



Global Energy Solutions e.V.

For Prosperity and Climate Neutrality

Interview Thomas Frewer

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Bert Beyers: We are talking about the GET H2 project. The goal is to enable a hydrogen economy in Germany. What is your job in this big project?

Thomas Frewer: Indeed, it is a big project. It consists of different parts for the production and transport of green hydrogen via upgraded natural gas pipelines, up to applications in the process industry. For example, at our BP refinery in Gelsenkirchen. My role is to be responsible for BP's involvement in the project. The other project partners are RWE Generation SE, Open Grid Europe, Nowega, Evonik and RWE Gas Storage West. We are working together in a very trusting manner to realise this complex project together.

Where does this project stand at the moment?

The pipelines that will be used already exist to a large extent. They are existing natural gas pipelines. Essentially, they belong to the so-called "low calorie" natural gas network, which is increasingly underutilised. We will have to add some small pieces, but the pipelines are there, they just need to be converted. That is one of the great strengths, that we can use existing infrastructure. The location for generation already exists: an RWE gas-fired power plant near Lingen on the Ems. We can also use the existing infrastructure there to make rapid progress in setting up hydrogen production on an industrial scale.

Converting existing natural gas pipelines for hydrogen transport - is that difficult?

There has been experience in the industry with the operation of hydrogen pipelines for a very long time. It may not be so well known to the public, but hydrogen pipeline networks already exist today in both Germany and the Benelux countries, mostly privately operated. For decades they have been safely transporting hydrogen on a significant scale, from production to industrial application. The conversion of pipelines is technically relatively simple. It is necessary to check which valves or gate valves may need to be replaced. But the actual pipeline body, if it is made of certain materials, is basically suitable for transporting hydrogen.

What are the next steps at GET H2?

We want to scale up hydrogen production in three stages. In the first stage, a 100-megawatt production facility is to be built at RWE in Lingen on the Ems. The hydrogen produced there will be transported 130 kilometres to the BP refinery in Gelsenkirchen. In the second stage, an expansion to 200 megawatts is to be achieved in 2025. And in the third stage in 2026, the step will be taken to 300 megawatts, and the partner RWE Gas Storage West wants to commission a converted cavern storage facility for the storage of hydrogen. We have a core consortium of six partners working together here. And we are currently in the process of transferring this cooperation into firm contractual forms.

Can you already see anything?

At the moment, you can mainly see technical drawings and draft contracts. The technical coordination between the individual projects is very far advanced. We are waiting for the funding decision, which we hope will be awarded to our project within the framework of the European hydrogen programme. Unfortunately, we don't expect the decision this year. But we hope to be able to make the final investment decisions with the funding decision in hand by the beginning of next year at the latest.

So the investment decision has not yet been made.

It can only be made once the funding decision has been made. The partners are making considerable efforts to keep the project on schedule.

When will you start building?

We want to start in spring 2023 with preparatory work on the construction site for generation and, at the latest, in the middle of next year with the conversion of pipelines. Contracts for the provision of initial time-critical services and materials should be ready for signature soon.

What are the hurdles in the project?

I can think of four different challenges we are facing. I have already spoken about the delayed funding decision. The second challenge is that all the steps we are taking now and all the expenditures we are already making in preparation are at our own risk. And of course this will increase over the time we wait for the funding decision. The third challenge is, of course, the ambitious integrated schedule for all partners: Only if everyone keeps to their schedule can the start-up of the betting chain take place! And finally, and this is the fourth challenge, our project will only be able to fly economically if the final regulatory framework conditions for the project are also clear. The issue here is that green hydrogen must be recognised as a way of meeting the greenhouse gas reduction targets of fuel manufacturers. Here we have been waiting for one or two years for an overdue EU directive that regulates the use of green electricity for the production of green hydrogen. And, of course, also for the implementation into national law here in Germany, where we could already be much further ahead.

It's about the definition: What is green electricity?

Exactly, there is the so-called Renewable Energy Directive 2 (RED II). It regulates which green electricity qualifies for the production of green hydrogen. The final EU regulation is still open.

What does that mean for you in concrete terms?

We want to produce green hydrogen from electricity that comes from an offshore wind farm in the North Sea. And as long as we don't know the final criteria, we can't determine whether the wind farm we have in mind really qualifies. That is one of the uncertainties we are struggling with. And of course the final investment decision will also depend on the assessment of the economic situation of the project.

You mentioned other challenges.

The war in Ukraine has caused considerable upheaval in the European energy market. As a result, electricity costs have risen sharply, of course, as have the procurement costs for materials, for engineering and construction services. We have to deal with these cost increases. All these imponderables have to be reconciled with a demanding schedule and the corresponding contracts between the partners.

Is there any further impact of the Ukraine war on your project?

In general, we have felt a lot of political tailwind. This project pays off very well for the goals of the national hydrogen strategy, which has extremely ambitious expansion targets for Germany. And these can only be achieved if the first large-scale plants go into operation as early as 2024, 2025, 2026 and the corresponding experience is gained. The war in Ukraine has accelerated a number of things, including the realisation of the need to restructure the energy industry in Europe. And that is why the tailwind has increased even more.

If all goes well - what does GET H2 look like in the near future?

With our project we want to create the entry into an industrial hydrogen economy in Germany. And if I take a leap into the year 2030, the high-pressure pure hydrogen pipeline infrastructure in Germany will already be several thousand kilometres long. Pipelines will connect the hydrogen production sites in the north with the centres of consumption. Above all with the process industry in the west of Germany and partly also in the centre and south. And with this, large users who use hydrogen materially, for example in chemical processes, will have a low-carbon alternative. This will be a decisive step towards achieving our national goals by 2030.

Which off-takers are these?

For example, the steel industry, but also the chemical industry, where high-purity hydrogen is already used for catalytic processes. Up to now, this has been hydrogen, which is classically produced from natural gas; in the future, CO₂-free hydrogen will come from electrolysis. In addition, green hydrogen will also become a propulsion energy for heavy commercial vehicles and buses.

Does GET H2 also rely on the import of green hydrogen?

That follows from Germany's goals. Various studies have confirmed that Germany can only secure its energy needs for hydrogen in the medium and long term with imports. We will connect the hydrogen pipeline network in Germany with similar pipeline systems in the Netherlands and Belgium. Later, we will also extend it to other European countries, so that we can produce hydrogen at different locations and feed it into the pipelines. This also applies to countries outside the European Union.

Do you think this vision will become reality?

In principle, yes. We are optimistic in the circle of the six partners. We have a common vision. It fits perfectly with the German government's national hydrogen strategy. It also fits into the picture of the European hydrogen economy. We have been selected as a project for funding. We see the political tailwind for the development of a hydrogen economy in Germany. And the project partners are committed to making their contribution to achieving the ambitious goals.