



C-234

## Green Deal H<sub>2</sub> Districts

Towards the practical application of hydrogen as a heat supply in residential areas

### The parties:

1. The Minister of Economic Affairs and Climate Policy, Bas van 't Wout, hereinafter: EZK;
2. The State Secretary for Infrastructure and Water Management, Stientje van Veldhoven, hereinafter: IenW;
3. The Minister of the Interior and Kingdom Relations, Kajsa H. Ollongren, hereinafter: BZK;

The parties referred to under 1–3, each acting in their capacity as an administrative body, are hereinafter jointly referred to as: **the national government**;

4. The Provincial Executive of the province of Drenthe, duly represented in this matter by its member T. Stelpstra, duly authorised to that end by the King's Commissioner pursuant to Section 176 of the Provinces Act, hereinafter: the province of Drenthe;
5. The Provincial Executive of the province of South Holland, duly represented in this matter by its member B. Potjer, duly authorised to that end by the King's Commissioner pursuant to Section 176 of the Provinces Act, hereinafter: the province of South Holland;

The parties referred to under 4 and 5, each acting in their capacity as an administrative body, are hereinafter jointly referred to as: **regional governments**;

6. The Municipal Executive of the municipality of Hoozevee, represented by alderman for a more sustainable Hoozevee W. ten Kate, duly authorised to that end by the mayor, acting to implement the decision of the Municipal Executive;
7. The Municipal Executive of the municipality of Goeree-Overflakkee, represented by alderman for sustainability and innovation Ms T.C. Both-Verhoeven, duly authorised to that end by the mayor, acting to implement the decision of the Municipal Executive;

The parties referred to under 6 and 7, each acting in their capacity as an administrative body, are hereinafter jointly referred to as: **local governments**

8. Stedin Netbeheer B.V., represented by A.J. Zwartscholten, innovation manager;
9. NV RENDO, represented by E.R. Veenstra, managing director;

The parties referred to under 8 and 9 are hereinafter jointly referred to as: **network operators**;

10. The Netherlands Association for Sustainable Energy (Nederlandse Vereniging van Duurzame Energie, hereinafter: 'NVDE'), represented by O. van der Gaag, director;

All hereinafter jointly referred to as: **the parties**.



## General considerations:

1. In order to safeguard our continued prosperity for future generations, the competitiveness of our economy needs to be strengthened, while reducing the environmental burden and our dependence on fossil energy and scarce resources.
2. Creativity, entrepreneurship and innovation are essential for enabling this transition to green growth. Businesses, citizens and civil-society organisations are developing numerous concrete initiatives for greening the economy and society. By introducing Green Deals, the government aims to make optimal use of these dynamics in society driving green growth.
3. Green Deals provide businesses, citizens and organisations with a low-threshold opportunity to work with the government on achieving green growth, based on initiatives originating in the community. Where obstacles are encountered that the initiators believe can be addressed at the national government level, the government gives a commitment to endeavour to remove or resolve them so as to facilitate and speed up the initiatives. A Green Deal lays down in writing the concrete agreements made by the parties in this regard.
4. The results of a Green Deal can be used for other, comparable projects, thereby facilitating follow-up and enabling the scope of a Green Deal to be extended without any specific support from the national government.

## Specific considerations

1. The point of departure for the Climate Agreement is a built environment that is completely natural gas-free by 2050 and thus has low CO<sub>2</sub> emissions. The future will offer various sustainable heat supply technologies. The best heat supply for a particular building, neighbourhood or district depends on the local conditions and the structural properties of the buildings. The security of supply and reliability must be sufficiently guaranteed, as is the case in the present.
2. In some districts, sustainable heat supplies as an alternative for natural gas, such as a heating networks or heat pumps, are not technically or economically feasible. Sustainable gases such as CO<sub>2</sub>-free hydrogen and green gas have the potential to contribute to the heating of the built environment in the long term. In order to arrive at a well-functioning, sustainable heat supply for all districts, it is important for all options to be investigated and fleshed out in more detail. Pilot projects can provide valuable insights in this respect.
3. A transition from natural gas to hydrogen for heat will require a considerable effort from all the citizens, businesses, governments and civil-society organisations involved. As with the other natural gas-free options, the transition will be accompanied by the implementation of new technologies, the replacement of natural gas-fired installations, modifications to homes, the reuse of the existing gas infrastructure and, in this case, the production and/or import of CO<sub>2</sub>-free hydrogen. Among other things, the government's hydrogen strategy presented in March 2020 confirms the complexity and scope of the challenge in the built environment and the relevance of hydrogen in that respect. The government wants to do as much as possible together with the parties involved to explore and create the right conditions for this possible heating transition.
4. Before we can actually use hydrogen to heat the built environment, more knowledge is needed on the technical and safety aspects of hydrogen in homes and about the reuse of the existing gas infrastructure for hydrogen. It is important that we run pilot projects to achieve this, to develop solutions to any obstacles. In addition, there are enabling conditions that must be created in terms of techno-economic, social, legal and administrative aspects before hydrogen can be used more broadly in the built environment.
5. Based on the experience gained during the preparatory phase of the pilot projects and their implementation, we will be able to identify the implications and conditions for the use of hydrogen in the heating transition. This knowledge can be used to devise structural solutions for obstacles that occur during the pilot projects, as input to analyse financing structures and clarify and define responsibilities and powers, and to amend legislation to facilitate the use of hydrogen in the built environment if the broader use of hydrogen in the built environment is deemed desirable.



6. The aim of this Green Deal is to enable pilot projects in the short term and, with the lessons learned in the preparation process and the pilot projects themselves, to prepare any necessary structural changes to legislation, regulations and other aspects. The local governments have received a specific payment for the pilot projects as part of the national government's Programme for Natural Gas-Free Districts to realise the first hydrogen districts in the Netherlands.
7. The first two concrete Dutch hydrogen district initiatives, Hoogeveen and Stad Aardgasvrij (hydrogen-free city), are not stand-alone projects, but are part of the Hydrogen Valley programme HEAVENN in the northern Netherlands and the H2GO programme on Goeree-Overflakkee in the delta of South Holland, respectively. As a result, the lessons from these pilot projects will be easy to apply in other sectors and, vice versa, experiences from other sectors can be used.
8. The objective of the two pilot projects is to contribute to identifying and reducing risks associated with the realisation and exploitation of hydrogen districts by equipping homes and buildings with a central heating boiler suitable for hydrogen and a hydrogen gas meter, while reusing the existing gas infrastructure. This allows a new option to be added to the range of existing options to make homes and districts in the Netherlands natural gas-free.
9. The initiators of the pilot projects Hoogeveen and Stad Aardgasvrij have stated that affordability for citizens will be a key factor for success. All parties agree on this. The various aspects of affordability will be investigated in a number of forums, such as the hydrogen in the built environment track of the National Hydrogen Programme and the Programme for Natural Gas-Free Districts for the more project-specific questions.
10. The use of hydrogen in the built environment also offers opportunities for the potentially cost-efficient reuse of the existing national and regional transport network and the intricate natural gas distribution network of various network operators.
11. The first districts where the transition to hydrogen is to take place will have the social task of raising awareness of the need for the transition and the necessary change in citizens' behaviour. Striking the right balance between individual freedom of choice and the social value of creating the collective systems to be fleshed out in both pilot projects will be a challenge. As part of the pilot projects, stakeholders will endeavour to arrive at an acceptable solution to this dilemma. This dovetails in an important way with the Climate Agreement, which states: 'Acceptance as a key condition: the transition from natural gas to sustainable heating will be achieved through the commitment of residents, building owners and other parties in the region where this transition is on the agenda.'
12. In addition, it is important that households continue to work to improve the energy performance of their homes. After all, a sustainable built environment must be clean and efficient, also taking into account that the availability of sustainable hydrogen may be limited in the future as well. It is important that the pilot projects present a balanced picture of hydrogen's possibilities and the need to make homes more energy-efficient.
13. The national government also plays an important role in creating the right enabling conditions for the realisation of hydrogen districts. For example, the national government bears responsibility for the legal framework regarding safety, market regulation and consumer protection in the creation of hydrogen districts. The contribution of the municipalities and stakeholders involved, such as network operators, is of great importance in this respect. The Green Deal offers the parties the opportunity to explore jointly what temporary and long-term legislation and regulations will be needed to realise hydrogen districts in practice.



## Have agreed as follows:

### Article 1 Objective

The parties jointly aim to increase knowledge of the use of hydrogen as an alternative to natural gas in the built environment by investigating whether, and how, hydrogen can be used in practice to make the Dutch heat supply sustainable. Based on the preparations that are being made for the realisation of the pilot projects in Hoogeveen and Stad aan 't Haringvliet and any other pilot projects, the Green Deal will identify the techno-economic, social, legal and administrative aspects of hydrogen in the built environment, identify bottlenecks and develop and test solutions and working methods.

In view of the main objective described above, the specific sub-objectives of this Green Deal are:

- a) promoting the development of pilot projects with hydrogen technologies in the built environment;
- b) exploring the necessary technical conditions for using hydrogen safely to heat the built environment in practice;
- c) exploring the legal conditions, including regulations and permits, necessary for using hydrogen to heat the built environment;
- d) facilitating knowledge sharing between the parties on using hydrogen to heat the built environment; and
- e) sharing lessons learned from the pilot projects, as part of which practical experience is consistently and extensively shared by means of a joint dissemination and communication strategy.

### Article 2 Research themes

1. The research themes on which the Green Deal focuses are, in any event:
  - a) legal frameworks for the transport and storage of hydrogen;
  - b) (legal) conditions for the transport of hydrogen by regional network operators as part of the pilot projects;
  - c) the costs of the transport and storage of hydrogen;
  - d) the external safety of the local production, transport, storage and use of hydrogen and hydrogen carriers;
  - e) the status of hydrogen in building regulations;
  - f) how to guarantee the quality of pipework behind the meter;
  - g) hydrogen in the built environment as a collective facility;
  - h) equivalence as compared to natural gas;
  - i) spatial integration;
  - j) security of supply of CO<sub>2</sub>-free hydrogen;
  - k) hydrogen certification;
  - l) the link with energy savings; and
  - m) participation and support.
2. The list of themes in the first paragraph is not exhaustive. The task forces referred to in Article 14 may place specific research themes or bottlenecks that deserve attention on the agenda by mutual consent.



### **Article 3 Desired outcome and approach**

With this Green Deal, the parties intend to gain the knowledge that will make two or more pilot projects with hydrogen technologies in the built environment possible. Preparations for the pilot projects will be made during the implementation of this Green Deal. The findings, insights and experiences gained during the preparation process will contribute to the elaboration of the various research themes. As current legislation and regulations are not yet geared to the use of hydrogen to heat the built environment, the necessary enabling conditions and solutions will be explored in the context of this Green Deal. The intended results are:

- a) identifying the enabling conditions for the realisation of the pilot projects;
- b) formulating possible solutions to existing technical and legal obstacles to the pilot projects; and
- c) defining the necessary scope for experimentation in the pilot projects within clearly defined boundaries.

The experiences with these pilot projects should ultimately offer insight into whether, and if so how, a safe and socially acceptable use of hydrogen to heat the built environment can be achieved in a cost-efficient manner and where any bottlenecks lie.

## **Commitment and actions to be taken by the parties**

### **Article 4 Joint actions to be taken by the parties**

*The parties will:*

- a) share knowledge, experience and best practices in the field of techno-economic, social, legal and administrative aspects of hydrogen in the built environment;
- b) jointly explore how room for experimentation in the realisation of the pilot projects can be created within clearly defined boundaries;
- c) jointly explore the conditions under which regional network operators may be permitted to transport hydrogen for the pilot projects while using the existing gas infrastructure;
- d) involve other relevant stakeholders in the implementation of the Green Deal with the goal of knowledge sharing and the development of hydrogen in the built environment in a broad sense, and invite them to join as partners;
- e) organise at least two workshops per year, in which each party, in cooperation with the partners, will contribute appropriate expertise on the experience and knowledge gained during the preparation of the pilot projects and their expected implications for the relevant legislation and regulations. The workshops will be open to all interested stakeholders;
- f) draw up an annual report summarising the obstacles and the elaboration of solutions based on experiences with the pilot projects; and
- g) participate actively in the core team and the task forces to be set up in the context of this Green Deal.

### **Article 5 Commitment and actions to be taken by the national government**

*The national government will:*

- a) ensure proper coordination with the Heating Expertise Centre and with national policy programmes such as the National Hydrogen Programme and the Programme for Natural Gas-Free Districts to disclose the knowledge and expertise gained in the implementation of this Green Deal;
- b) make a proactive effort to remove any legal obstacles in terms of legislation and regulations that impede the development of the use of hydrogen in the built environment, subject to the enabling condition that the level of external safety remains at least the same as in the current heat supply. Where necessary, action may be taken with a view to amending legislation and regulations; and
- c) make civil service capacity available to carry out the activities specified as part of this Green Deal.



#### **Article 6 Commitment and actions to be taken by EZK**

*EZK will:*

- a) make a secretary available for the core team at the Netherlands Enterprise Agency. The secretary will focus on coordinating the implementation of the agreements in this Green Deal;
- b) ensure, through the Netherlands Enterprise Agency, that the knowledge gained and developed as part of this Green Deal is accessible to anyone on the National Hydrogen Programme website; and
- c) share information on hydrogen policy developments with the parties and designate a contact person at EZK.

#### **Article 7 Commitment and actions to be taken by IenW**

*IenW will:*

- a) take note of how the pilot projects involved deal with the requirements in the Living Environment (Quality) Decree and the Publication Series on Dangerous Substances, and for as long as the Environment and Planning Act is not yet in force with the requirements in the Spatial Planning Act (Spatial Planning Decree and External Safety [Establishments] Decree), the Environmental Permitting (General Provisions) Act (Living Environment Law Decree and Activities [Environmental Management] Decree) and the Environmental Management Act (Major Accidents [Risks] Decree), among other things with regard to:
  - the local hydrogen gas pressure, measurement and control station;
  - the supply of the hydrogen (tube trailers) and their connection to the local gas infrastructure; and
  - local storage and possible local production of hydrogen.The aim is to learn lessons for further policy development;
- b) share knowledge of the use of hydrogen in the area of environmental safety with the parties;
- c) take note of the motivation for and experiences with the scope for experimentation and strive for the Green Deal to lead to standardisation and to a broad platform for knowledge transfer in this field (with a focus on external safety); and
- d) designate a contact person at IenW for the aforementioned matters.

#### **Article 8 Commitment and actions to be taken by BZK**

*BZK will:*

- a) ensure the connection with the inter-administrative Programme for Natural Gas-Free Districts and, in particular, the hydrogen pilot projects and the knowledge and learning programme that is part of it;
- b) take note, where relevant, of how the pilot projects deal with the rules in the building regulations; and
- c) share knowledge on the use of hydrogen with the parties and designate a contact person at BZK for this purpose.

#### **Article 9 Commitment and actions to be taken by regional governments**

*The regional governments will:*

- a) ensure civil service capacity and contribute to knowledge sharing;
- b) inform the initiators of the pilot projects about spatial planning regulations for the integration of the facilities required for the implementation of the pilot projects, taking into account the applicable legal frameworks;
- c) consult with the environmental service and the security region – on the basis of their duty of care – to flesh out the lack of specific legislation and regulations with regard to the relevant installations and activities by means of secondary regulations and permits, include the pilot projects in the spatial planning framework, the structure vision and the zoning plan and provide insight into the manner in which this was done; and
- d) designate a contact person for the aforementioned matters at the province of South Holland and the province of Drenthe.



### **Article 10 Commitment and actions to be taken by local governments**

*The local governments will:*

- a) supervise the realisation of pilot projects for the use of hydrogen in the built environment;
- b) ensure that the pilot projects respect the existing regulations with regard to external safety and safety inside buildings and consult with IenW and/or BZK in the event of a lack of clarity or uncertainties in this respect;
- c) create support for the use of hydrogen in the built environment among the residents of the pilot project districts and provide information to citizens;
- d) share knowledge and information about the use of hydrogen in the built environment with the parties;
- e) consult with the environmental service and the security region – on the basis of their duty of care – to flesh out the lack of specific legislation and regulations with regard to the relevant installations and activities by means of secondary regulations and permits, include the pilot projects in the spatial planning framework, the structure vision and the zoning plan and provide insight into the manner in which this was done; and
- f) come up with specific ideas to provide practical answers to the research questions, together with the stakeholders involved in the pilot projects.

### **Article 11 Commitment and actions to be taken by the network operators**

The network operators will share their knowledge of the safe, reliable and customer-friendly operation of gas networks, so that the parties can use the pilot projects to explore the enabling conditions for the distribution of hydrogen through both new and existing gas infrastructure.

### **Article 12 Commitment and actions to be taken by the NVDE**

- a) bring the activities of the Green Deal to the regular attention of the NVDE Heat Committee and its Renewable Gasses Task force and to relevant members in the areas of energy saving and installation engineering;
- b) recruit members of the core team and the task forces in which the NVDE can make a relevant contribution from among its employees and/or members; and
- c) support communication activities through its website, general and member newsletters and social media.

## **Organisation**

### **Article 13 Core team**

1. A core team with representatives of all parties will be formed within one month of the signing of this Green Deal.

2. The core team will be charged with implementing and coordinating the progress of the Green Deal.

In any event, this will involve:

- a) keeping track of the bottlenecks, research themes and questions;
- b) organising an initial meeting with the parties, partners and residents of the pilot project districts to determine what is necessary to answer the research questions;
- c) drawing up a timetable for the task forces to elaborate the research themes and questions identified during the initial meeting;
- d) elaborating specific proposals for solutions to the identified bottlenecks;
- e) drawing up a communication strategy with a view to disseminating knowledge;
- f) organising annual workshops; and
- g) conducting the annual evaluation of the Green Deal.



#### **Article 14 Task forces**

1. In view of the arrangements in Article 4, the parties will, at the suggestion of the core team, form task forces for the purpose of sharing knowledge and exploring the identified research themes.
2. Each task force will be chaired by a member of the core team. The chair will report the results of the task force to the core team.
3. Each task force will determine which parties should contribute to providing solutions. Task forces may invite partners and third parties to participate and to share information and knowledge.

#### **Article 15 Green Deal partners**

1. The parties will also involve partners in this Green Deal that are not themselves a party to the Green Deal, but have indicated that they wish to commit themselves actively to the objectives pursued by the Green Deal. The parties will ask these partners to use their knowledge and expertise in the task forces, to propagate the objectives and results of this Green Deal and to approach and support their networks.
2. The parties will involve the current partners of the pilot projects Hoogeveen and Stad Aardgasvrij and other stakeholders from their network in the implementation of the Green Deal as much as possible.
3. The parties will invite the partners to the workshops to discuss the progress and bottlenecks of the Green Deal and their possible contribution to solving them.
4. The secretary of the core team (at the Netherlands Enterprise Agency) will keep an overview of the partners involved in this Green Deal and their efforts in this respect. The partners at the time of signing the Green Deal are listed in Annex I, along with a brief explanation of the contribution they are able and willing to make to this Green Deal. Annex I is for information purposes and is not an integral part of the Green Deal.
5. New partners can register with the Netherlands Enterprise Agency.

### **Concluding provisions**

#### **Article 16 Implementation in compliance with Union law**

The arrangements and agreements in this Green Deal will be implemented in compliance with the law of the European Union, in particular insofar as the arrangements and agreements are governed by European rules regarding public procurement, competition, state aid and technical standards and regulations.

#### **Article 17 Amendments**

1. Each party may petition the other parties in writing to amend the Green Deal. The amendment will require the consent in writing of all parties.
2. The parties will consult with one another within six weeks after a party has petitioned the other parties for a consultation in writing.
3. Copies of the amendment and the declarations of consent will be attached as annexes to the Green Deal.

#### **Article 18 Admission of new parties**

1. New parties may be admitted to this Green Deal.
2. The parties will actively approach new parties that are able to contribute to achieving the aim of the Green Deal.
3. A new party must notify the secretary of the core team (at the Netherlands Enterprise Agency) in writing of its request for admission. In this request, the new party must indicate the capacity in which it wishes to contribute to the Green Deal, indicate that it endorses the aim and basic principles of the Green Deal and indicate which action(s) it intends to take and/or in which action(s) it will take part.
4. Once all parties have consented to the request for admission in writing, the new party will receive the status of party to the Green Deal and will become subject to the rights and obligations arising for it from the Green Deal.
5. The request for admission and the declaration of consent will be attached as annexes to the Green Deal.



**Article 19 Evaluation**

1. The parties will evaluate the implementation and progress at the end of this Green Deal.
2. The evaluation will be conducted by the core team. The Netherlands Enterprise Agency will draw up an evaluation report in cooperation with the core team and provide this to the parties and partners.

**Article 20 Termination**

Each party may terminate its participation in this Green Deal in writing at any time, subject to two months' notice.

**Article 21 Compliance**

The parties agree that compliance with the arrangements and agreements in the Green Deal is not legally enforceable.