



InSight 2021

Agreement needed on pre-conditions in hydrogen experiments

Hydrogen is expected to play a significant role in the future in the process towards a more sustainable supply of energy. Various experiments are already being organized, and more pilot projects will be launched soon, where consumers will be supplied hydrogen on a small scale. Various market participants are involved in these pilots, including system operators and energy suppliers. The Netherlands Authority for Consumers and Markets (ACM) finds it important that such experiments take place. The experience that is gained in these pilots can help realize the transition towards a supply of energy where hydrogen plays a key role. In addition, it also provides input for the study commissioned by the Dutch cabinet into the future organization of the market, the division of roles among the parties involved, consumer protection, and safety measures for the supply of hydrogen to consumers.¹

ACM has established that, at the moment, there are no regulations regarding the supply of hydrogen to consumers in built-up areas. That means, among other things, that consumer protection and safety are insufficiently safeguarded. ACM finds this an undesirable situation. ACM also points out that there is no statutory basis for system operators to take part in hydrogen pilots, whereas they are often involved in these pilot projects. ACM is calling on the Ministry of Economic Affairs and Climate Policy (EZK) to introduce new regulations without delay. In the meantime, ACM, together with EZK, other regulators involved, and market participants, wishes to establish pre-conditions regarding safety and consumer protection. ACM will offer system operators that meet pre-defined pre-conditions room to experiment in the transmission and distribution of hydrogen. With these steps, ACM wishes to make it possible that the hydrogen pilots can go through, and that consumer protection and safety are sufficiently safeguarded.

Hydrogen experiments and rules governing such experiments are necessary for the energy transition

In the future, hydrogen can become an important alternative energy carrier for consumers, for example, for heating homes. At the moment, experiments with supply of hydrogen to consumers in built-up areas are already underway as part of current pilot projects. Other pilot projects will be launched soon. These kinds of hydrogen pilots are useful and necessary in order to gain experience with the practical applications of hydrogen as a heat source. In addition, these kinds of pilots can offer valuable information on re-using gas networks and the adjustments that are needed for that. At the same time, the hydrogen pilots do raise questions. Supplying hydrogen to consumers in built-up areas is new, and specific regulations do not exist yet. According to ACM, the most important questions concern safety, consumer protection, and the role of system operators.

Safety

At the moment, there are no specific regulations regarding the installation and operation of a safe hydrogen infrastructure in built-up areas. In addition, there is currently no regulator that will enforce safety regulations in pilot projects or that can take action if something goes wrong. ACM finds that

¹ For example, see the [Dutch cabinet's vision on hydrogen](#) (in Dutch) of 30 March 2020 and the one on the [Green deal H2-districts](#) (in Dutch) of 11 March 2021.



an undesirable situation, because the safety risks with hydrogen are very real, especially in built-up areas. Such risks must be mitigated, also in pilot projects. And sound oversight will help in that.

Consumer protection

Sector-specific regulations on the energy market will offer consumers protection on top of the general consumer protection rules. For example, consumers are able to choose their own suppliers, and will always get their energy supplied, even if their supplier goes bankrupt. In addition, they cannot be disconnected from the energy networks just like that. Furthermore, ACM regulates the tariffs that system operators are allowed to charge for network connections and energy transmission. That is how we prevent consumers from paying too much. When it comes to the supply of hydrogen, there are no such regulations in place that protect consumers and safeguard affordability, reliability, and security of supply. That is why ACM wishes to draw attention to consumer protection in hydrogen pilot projects. In such pilots, too, consumer interests must be safeguarded properly, including oversight thereof.

Division of roles

Current regulations do not give system operators any room for launching hydrogen activities, not even in pilot projects. Network companies, which are the group of companies to which system operators belong, do have statutory latitude for hydrogen projects. They are allowed to install and operate hydrogen pipelines and installations, and they are allowed to transport hydrogen, but they do not play any role in production, trade, and supply of hydrogen.² No special statutory restrictions apply to energy suppliers.

Safeguards are needed soon

EZK expects to have drawn up a temporary framework by the end of the year. With that framework, risks and uncertainties can be dealt with in a responsible manner within hydrogen pilot projects.³ These specifically concern safety issues. In addition, an exploratory study will be carried out in the so-called Green deal H2-districts (Green deal). In this Green deal, arrangements have been made between public and private actors, including ministries and system operators, regarding joint studies into the supply of hydrogen in practice.

ACM is looking forward to the study's results, and expects that the experiences from the Green deal will be important for the development of the statutory framework and pre-conditions for hydrogen pilot projects with regard to safety, consumer protection, and the division of roles. According to ACM, the Green deal does identify the right topics to be studied. At the same time, ACM does find that the Green deal does not offer any solution for the short term. The study still needs to be launched. In addition, the Green deal does raise the question of what role the system operators will play when the pilot projects will actually commence. As already noted, a possible role as hydrogen system operator is not compatible with the current statutory framework. So that framework needs to be amended before the Green deal's pilot projects will be launched in practice.

ACM wishes to set pre-conditions for hydrogen pilot projects, and give system operators room

Anticipating new legislation and the results of the Green deal, ACM, together with EZK, other relevant regulators, and market participants, wishes to set pre-conditions for hydrogen pilot projects in built-up areas. With such pre-conditions, ACM wishes to ensure that safety and consumer protection are safeguarded in experiments, and that hydrogen pilot projects in built-up areas can

² In the very near future, ACM will give more clarity regarding the role of network companies, with its guidelines on the statutory role of network companies in alternative energy carriers.

³ [State of affairs of the policy agenda of the cabinet's vision on hydrogen](#) (in Dutch) of 11 December 2020, p. 5-6.



take place, even if system operators are involved in them. More concretely, ACM wishes to make arrangements about (1) the safety requirements for hydrogen pilot projects in built-up areas, including oversight thereof, and (2) the way in which consumers are protected in such pilot projects, including oversight thereof.

In addition, ACM believes that it is important the system operators are able to gain experience with hydrogen transmission and distribution, and with re-using gas networks for hydrogen transmission. This experience can help realize a smooth transition to hydrogen and thus to a more sustainable supply of energy. That is why ACM wishes to allow system operators to experiment with hydrogen in built-up areas in well-defined pilot projects, as long as they meet and continue to meet the pre-determined requirements, and, as such, the safety and consumer protection have been safeguarded.⁴ In these situations, ACM will not enforce the relevant laws against the system operators involved.⁵

Market participants notify ACM in advance of their experiments so that ACM is able to assess whether the pre-conditions have been met. In general, ACM is thinking of the following pre-conditions:

- The experiment concerns the use of hydrogen as a source of heat in built-up areas.
- The safety of the hydrogen transmission has been safeguarded, including oversight thereof.
- Consumers get all the required information in advance in order to be able to make a well-informed and free choice to take part in the pilot project.
- Consumers that take part in a pilot project take out an energy contract for the duration of the pilot project (connection, distribution, and supply), providing them a certain degree of certainty. In such contracts, clear and reasonable arrangements are laid down about rates and conditions of supply, among other aspects, including the reliability and security of supply.
- The system operator's role is limited to the construction (or re-using of gas networks), operation, and maintenance of the hydrogen network and the thereto-related resources. System operators are allowed to perform the transmission/distribution of hydrogen over the network, but do not play any role in the production, trading, or supply of hydrogen.
- The experiment contributes to a clearly pre-defined learning objective of the system operator, which has been set with the consent of all parties involved, where the system operator shares, during and after the experiment, the results with the market in a transparent manner.
- The experiment's scope is not larger than necessary for achieving the learning objective.
- The room that is offered is temporary, until the system operator's role has been laid down in regulations, the experiment's learning objective has been achieved or it has turned out that the learning objective is not feasible in real life.

If the pre-conditions are no longer met or not met, the experiment cannot go on or must be suspended. According to ACM, a pilot project is temporary, by its very definition.

⁴ See also [Focus areas of ACM for 2021](#), p.2.

⁵ Until recently, the Dutch legislature wanted to give system operators a temporary duty with regard to the transmission and distribution of hydrogen. However, this duty appeared not to be compatible with the existing statutory framework. See [State of affairs of the policy agenda of the cabinet's vision on hydrogen](#) (in Dutch) of 11 December 2020, p. 5. ACM believes that the latitude for experimentation that it proposes is in line with and fits the temporary duty that the legislature had envisaged.



ACM is ready to flesh out these pre-conditions in consultation with EZK, other regulators such as State Supervision of Mines (SodM) and the Human Environment and Transport Inspectorate (ILT), and other market participants involved. In this context, ACM expressly mentions SodM and ILT, because they have specific expertise with safe transmission of natural gas in built-up areas and with high-pressure transmission of natural gas. According to ACM, this kind of experience is important for determining what safety requirements are needed for transmitting hydrogen safely and supplying it within built-up areas.

In this year's edition of InSight, ACM focuses on hydrogen pilot projects within built-up areas, because, in the current hydrogen pilot projects and plans, hydrogen is supplied to consumers in built-up areas. ACM does not rule out that pilot projects where system operators experiment with hydrogen transmission/distribution outside built-up areas can also be desirable. Should that be necessary, ACM is also ready to consider allowing experiments for system operators outside built-up areas. This is separate from the room for experiments discussed in this InSight.

Clarity from EZK needed about the role of system operators

Finally, ACM asks EZK to provide clarity as soon as possible about the role of system operators with regard to hydrogen and in hydrogen pilot projects. Clarity about the future statutory role of system operators will also help ACM create and flesh out the room for experimentation in this edition of InSight, and, by extension, will help promote the energy transition. If the pilot becomes more permanent, the system operator's envisaged role will have to fit in the then relevant rules and regulations.