

Power-to-X Technology

- ▶ Power-to-X technology refers to transforming electricity into other forms of energy carriers. This transformation generally occurs when there is an excess of renewable energy production, notably solar and/or wind. The technology falls into two broad categories:
 - ❖ *Power-to-Heat*: Produces heat for industrial processes and urban heating networks;
 - ❖ *Power-to-Gas*: Produces hydrogen by electrolysis. Hydrogen obtained this way can be stored or used to produce other gases (methane), synthetic fuel (*Power-to-Liquid*) and chemicals such as ammonia (*Power-to-Chemicals*).

Green hydrogen, the future of energy

- ▶ Through "Power-to-X" technology, hydrogen appears as the most promising solution for storing electricity and for decarbonizing a number of sectors (transport, industry, heating, ...) where electrification is difficult (high cost, unsuitable infrastructure, ...).

- ▶ Recognizing the potential of green hydrogen, both in economic and environmental terms, a number of countries have implemented policies and solutions to promote "Power-to-X" technology.
- ▶ Morocco, which seeks to position itself as a future green hydrogen powerhouse and has accordingly signed agreements with European partners, announced its green hydrogen roadmap in January 2021.
- ▶ Spanning from 2020 to 2050, the roadmap sets out a framework for developing Morocco's green hydrogen industry, including fertilizer production, electricity storage and synthetic liquid fuel production.
- ▶ Furthermore, in March 2021, Morocco created "GreenH2", Africa's first green hydrogen cluster. This organization intends to support the emergence of a competitive ecosystem for the industry, via research & development and innovation, with a view to delivering industrially feasible solutions.



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References

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