

Five Questions for Federica

As the pace of decarbonising Europe's building stock to meet the 2050 climate targets intensifies, heating systems are increasingly recognised as an important vehicle for the sustainable transition. But just what heating system innovations and initiatives are shaping Europe's future?

In our new series *Five Questions for Federica* we sit down with our Secretary General Federica Sabbati and explore heating developments at the European level. In our first interview, Federica reflects on the Clean Hydrogen Alliance's round table for buildings, which met earlier this week.

1. Q: This week, 20 CEOs of European businesses met as part of the European Clean Hydrogen Alliance round table for buildings. Could you summarise the mission of this Alliance and why you are excited to be involved?

FS: The *EU Clean Hydrogen Alliance* is an initiative of the European Commission and brings together businesses developing technologies for clean hydrogen in Europe. There is a real cross-section of actors involved: from energy companies producing and transporting hydrogen, to those sectors where hydrogen will be used such as industry, transport and residential applications...so, buildings! As EHI, we facilitate the operational work of the Alliance in the buildings Round Table, as clean hydrogen can complement clean electricity to reach climate-neutrality by 2050.

It is exciting because there is a lot of innovation in this field: high-tech solutions for utilising hydrogen for heating are already entering the EU market.

2. Q. What is meant by clean hydrogen?

FS: The Clean Hydrogen Alliance defines *clean hydrogen* as produced from renewable sources and, during a transition period, low-carbon hydrogen. This means fossil-based but with carbon capture as well as electricity-based hydrogen with significantly reduced full life-cycle greenhouse gas emissions compared to existing hydrogen production. The priority for the long term will be to develop fully renewable hydrogen.

3. Q. Why are green gases such as clean hydrogen important for buildings?

FS: European buildings are very diverse. Just think about it: a house on the French riviera, a cottage in rural Ireland and a skyscraper in the middle of Frankfurt. They have in common that they all need to be climate-neutral in 2050. Given this diversity, it is going to be very, very difficult to have one single technology that fits all these diverse realities. We need more options.

We know that *electrification* with hybrids and heat pumps will play a very big role in 2050, but even the most optimistic decarbonisation scenarios from the EU Commission is not giving more than 34% electrification of heating in buildings in 2050. There needs to be solutions for the remaining buildings that will not be decarbonised in this way. This is where hydrogen and other green gases can play a role, to achieve decarbonisation for 100% of our buildings by 2050.

4. Q. Is hydrogen in buildings a reality now or is it a medium-longer term ambition?

FS: In terms of technologies? Condensing boilers that are on the market today can already take 10% hydrogen - if it was blended in. But the new technologies that will be put on the market in the next year are already able to take 20% hydrogen blended into the gas grid. This is already real. It can happen now. There are several pilot projects in Europe today, which are testing both blends or pure hydrogen for heating buildings. And more are to come, especially through the commitments of many European businesses working together within the EU Clean Hydrogen Alliance.

As the amount of available hydrogen increases, some areas of Europe will be ready to use 100% hydrogen. This is why heating manufacturers are developing appliances that are 100% hydrogen ready, meaning boilers installed to work with gas, but that are ready for a conversion to operate safely and efficiently using 100% hydrogen.

5. Q. What are the hurdles for the deployment of green gas and hydrogen technologies for heating?

Increasing green gas supply is key to shift from fossil fuels to green ones. EU legislation can help in several ways: for example, EU level targets could be introduced for decarbonised and renewable gases, because we know that these are very effective in increasing supply. Green gases should count towards the renewable energy and the heating and cooling targets that EU governments need to comply with. Putting a price on CO₂ emissions from buildings, coupled with support for replacing old heating equipment, so as to protect energy poverty households but push the move away from fossil fuels.

In addition, consumers should know that they can use also green gas to heat their homes as an alternative to fossil gas, and thus that they can play a part in the EU Green Deal. The energy label is a useful instrument to that end, and it should clearly indicate to consumers what appliances can use green gases, including hydrogen.