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Fraunhofer launches English and Spanish version of atlas showing global Power-to-X potential also in Chile

In a joint event organised by the Fraunhofer Institute for Energy Economics and Energy Systems Technology, Fraunhofer IEE, Fraunhofer Chile and the Energy Centre of the University of Chile, the Spanish version of the "Global PtX Atlas" was launched. This is a freely accessible online application that shows global potential for Power-to-X technologies at coastal and inland locations outside the European Economic Area.

Electricity-based fuels from renewable energies are regarded as a key instrument for climate protection. These Power-to-X (PtX) products are to replace fossil fuels in sectors where direct use of electricity from renewable energies is not possible. These include in particular the various sectors such as transport (e.g. mining, shipping and aviation) and industry (e.g. steel, chemicals).

The Global PtX Atlas, which was presented by the Fraunhofer Institute IEE and can also be accessed on the Fraunhofer Chile website, shows the assessment of the technical and economic potential based on extensive analyses of, for example, the availability of land and climatic conditions. Factors such as local water availability, nature conservation, investment security and transport costs were considered in this analysis.

Key factors and results

According to project manager Maximilian Pfennig, this platform provides a long-term view on the production possibilities of green hydrogen and CO_2-neutral fuels produced sustainable with renewables energies, The PtX Atlas was created as part of the DeVKopSys projects and is continuously being further developed funded by the German Federal Ministry for Economy and Climate Protection. The aim of the project is to scientifically investigate development paths in the transport sector that are compatible with the Federal Government's climate policy objectives in feedback with other sectors of the energy system.

"With the atlas, interested parties can access, among other things, the areas suitable for PtX, the full load hours that can be achieved there and the possible generation quantities, the respective production costs for the various PtX energy sources and the costs of transporting them to Europe," explains Maximilian Pfennig, who was in charge of the development of the PtX Atlas.

Among other aspects, the atlas shows that it is often cheaper to produce fuels such as eFuels or Ammonia for the European market directly where green hydrogen is also produced rather than in Europe from imported hydrogen. These synthesis products are much cheaper to transport and the CO_2 can be extracted for further processing at these locations by air separation.

Positive evaluation

The Workshop “The Power-to-X potential of Chile and Latin America” took place in the premises of the University of Chile and was part of the network building activity between Fraunhofer IEE and its partners in Chile in the field of renewable energy.

The workshop included presentations from Fraunhofer IEE on current work areas and projects related to green hydrogen as well as room for discussion and dialogue. Participants were able to address their concerns and issues of interest in three working groups guided by the organizers, creating space for networking and to discuss possibilities for joint work between Chile and Germany.

This activity was supported by the German Federal Ministry of Education and Research.

The attendees, professionals from the public, private and academic sectors, highlighted the possibility of having this platform. "For us it is very important to know where the market is at the moment in terms of development, settlement, regulation and policy, because from the demand side it is very interesting to analyse hydrogen developments. There is a lot of talk about its potential, but there are many doubts about its status at the moment and how feasible it is that we can incorporate it into our operations in the near future in order to meet our decarbonisation goals," said Rubén Ocampo, Energy Efficiency Leader in Glencore's Decarbonisation Management.

Angel Caviedes, representing the New Technologies Unit at the Ministry of Energy, highlighted that "it is very important for us to be able to collaborate in the emergence of this new industry, especially in this initial stage. The emergence of the Green Hydrogen industry is a new area that is developing not only in Chile but also in the rest of the world, and this instance of collaboration and sharing information and learning both in Germany and Chile is fundamental".

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According to Rodrigo Palma, Director of the Energy Centre of the University of Chile, "the cooperation between Fraunhofer and Chilean universities, as in this case the Energy Centre of the University of Chile, we believe that they are key to deepen the long-term work between Germany and Chile. This is key to achieve the ambitious energy transitions of both countries.

Fraunhofer IEE offers customized, in-depth analyses

With the interactive Global PtX Atlas, interested individuals can independently perform extensive evaluations. If desired, Fraunhofer IEE experts can provide support - they offer customized, in-depth analyses.

The methodological approaches and the data basis as well as the most important aggregated results of the analyses are described by the Fraunhofer researchers in a working paper, which can be accessed via this link : https://arxiv.org/abs/2208.14887

URL zur Pressemitteilung: https://www.fraunhofer.cl/en/press/news/cset-news/fraunhofer-launches-english-and-spanish-version-of-atlas-showing.html

URL zur Pressemitteilung: https://maps.iee.fraunhofer.de/ptx-atlas/