Myles Mantle in The Energyst: Green Hydrogen: Industrial Challenge

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“Green” hydrogen could be a significant pillar of a decarbonized economy. But there are significant challenges to overcome.

On 15 June, at the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth in Japan, the EU, US and Japan announced their trilateral cooperation on hydrogen and fuel cell technologies, that hydrogen and fuel cells are part of a sustainable energy portfolio key to opening up opportunities and value in transportation, industry and other sectors, as well as enabling reliable, clean and affordable electricity. This announcement coincides with a report from the IEA, entitled The Future of Hydrogen, and the announcement that there are now 60 major global corporations signed up to the Hydrogen Council. This all points towards serious support for hydrogen production and utilisation, and in particular where that production and utilisation is CO2 neutral.

Production and Utilization

Currently the majority of global hydrogen production is from:

- Natural gas – through steam methane reformation (which releases significant amounts of CO2). This method accounts for about three quarters of global production of approximately 70 million tonnes; and
- Coal – through gasification (reacting coal with high-temperature steam plus oxygen under pressure, and then reacting the resulting synthesis hydrogen and carbon monoxide gas with steam to separate the hydrogen).

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