of the contracting authority.

The contractor and its employees are bound by a duty of confidentiality covering information obtained during the execution of the contract. Under no circumstances may the information be disclosed to third parties without the written consent of the contracting authority. All information provided to the contractor in the course of the contract, all documents entrusted and all meetings attended shall be considered strictly confidential.

The contractor undertakes, both during and after the execution of the contract, to keep confidential all confidential information, of whatever nature, communicated to it or of which it becomes aware in the course of performing the contract. The contractor shall take all measures to ensure the confidentiality of the information made available, and to ensure that the data and research results are protected on its own part and by anyone who has access to them. The contractor shall limit access to the information, data and research results made available that are used in the performance of the contract.

The contractor may, however, give the contract as a reference, subject to prior written consent from the contracting authority.

**3.3. Intellectual property rights**

The contracting authority shall acquire the intellectual property rights which arise or, are developed in the course of performing the contract.

**3.4. Compliant implementation**

The services shall comply in all respects with these specifications. Even in the absence of technical specifications in the contract documents, they shall comply on all points with good professional practice.

**3.5. Changes to the contract****3.6.1 Price revision**

No price review is possible for the contract.

**3.5.2. Amendments**

A change may be made without a new procurement procedure for additional services to be performed by the contractor which have become necessary and that were not included in the contract, if the change by the contractor:

1. Is not possible for economic or technical reasons, such as where additional services must be interchangeable or interoperable with existing services obtained under the contract; and
2. would result in significant inconvenience or increase in costs to the contracting authority.

### **3.6. Preliminary inspection:**

The contracting authority reserves the right to request an activity report from the contractor at any time during the contract (meetings held, persons met, overview of results, problems arising and unresolved, deviation from the stated schedule, etc.)

### **3.7. Performance of services**

#### **3.7.1. Period**

The services must be performed within a maximum period of six months from the date when notification is given that the contract has been concluded (except in the case of exceptions duly justified and motivated by the candidate and approved by the contracting authority).

#### **3.7.2. Review of services**

If any discrepancies are found during the performance of the services, this shall be immediately notified to the contracting authority by e-mail, and then confirmed by registered letter. The contractor will be obliged to redo services that have been performed in a non-compliant manner.

### **3.8. Penalty for delay in execution of the contract**

In case of delay in the execution of the contract as announced by the candidate in his offer and approved by the contracting authority (cf. article 3.7.1.) a penalty of EUR 2,000.00 can be imposed for each week of delay.

The penalties for delays are determined by way of lump-sum compensation for a delay in the execution of the contract and are without prejudice to claiming additional compensation for the other damage resulting from a possible delay. They will be payable without notice of default, by the expiry of the term, without the intervention of the contracting authority and shall be applied by operation of law.

### **3.9. Contractor's liability**

The contractor shall bear full liability for any errors and omissions in the services provided, and specifically also in the final report.

The contractor shall also indemnify the contracting authority against any damages payable by the contracting authority to third parties on account of the delay in performing the services or on account of default on the part of the contractor.

In no event shall the contracting authority be liable for any damage to persons or property resulting directly or indirectly from the activities of the contractor necessary for the performance of the contract. The contractor shall indemnify the contracting authority against any claim for damages by third parties in this respect.

If the candidate is an association the members of the association are jointly and severally liable towards the contracting authority for the fulfilment of all obligations with respect to the contract and from any further directions from the contracting authority based thereupon.

### **3.10. Acceptance of services performed**

"Final acceptance" means that the screening process was completed in accordance with the requirements

set out in these specifications and the contracting authority was put in possession of the final report. On the basis of this final acceptance, a record of final full acceptance (or refusal) (with respect to all services), will be prepared by the lead official.

### **3.11. Invoicing and payment for services**

The contractor may proceed with invoicing only after confirming that the screening has been completed in accordance with the requirements of the contract (final acceptance). It shall then submit its invoice (in one copy) to the following address:

BENELUX GENERAL SECRETARIAT  
For the attention of the General Secretary,  
Rue de la Régence–Regentschapsstraat 39  
1000 Brussels

The registrant shall send a copy of its invoice on the same day to the following e-mail address [invoice@benelux.int](mailto:invoice@benelux.int).

Payment of the amount due to the contractor shall be made within thirty days from the date of receipt of the regularly issued invoice (prepared after the aforementioned final acceptance).

The invoice must be made out in EURO.

### **3.12. Applicable laws**

The general Belgian contract law is applicable on the execution of the contract.

### **3.13. Disputes**

All disputes relating to the performance of this contract shall be settled exclusively before the civil courts of Brussels.

## SECTION 4: Technical provisions

### 4.1. Task description and services to be provided

The following list identifies the specific topics to be analysed and discussed individually by the contractor in order to improve our common knowledge base and make our common understanding more concrete. When looking at the specific topics, focus should not only be on the expectable situation by 2050, but also on the path to get there, with intermediate steps in 2030 and 2040. Furthermore, the future discussion should focus on all scenarios and relevant studies which are based on the target of carbon neutrality by 2050 and the challenges and uncertainties to achieve this objective.

Topics to be analysed in more detail should cover:

- **Decarbonisation potential of hydrogen and its derivatives for hard-to-abate sectors (heavy industry, transport, heat)**
- **Development of excess renewable energy production (curtailment) through storage or conversion into renewable hydrogen**
- **Potential of CCUS H<sub>2</sub>**
- **Deduce import needs** : difference between decarbonisation potential and renewable hydrogen production potential in 2050
- **Electrolysers – Production of renewable hydrogen (and/or its derivatives)**
- **North Sea ports – Import of renewable hydrogen (and/or its derivatives)**
- **Captive markets – Local production and consumption of renewable hydrogen (and/or its derivatives)**: e.g. chemical industries, steelworks and refineries along the coast and main inland waterways
- **Pipelines and caves – Storage and transmission infrastructure of renewable hydrogen (and/or its derivatives)**

The contractor is asked to make an analysis of existing (long-term) scenarios and other studies with a specific focus on one or more of the topics mentioned. The contractor must analyse all topics, but is invited to combine the topics of his choice into different working packages, which can be seen as the bigger building blocks to come to a common overall vision.

The results of the analysis are presented in the form of slides, as input for further discussion in the meetings with (a) the Benelux representatives of the Hydrogen working group and other Benelux representatives and (b) the workshops with external experts and stakeholders (ideally including the respective authors of the long-term scenarios), to be selected, approached and engaged by the contractor together with the Benelux Hydrogen working group. The contractor plans these meetings and workshops according to the working packages he proposes. The purpose of these meetings and workshops is to further discuss the findings and to allow the participants to add their individual knowledge.

Throughout the research project, close communication with the Benelux Hydrogen working group and the Benelux Secretariat is maintained for organisational matters. In particular, the contractor must keep in mind that the work progress and results are to be discussed in great detail and shared with the other Benelux-countries and the participants of the Hydrogen working group, and that the reports should adequately reflect their input.

Meetings and workshops will usually be held digital (preferably via MS Teams) or probably in Brussels, to the extent allowed by COVID-19 pandemic restrictions. The time and effort involved in coordinating these meetings is to be included in project scheduling and budgeting.

The contractor should summarise the outcome of each of the different working packages into progress reports, taking into account the likely developments and uncertainties regarding the specific topics, based

on their findings in the studies and the discussions in the meetings and workshops. These progress reports must be distributed among the participants for final verification. The progress reports will later on form the basis for the draft and final report.

#### **4.2. Data to be made available to the contractor**

The Benelux-countries will provide the available national long-term scenarios or long-term strategies at the beginning of the project, in addition to the output of the work being done within Benelux already on the comparison of existing long-term scenarios, as well as give an overview of scenarios and studies.

#### **4.3. Progress – interim report – (draft) final report**

In order to achieve the targets of the project in the given timeframe, the following conditions regarding the reporting have to be followed:

- The dates for the meetings and workshops must be fixed well in advance and no later than three weeks before the proposed date.
- At least a week before each meeting and/or workshop, an invitation is sent to the participants, clearly indicating the topics for discussion and what is expected of the participants.
- Minimum three days before the meeting or workshop the preparatory slide deck, i.e. maximum 10 slides, on the structure of the meeting or workshop and the analysis, questions, hypotheses, presented methodologies, etc. for the discussion, is shared with the Chair of the Benelux Hydrogen working group.
- Further progress of the project will be documented in the minutes from regular meetings and workshops and the progress reports that result from these meetings and workshops and study analysis, summarizing the main conclusions in maximum two pages.
- The individual minutes and documentation of the meetings and workshops are to be submitted as electronic documentation not later than three weeks after the meetings and will be approved by the Chair of the Benelux Hydrogen working group and other participants.
- A **(draft) final report** is to be submitted, including documentation on services performed during the contract period. This does not require preparation of a separate report. Instead, the (draft) final report will comprise the progress reports, accompanied by a short introduction and conclusion of 2-5 pages. The draft final report is to be presented to the Benelux Hydrogen working group.
- The draft final report is to be submitted electronically one month prior to the end of the project for consultation. The contractor shall then finalise the draft final report into a **final report**, taking into account any remarks received.

#### **4.4. Schedule and execution time**

The contractor shall have a maximum period of 6 months to fully execute the contract (except in the case of exceptions duly justified and motivated by the candidate and approved by the contracting authority).

The candidate must include a complete schedule in his bid.

**SECTION 5: Annexes**

## ANNEX 1: Scope of the study

### 1. KEY ELEMENTS

#### 1.1 Overview of existing studies

In a first step, studies and NECPs of the Benelux countries will be analyzed to identify first trends:

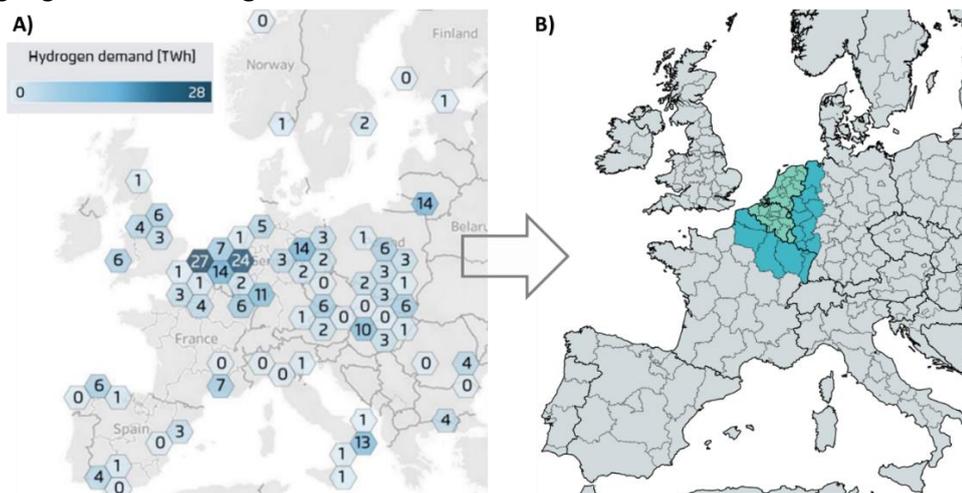
- First indication can be extracted from studies commissioned by the European Commission (FCH-JU)<sup>2</sup> and conducted by Trinomics. These studies are based on an analysis of the respective NECPs and have a national dimension - cross-border trade and interconnections have not been considered - and consider the horizon **2030**:

**Table 1.** Key data from Trinomics analysis of BeNeLux NECPs

	Electrolysis Capacity (MW)	Production = Demand Potential (TWh(H <sub>2</sub> ) / year)*
<b>BE</b>	400 - 2300	1.0 7.0
<b>NL</b>	800 - 3600	2.0 12.0
<b>LU</b>	70 - 280	0.1 0.4
<b>Total</b>	1270 - 6180	3.1 – 19.4

\*In the early stage (until 2030) demand will be limited by local supply.

- Data presented by a study of the Wuppertal Institute on the decarbonisation of the industry sector until **2050** follows a regional approach<sup>3</sup>:
- Another recent study by Agora Energiewende has identified "No-regret options" for regions favorable to the emergence of dedicated hydrogen infrastructure within Europe (until **2050**), e.g. the Benelux Union region (+ its neighboring regions).
- Benelux is not an island but interconnected to neighbouring countries with similar ambitions in terms of climate change mitigation and energy transition. Therefore, it is aimed to extend the scope of this study to the neighbouring regions shown in **figure 1**.



**Figure 1.** A) Map with hydrogen demand potentials in Europe around 2050,<sup>4</sup> B) Map of Europe with the regions at the centre of this study: (i) the Benelux Union in light green and (ii) the neighbouring regions in light blue<sup>5</sup>

In order to be able to estimate the potential in terms of export, import and transit, it is planned to analyse the demand, supply and infrastructure potential of the regions bordering the Benelux (listed in clockwise order from

<sup>2</sup> Trinomics (August 2020):

[https://www.fch.europa.eu/sites/default/files/file\\_attach/Final%20Report%20Hydrogen%20in%20NECPs%20%28ID%209501746%29.pdf](https://www.fch.europa.eu/sites/default/files/file_attach/Final%20Report%20Hydrogen%20in%20NECPs%20%28ID%209501746%29.pdf)

<sup>3</sup> Wuppertal Institute (January 2020) : [https://wupperinst.org/fa/redaktion/downloads/projects/INFRA\\_NEEDS\\_d4-4.pdf](https://wupperinst.org/fa/redaktion/downloads/projects/INFRA_NEEDS_d4-4.pdf) and

[https://wupperinst.org/fa/redaktion/downloads/projects/INFRA\\_NEEDS\\_Policy\\_Brief.pdf](https://wupperinst.org/fa/redaktion/downloads/projects/INFRA_NEEDS_Policy_Brief.pdf)

<sup>4</sup> [https://static.agora-energiewende.de/fileadmin/Projekte/2021/2021\\_02\\_EU\\_H2Grid/2021-02-11\\_Presentation\\_H2GRID.pdf](https://static.agora-energiewende.de/fileadmin/Projekte/2021/2021_02_EU_H2Grid/2021-02-11_Presentation_H2GRID.pdf)

<sup>5</sup> <https://mapchart.net/europe-nuts2.html>

North to South-West).

- Lower Saxony
- North Rhine-Westphalia
- Rhineland-Palatinate
- Saarland
- Grand-Est
- Hauts-de-France

## 1.2. State of play - demand, supply, infrastructure and pilot projects

After the overview of the different studies, a baseline should be established to define the starting point. Each Benelux country (+ neighbouring regions) would collect the data at national (regional) level

- BE - current H<sub>2</sub> demand: [8.000 (FLA) + (-)<sup>6</sup> (WAL)] GWh(H<sub>2</sub>) / year
- NL - current H<sub>2</sub> demand: (-) GWh(H<sub>2</sub>) / year
- LU - current H<sub>2</sub> demand: 15 GWh(H<sub>2</sub>) / year

And,

- Lower Saxony: (-) GWh(H<sub>2</sub>) / year
- North Rhine-Westphalia: (-) GWh(H<sub>2</sub>) / year
- Rhineland-Palatinate: (-) GWh(H<sub>2</sub>) / year
- Saarland: (-) GWh(H<sub>2</sub>) / year
- Grand-Est : (-) GWh(H<sub>2</sub>) / year
- Hauts-de-France : (-) GWh(H<sub>2</sub>) / year

The state of play in terms of infrastructure:

- Mostly private pipelines<sup>7</sup>: 5,000 km total, 600 km in Belgium and 400 km in Germany, e.g:
- Air Liquide with a BE/NL interconnection and a capacity of 650 GWh(H<sub>2</sub>) / year
- Air Liquide Rhine-Ruhr with a capacity of 590 GWh(H<sub>2</sub>) / year

Comparing the probable evolution of hydrogen demand in the Benelux Union (+ neighbouring regions), it appears that the size of the existing infrastructure is, a priori, insufficient to cover the future H<sub>2</sub> needs.

Ongoing development of the state of play - projects (pilots, demonstration, etc.):

- BE – Fluxys hydrogen backbone for Belgium<sup>8</sup>
- NL – HyWay27<sup>9</sup>
- LU – MosaHYc<sup>10</sup>

And,

- Lower Saxony
- North Rhine-Westphalia
- Rhineland-Palatinate
- Saarland – MosaHyc
- Grand-Est – MosaHyc
- Hauts-de-France

## 1.3. Estimates / Forecasts for demand, production and import (based on official public data)

Various studies and forecasts exist whose conclusions may differ:

- 2030 (FCH-JU, [Shipping sun and wind to Belgium is key in climate neutral economy](#), etc.)
- 2040 (some NECPs)
- 2050 (as outlined above Wuppertal Institute, and Agora Energiewende "No-regret options" etc.)

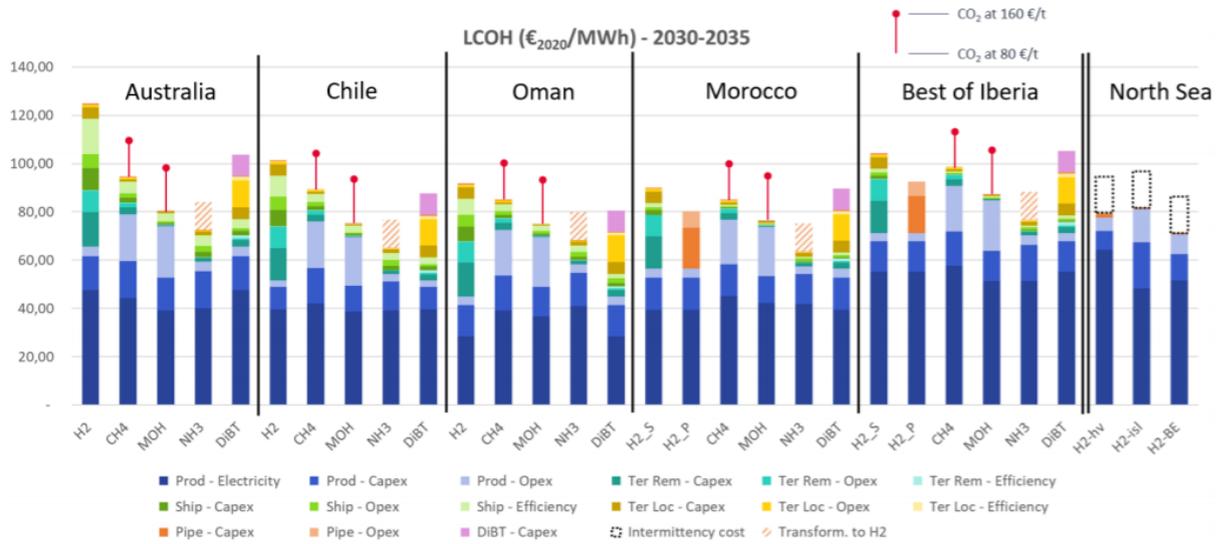
<sup>6</sup> (-) = data currently missing

<sup>7</sup> IEA2019

<sup>8</sup> <https://www.fluxys.com/fr/energy-transition/hydrogen-carbon-infrastructure>

<sup>9</sup> Final report: <https://www.hyway27.nl/en/latest-news/hyway-27-realisation-of-a-national-hydrogen-network>

<sup>10</sup> <https://www.grtgaz.com/medias/communiqués-de-presse/hydrogene-lancement-mosahyc>



Source: hydrogen import coalition

**Figure 2.** From import study ‘Shipping sun and wind to Belgium is key in climate neutral economy’ show that in most cases it is cheaper to import high-end molecules like methanol and ammonia than raw H<sub>2</sub>.

Therefore, an unbiased assessment of current and future hydrogen (+ derivatives) needs is essential in order to **anticipate the infrastructure needs for storage, transport and distribution** (whether public or private). It is proposed to **estimate future hydrogen (+ derivatives) needs based on the common ambition of reaching climate neutrality until 2050.**

**a. Proposed methodology**

- **Decarbonisation potential of hydrogen and its derivatives for hard-to-abate sectors**
- Development of **excess renewable energy production** (curtailment) through storage or conversion into renewable hydrogen (in TWh(H<sub>2</sub>) / year in 2050)
  - Include the extension of the North Sea wind farm (see EU offshore strategy)
  - Consult NECP forecasts of the respective countries (regions),
- **Quantification of potential of CCUS H<sub>2</sub>**
  - CCS might be limited compared to the potential needs of CO<sub>2</sub> storage
  - CCU e.g. Fischer-Tropsch or methanol production
- **Deduce import needs** - difference between decarbonisation potential and renewable hydrogen production potential in 2050
  - It will probably be important to include North Sea ports and their infrastructure<sup>11</sup>

**b. Expected results**

In this part, the planned study should provide (i) quantified projections based on clear scenario(s) (see table 1), and (ii) the mapping of the different potentials (see Figure 3).

**Table 1.** First estimation for 2050 of the decarbonisation potential (million tons (CO<sub>2</sub>)/year) in the different non-electrifiable sectors with the sensible use of hydrogen and its derivatives (TWh(H<sub>2</sub>)/year)

	<b>BE</b> (TWh(H <sub>2</sub> )/year)	<b>NL</b> (TWh(H <sub>2</sub> )/year)	<b>LU</b> (TWh(H <sub>2</sub> )/year)
<b>Heavy industry</b> (steel, chemical, cement etc.)	(-)	(-)	1 - 4

<sup>11</sup> See for example the Hydrogen Import Coalition report <https://portofantwerp.com/sites/default/files/Hydrogen%20Import%20Coalition.pdf>

<b>Transport</b> (aviation, shipping, rail and road)	(-)	(-)	2 - 4
<b>“integrated energy sector” → Heat</b> (use of waste heat from electrolyzers, CHP or H <sub>2</sub> power plants for flexible centralized production of sustainable decarbonised electricity and heat if no sustainable biomass available)	(-)	(-)	1 - 2
<b>Total</b>	<b>(FLA) 26 - 100</b>	(-)	<b>4 - 10</b>
<b>Greenhouse gas emissions reduction (million tonnes (CO<sub>2</sub>)/year)</b>	(-)	(-)	<b>1 - 2</b>

(-)=Data currently missing

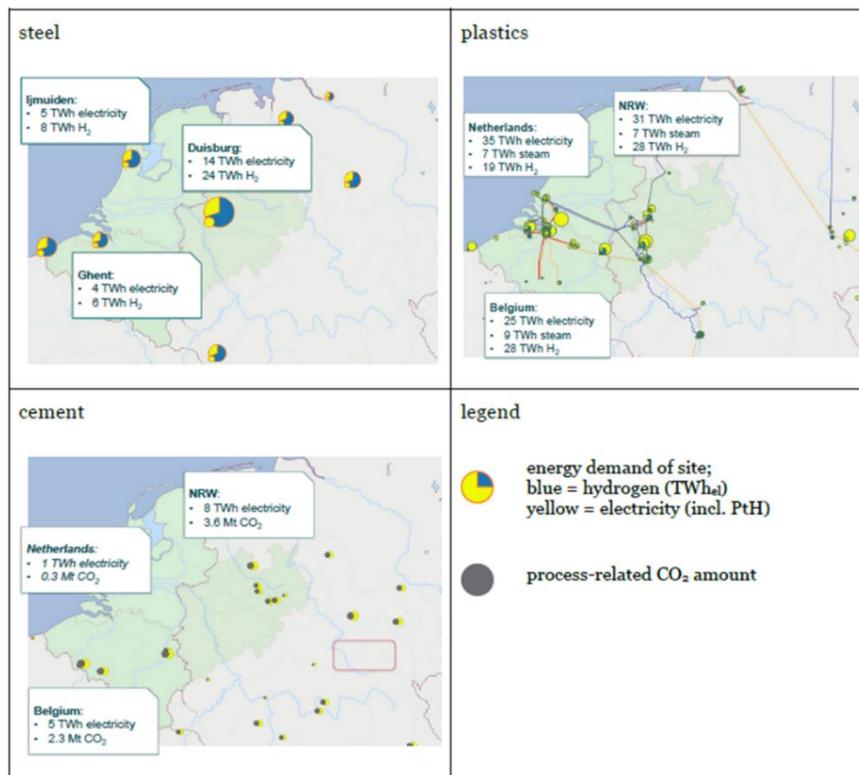


Figure 3. Energy demand (electricity, hydrogen and steam) and CO<sub>2</sub> flows in the region in 2050<sup>12</sup>.

## 1.4. Projecting the needs for infrastructure

### a. Proposed methodology

Based on the estimates identified in PART 1, regional, national and cross-border H<sub>2</sub> infrastructure needs can be deduced for 2050 (as well as intermediate targets for 2030 and 2040).

- **Electrolysers – Production of renewable hydrogen (and/or its derivatives)**
  - Local ecosystems - short term?
  - Larger ones - long term?
- **North Sea ports – Import of renewable hydrogen (and/or its derivatives)**
- **Captive markets – Local production and consumption of renewable hydrogen (and/or its derivatives)**
  - e.g. chemical industries, steelworks and refineries along the coast and main inland waterways

<sup>12</sup> Figure 13 of the study : [https://wupperinst.org/fa/redaktion/downloads/projects/INFRA\\_NEEDS\\_d4-4.pdf](https://wupperinst.org/fa/redaktion/downloads/projects/INFRA_NEEDS_d4-4.pdf)

- **Pipelines and caves – Storage and transmission infrastructure of renewable hydrogen (and/or its derivatives)**
  - the potential of converting existing e.g. natural gas, ammonia or kerosene infrastructure should be considered here<sup>13</sup>

In this part, it will be of particular interest to analyse the following three questions for the different infrastructure components,

1. How much (which dimension)?
2. Where (from where to where)?
3. When?

#### b. Expected results

Ideally, this study will show the evolution (2050 scenario, with intermediate steps in 2030 and 2040) of demand, supply and cross-border infrastructure potentials for hydrogen (+ derivatives) transport and distribution as well as an estimation of the hydrogen (+ derivatives) import needs to the Benelux Union (+ neighbouring regions). A concrete objective would be to represent these unbiased data and forecasts in a cartographic way (similar to **Figure 3**), which could serve as a decision support tool.

### 1.5. Business cases and regulatory framework

#### a. Proposed methodology

- Describe the existing regulatory framework of (renewable) hydrogen production, transport, storage and usage
- Examine the favorable framework to foster cross-border hydrogen economy within the Benelux-countries and neighboring regions as well as respective business cases

#### b. Expected results

- List of major cross-border projects on offshore energy, pipeline networks, import potential, etc.
- Draw up an inventory of the current regulatory framework with technical and/or legal constraints
- Elaborate recommendations for a favorable regulatory framework for the renewable hydrogen market at Benelux - using Benelux legal instruments - and European level.

## 2. STAKEHOLDERS FOR INTERVIEWS AND ROUNDTABLES

During the study-making process, discussion with experts and stakeholders are useful, to receive quantitative information as well as information on visions and projects. Those discussions can be organised in the formats of meetings and workshops.

You can find below a non-exhaustive list of stakeholders to consult:

- Ministries of Belgium (Federal, Flanders, Wallonia, Brussels), The Netherlands and Luxembourg
- Authorities from neighbouring regions: Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Grand-Est and Hauts-de-France
- Transmission System Operators (TSOs) : Fluxys, Gasunie, Creos, GRT gaz, etc
- Energy regulators
- Private network operators: e.g. AirLiquide, Linde Group, etc.
- Community of Dunkerque: Pôlénergie, EuraEnergie
- Maritime and inland ports : Port of Antwerp, Port of Rotterdam, North Sea Port, etc.
- Industry federations
- Etc.

<sup>13</sup> [https://www.fluxys.com/en/news/fluxys-belgium/2020/200717\\_news\\_european\\_hydrogen\\_backbone](https://www.fluxys.com/en/news/fluxys-belgium/2020/200717_news_european_hydrogen_backbone)

**ANNEX 2: Bid form****Contract: 2022/01/Benelux-Hydrogen****Specification 2022****I. Information about the candidate****A. Or<sup>14</sup>: the single legal entity**

Name of candidate	
<u>Name</u> .....	
Information about the candidate	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....
<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....
<u>Name of authorised representative</u> .....	<u>Position of authorised representative</u> .....

The candidates shall attach the relevant information and documents to demonstrate the representative's authority to sign (articles of association, appointment decisions, and/or power(s) of attorney) as an attachment to this bid form.

All the documents required by the specifications, in particular in the selection criteria set out in article 2.5 and the award criteria set out in article 2.6, dated and signed, shall be attached to this bid form

<sup>14</sup> Strike through what doesn't apply.

Candidate's contact person during the procurement procedure for the contracting authority

Name	.....
Position	.....
Telephone	.....
E-mail	.....

**B. Or<sup>15</sup>: the association**

Name of association/candidate	
<u>Name</u> .....	
Information about the association/candidate	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....
<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....

The legal entities who are forming the association are:

Member 1	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....

<sup>15</sup> Strike through what doesn't apply.

<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....
<u>Name of authorised representative</u> .....	<u>Position of authorised representative</u> .....

Member 2	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....
<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....
<u>Name of authorised representative</u> .....	<u>Position of authorised representative</u> .....

Member 3	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....
<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....
<u>Name of authorised representative</u> .....	<u>Position of authorised representative</u> .....

Member 4	
<u>Address</u> .....	<u>Post code</u> .....
<u>Town/city</u> .....	<u>Country</u> .....
<u>Telephone</u> .....	<u>Electronic mail (e-mail)</u> .....
<u>Nationality</u> .....	<u>Legal form</u> .....
<u>Name of authorised representative</u> .....	<u>Position of authorised representative</u> .....

Etc.

As all members of the association must sign the offer, the candidates must attach the relevant information and documents to demonstrate that the representatives of each member of the association have signing authority (articles of association, appointment decisions, and/or power(s) of attorney) as an attachment to this bid form.

All the documents required, in particular in the selection criteria set out in article 2.5 and the award criteria set out in article 2.6, dated and signed, shall be attached to this bid form.

Candidate's contact person during the procurement procedure for the contracting authority (in accordance with article 2.2.2.):

Name	..... ....
Position	..... ....
Telephone	..... ....
E-mail	..... ....

**II. Pricing**

The candidate undertakes to perform the contract in accordance with the terms and conditions of the specifications, for the overall sum indicated below, written in words and figures, expressed in EURO, excluding VAT, of:

<p>.....</p> <p>[in words and figures in EURO]</p>
--

**III. Payments**

Payments which fall due after complete execution of the contract may be paid by transfer to:

Account number	.....
IBAN	.....
BIC	.....
Financial institution	.....
In the name of	.....

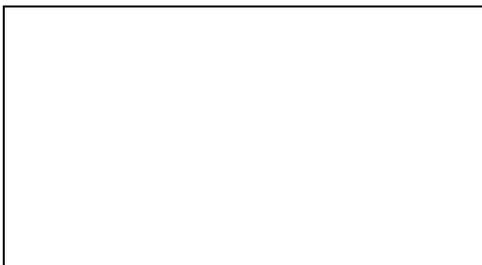
**IV. Declarations by the candidate**

..... [name of candidate], duly represented by,  
.....  
[name, position]

hereby declares:

1. that it has taken note of the specification and declares that:
  - it unconditionally agrees to the provisions and procedure set out therein;
  - it has received all useful and necessary information concerning the award procedure and the contract, so that it can submit its bid in an informed manner;
2. that all information it provides and will provide to the contracting authority in the course of this procedure is accurate;
3. that it is not in any of the situations noted as grounds for exclusion in this specification;
4. (*if the candidate is an association*) that the members of the association are jointly and severally liable towards the contracting authority for the fulfilment of all obligations with respect to the contract and from any further directions from the contracting authority based thereupon;
5. that the contracting authority may obtain all necessary information of a financial and moral nature regarding the undersigned from other institutions or organisations;
6. that the period of validity of the bid is four months;
7. that the bid is submitted unconditionally and without reservation;
8. that confidential information and/or information pertaining to technical or commercial secrets is clearly indicated in the bid;
9. that by submitting its bid it undertakes to perform the contract in accordance with the terms and conditions set forth in the specifications, at the price stated above;
10. that payments can be legitimately made by bank transfer to the bank account specified above.

Done at ....., on .....



Name: .....

Position: .....

APPROVED:

Done at ....., on .....



Name: .....

Position: .....