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REDUCING THE COST OF ELECTROLYSERS FOR GREEN HYDROGEN

 AGRICULTURE & ENERGY

A new electrolyser is reducing the energy needed to produce green hydrogen, bringing down the cost of this technology

Spotted: Hydrogen is often touted as a green technology, but although it produces only water when consumed in a fuel cell, the hydrogen itself is generally produced using fossil fuels. Green hydrogen, or hydrogen produced using carbon-free electricity, is a path to decarbonising global hydrogen supplies, but it is generally too expensive today to be adopted at scale.

That may be about to change, however, with a new type of hydrogen electrolyser developed by Advanced Ionics. Ted Dillon, Advanced Ionics' Interim Vice President of Marketing told Springwise that the company's technology reduces the electricity required from around 51 kilowatt-hours (kWh) per kilogramme of hydrogen to just 35 kWh of electricity per kilogramme of hydrogen produced.

Importantly, the technology does not require any rare or expensive metals or ceramics, which are common in other electrolyzers. The company's Symbiotic Electrolysers use process or waste heat to generate steam for powering electrolysis. By tapping into excess heat that is already available in industrial settings, they are able to lower the amount of electricity used for the process.

Advanced Ionics has recently closed a \$12.5 million (around €11.6 million) series A financing led by BP ventures, with additional investors including Clean Energy Ventures, GVP Climate, and Mitsubishi Heavy Industries. Dillon confirmed that the funding will be used to, "expand our team, our facilities, and our work on demonstration projects with future customers."

The drive to adopt hydrogen for use as a power provider has been picking up steam. Springwise has spotted this in a number of recent innovations in the archive, including technology that produces green hydrogen from [bio-waste](#) and a hydrogen-powered [data centre](#).

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Website: advanced-ionics.com

Contact: advanced-ionics.com/contact

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Takeaway:

Electricity use accounts for up to **75 per cent** of green hydrogen production costs. The lower electricity requirement from Advanced Ionics' technology could reduce the cost of producing green hydrogen to less than \$1 (around €0.9) per kilogramme, if adopted at scale. This makes hydrogen much more realistic as an energy source, and has the potential to disrupt the hydrogen market. The company is currently engaged in a pilot programme with global energy company Repsol Foundation to demonstrate the efficacy of its water vapour electrolyser technology.