

Climate Change Research Strategy: Energy Efficiency Solutions project

H₂Cuts Trailer

NSW DPI's new H₂Cuts demonstration trailer is a renewably powered mobile barber shop themed as a shearing shed. A partnership with Sustainable Salons allows free haircuts powered by hydrogen at field days and other events.

The H₂Cuts trailer has been developed to initiate conversations with the agriculture sector as it explores pathways to reduce energy costs and move towards low or zero emissions energy sources.

The trailer demonstrates hydrogen fuel cell, solar photovoltaic and lithium ion battery storage technologies. Information about energy efficiency measures to reduce on-farm energy costs and emissions developed under the NSW DPI Climate Change Research Strategy is also provided. The trailer builds awareness of important issues such as where agriculture sources its energy, fuel security, transitions to electrification, developing technologies, recycling and the circular economy.

Free haircuts at the H₂Cuts trailer



H2Cuts trailer energy technology

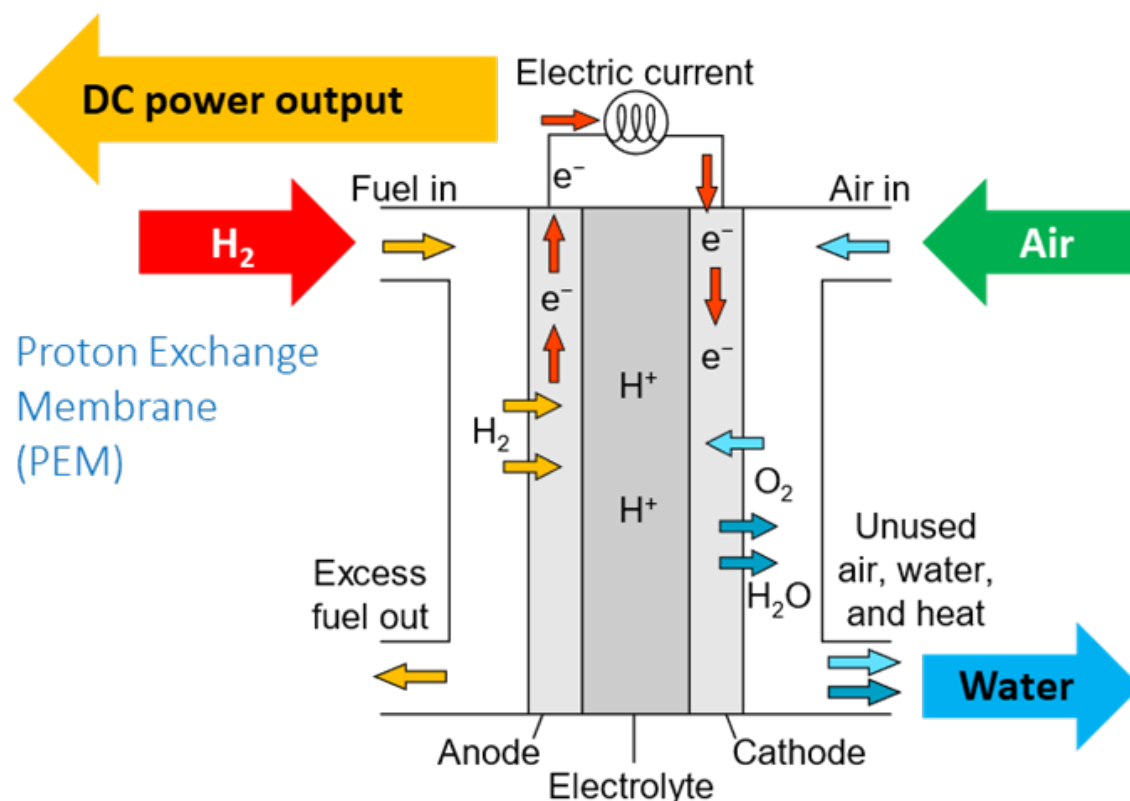
The key energy technology components being demonstrated in the H2Cuts trailer are a 2,000 watt hydrogen fuel cell (right hand cabinet), 800 watts of solar panels (on roof of the trailer), a 100Ah 24v lithium ion battery and a DC/AC power inverter (left hand cabinet).

Pure hydrogen gas is supplied by gas cylinder (green cylinders either side of cabinets), reacting with oxygen from the air inside the fuel cell to create electrons (power). Variable output voltage from the hydrogen fuel cell is filtered to 26.8v DC. DC power is supplied to a DC/AC inverter and 240v AC power is supplied to the power outlets, providing a maximum load of 2,000 watts. In light load conditions excess power is used to charge the battery.

H2Cuts hydrogen cylinders and equipment



Hydrogen fuel cell diagram



Find out more at: <https://www.dpi.nsw.gov.au/climate/climate/energy/clean-energy/hydrogen/h2-cuts-trailer>

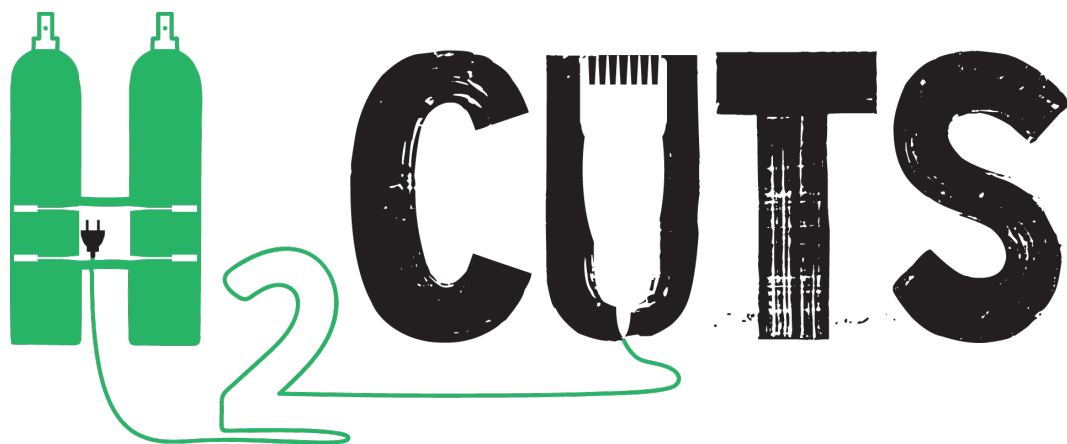


Acknowledgments

The H₂Cuts trailer is an initiative of the Energy Efficiency Solutions project of the NSW Primary Industries Climate Change Research Strategy, funded by the NSW Climate Change Fund.

Reference: DOC21/104072

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