

# Establishing a new electrochemical production route for hydrogen peroxide



Visit us  
[www.power2hype.eu](http://www.power2hype.eu)

Contact us  
[info@power2hype.eu](mailto:info@power2hype.eu)



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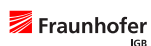


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## Consortium

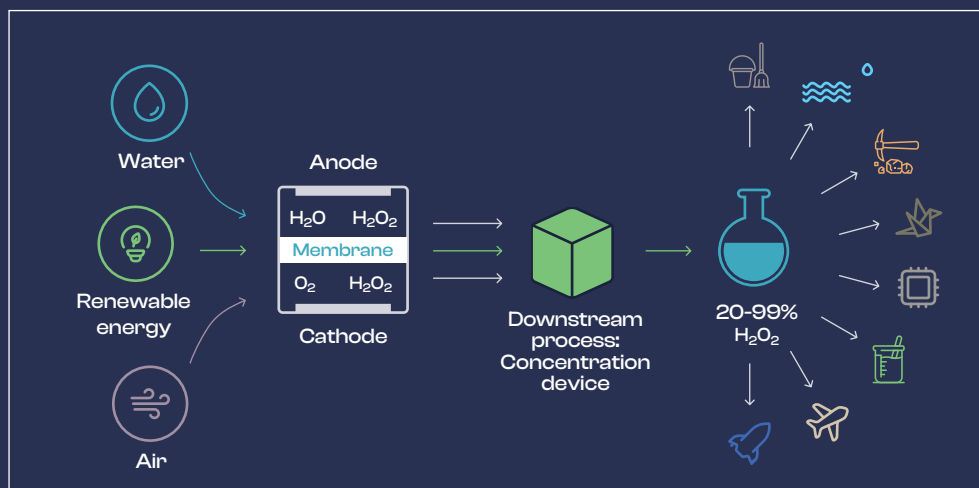


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**Power2Hype is a four-year EU funded research project that will establish a new electrochemical production route for hydrogen peroxide.**

**The Power2Hype approach will revolutionise the traditional and energy-intensive chemical process of hydrogen peroxide production, through the use of air and water as sole feedstock, and renewable energy as the sole energy source.**



## How?

The project develops a sustainable route for  $\text{H}_2\text{O}_2$  production through a pioneering electrochemical process: cathodic oxygen reduction is paired with anodic water oxidation, enabling efficient  $\text{H}_2\text{O}_2$  production in both half-cells. A downstream processing unit to refine the primary product mixture is developed and integrated with the electrolyser, yielding highly concentrated  $\text{H}_2\text{O}_2$  solutions. In Power2Hype, the entire process chain is demonstrated at technically relevant scale.

## Why?

Like all other industrial sectors, the chemical industry must become  $\text{CO}_2$ -neutral. Hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) is listed among the 100 most essential chemicals globally. A novel production route for  $\text{H}_2\text{O}_2$  is needed that uses sustainable and abundant materials, generates no toxic wastes, includes energy-efficient downstream processing (DSP), facilitates dynamic operation according to the inherent intermittency of renewable energies and allows a decentralised and small-scale production in an economically viable way. Power2Hype aims to develop such a process.