

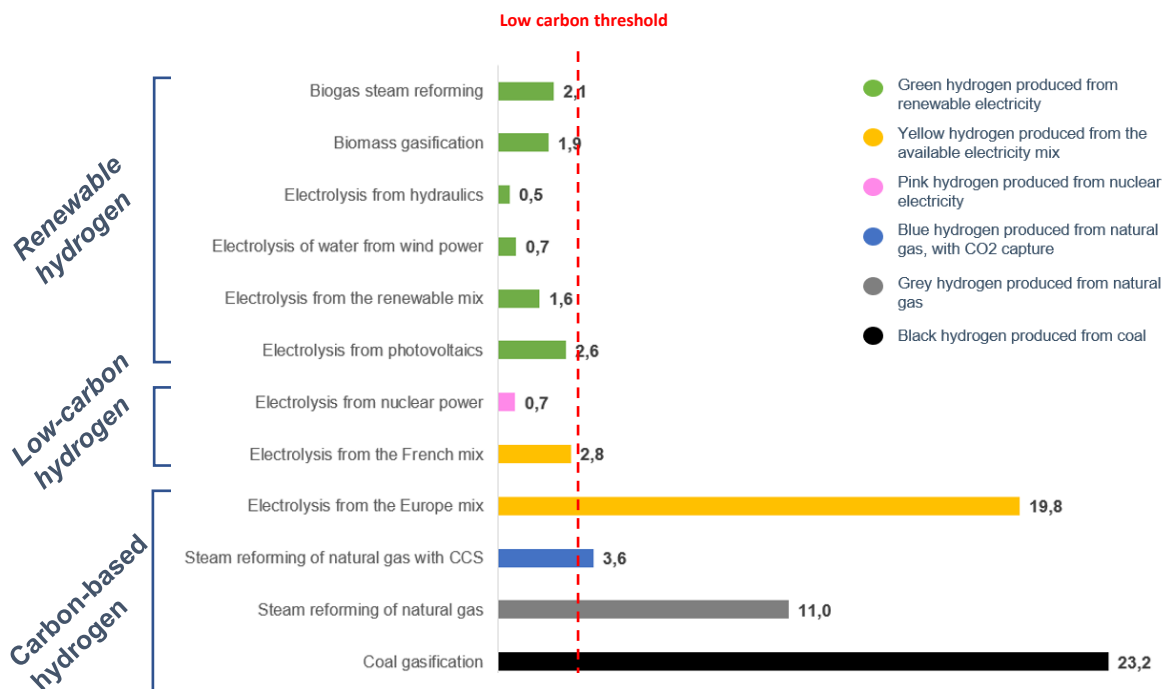
Hydrogen production: what impact in CO₂?

When used, hydrogen emits only water. This is a huge advantage, there are no CO₂ emissions. However, during its production phase, its carbon balance is not completely neutral. Over its entire life cycle, the CO₂ emissions of hydrogen vary according to the production process and of course the origin of the energy.

A color scheme is often used to distinguish the different production methods, but it does not fully reflect the CO₂ impact of hydrogen. This is why the regulations distinguish 3 categories:

- **Renewable hydrogen** is produced by electrolysis using electricity from renewable sources, or any other technology using these sources but without conflict of use (for example, not using food crops). The amount of CO₂ emitted must be below a threshold of 3 tCO₂/tH₂
- **Low carbon hydrogen** is produced by a process emitting less than 3 tCO₂/tH₂
- **Carbon-based hydrogen** is neither renewable nor low carbon.

CO₂ emissions per ton of hydrogen produced (in tCO₂/ tH₂)



Sources : Base Carbone ADEME / PPE 2019 / JRC – WTT 2021



H2V invest, develops and builds large scale renewable hydrogen production plants by electrolysis of water from renewable electricity. H2V is a subsidiary of the French company Samfi Invest, which covers the entire renewable hydrogen value chain: wind farms with Samwind, photovoltaic facilities with Samsolar, production of renewable hydrogen with H2V, distribution stations with Distry and large fleet of trucks with Malherbe Transports, some of which will run on renewable hydrogen in 2023.