

Hydrogen and decarbonisation of industrial companies - Podcast with Claude Conrard

There is a clear goal: zero net carbon emissions by 2050. The aim is to comply with international agreements in the face of the climate emergency. The European Union is focusing on renewable hydrogen, as demonstrated by the French and German national strategies unveiled in 2020. Claude Conrard is a member of the GRTgaz Stakeholders Council. He is here with us today to discuss this trend, giving his dual perspective as a former industrialist and energy specialist.

Claude Conrard, good morning.

C.C. : Hello.

There is currently a real enthusiasm in Europe for renewable hydrogen. Is this good news, in your opinion, for industrial companies involved in decarbonisation?

C.C: It will be good news if the French and European public authorities take this enthusiasm on board at a moderate pace. Industrial companies have obviously been committed to reducing their emissions for some time. In terms of the chemical industry, we believe that we have reduced our emissions for the equivalent production by 40%. So now, hydrogen – one energy vector among others – will have to be developed in a measured – i.e., efficient – way, at the lowest cost and competitively, but with reasonable long-term profitability for industrial companies. Beyond that, other conditions will of course need to be met. But we are somewhat confident in principle.

What are these conditions for you?

C.C: These conditions are, of course, already in place at the regulatory level. We need to understand the French and European sustainable framework under which we will be able to build and operate our decarbonised facilities over time.

Second, we will need temporary investment aid, as the sums involved will be enormous. We're talking about billions, not hundreds of millions. We will need support both for the investment and the additional operating costs during the initial years. Next, this wonderful hydrogen we are hearing about will have to be sold at a reasonable price over time. So it will need to be guaranteed by competitive contracts that have yet to be negotiated. And there is one final point that is highly relevant to industrial companies: we believe priority should be given to decarbonising industrial platforms, initially with hydrogen, rather than building too many service stations too quickly all across France. Let's not lose focus on the huge financial windfall we will need over the next two decades.

Why, in your opinion, should we prioritise the conversion of industrial platforms?

Why do these platforms need to be converted to hydrogen first? On the one hand, it's for reasons of efficiency. In other words, switching a part of France's energy operations to hydrogen is a good thing, but it will be extremely expensive. So it's in our interest to reduce a lot of CO₂ emissions quickly through well-controlled investments. And doing it on industrial platforms will be a step in the right direction. Conversely, if we decided to set up hydrogen-based mobility service stations throughout France, this would cost much more, you understand, while reducing CO₂ emissions far less. So it's a question of efficiency. Now, a second point: we will have to build a hydrogen infrastructure and support it with large consumers who will generate continuous hydrogen flows

leading to storage considerations, etc. Only later we will connect small consumption sectors, such as mobility.

And how, practically speaking, can we carry out these conversions?

C.C: So this is where we get down to the nitty-gritty. Alongside the industrial platforms that I mentioned, we will have to install large electrolysers. We're talking about a “gigawatt factory”. Second, storage facilities will be needed, as hydrogen will be produced upstream at the rate of renewable energy production but not necessarily at the rate needed for industrial consumption. And third, serving industrial facilities will require networks, which in turn will be connected to neighbouring networks. All of this will obviously be very expensive. And it will take a big commitment from the State to orchestrate.

Claude Conrard, how do you see the renewable hydrogen production sector developing in industry?

C.C. : Industry involves both the big platforms that I mentioned earlier and also small mid-caps, innovative laboratory projects, etc. The hydrogen that is produced initially – should we distribute a little of it everywhere at the same time? We probably need to be careful. I really don't think small local production units spread throughout France should happen within 15-20 years. I think this would be expensive. First, we will have to start with large single projects. This will happen at the regional level: territorial projects supported, of course, by a commitment from the region. These regions will then connect with each other. And then these large regions will connect with other countries. The present “MosaHYc” project is a good example of this. The project is already international, but it is genuinely regional. I have used the acronym: “MosaHYc” stands for Moselle Sarre Hydrogen Conversion. This is a project to set up 100 km of pure hydrogen network by 2026. It is practical, relatively small, very fast and between two countries that will be at the forefront of hydrogen development. It is very interesting. I think it deserves a lot of support.

Thank you very much Claude Conrard for this enlightened perspective on hydrogen development.