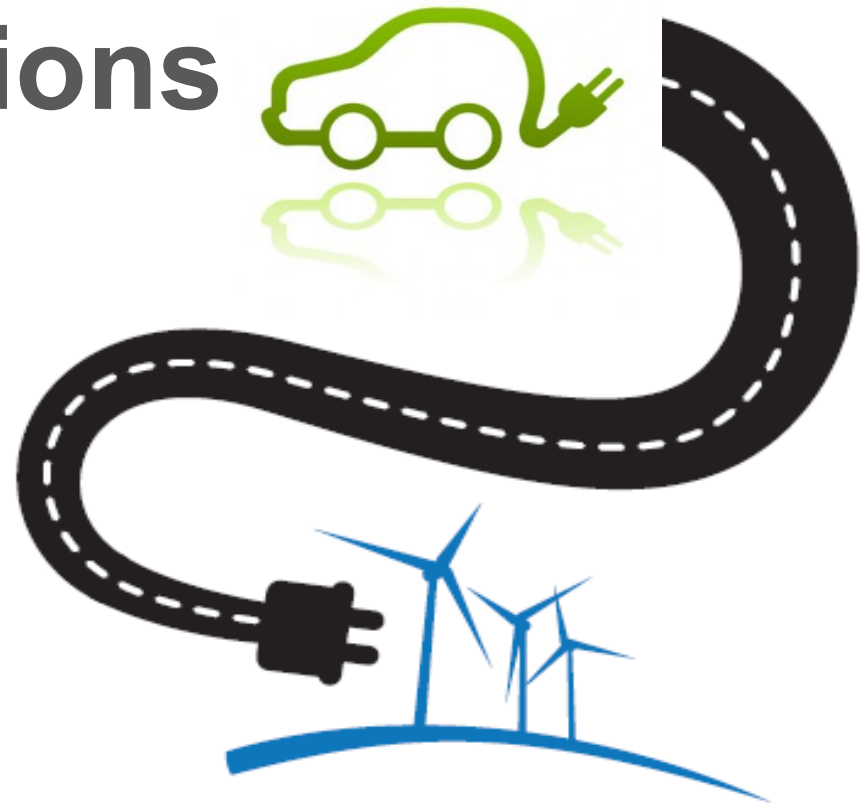


Transition to Zero Emissions Fleet



Purpose

- Understanding the need to reduce emissions from fleet operations;
- Recognising the inefficiencies associated with continued use of internal combustion engines;
- Acknowledging the devastating environmental and social impact the combustion of fossil fuels is having on the natural world;
- Progressively moving renewable energy into the fleet fuel space



Electric Vehicle Trial

– Successful participation in the Vic EV trial



Moreland City Council

**Report on electric
vehicle trial:
Pre-drive & post-drive
data
2012**



Prepared by the Council Planning and Performance Branch



Electric Vehicle – Fleet Feasibility Study

Electric Vehicle Fleet Feasibility Study

transport | community | industrial & mining | carbon & energy



Prepared for: Moreland City Council
Client representative: Stuart Nesbitt
Date: 7 August 2014
Rev00

Purpose

- To understand the pros/cons of moving Council's light fleet vehicles to EV;
- To promote the wider environmental & social benefits and operational savings opportunities to fleet operators and local government;
- To demonstrate leadership in sustainable transport transition



Feasibility Study - Key Focus Issues

- Carbon emissions;
- Peak oil;
- Local air quality;
- Alignment with renewables & NCOS;
- Lifecycle operational savings;
- Reputation/Leadership



Feasibility Study – Base case comparison

- Whole of life cost of ownership analysis



VS



Results: *“The benefit cost ratio for the adoption of Nissan LEAFs in the Moreland City Council fleet in place of Hybrid Camry’s at 7% discount rate was 1.48 indicating a sound investment” – Pitt & Sherry 2014*

Fleet EV's

- Successfully operating EV's in Councils fleet



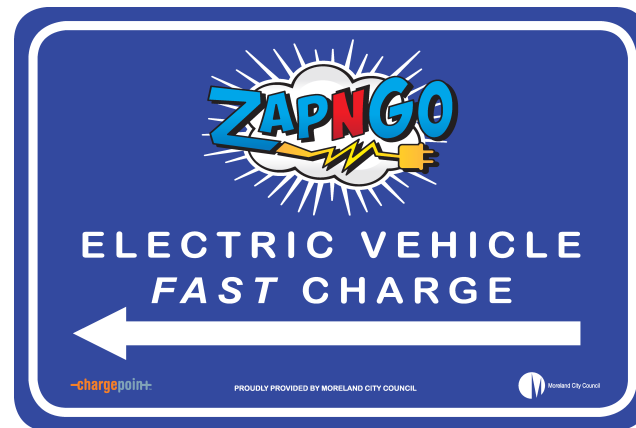
Charging network

- Developed the largest network of public EV charging stations owned/operated by a Council



ZapnGo!

....including Victoria's first EV *FAST* charge station!



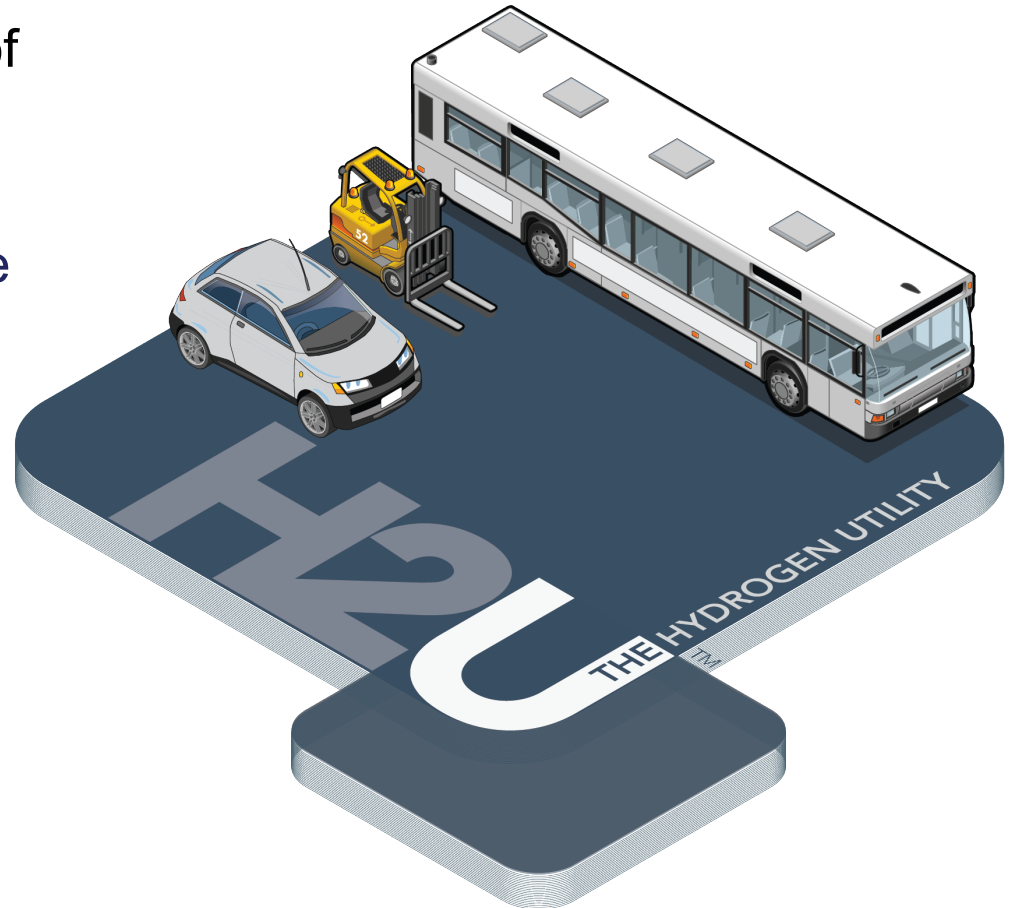
Hydrogen as a heavy Fleet Fuel



Hydrogen Fleet Feasibility

H2U is a specialist developer of infrastructure initiatives for

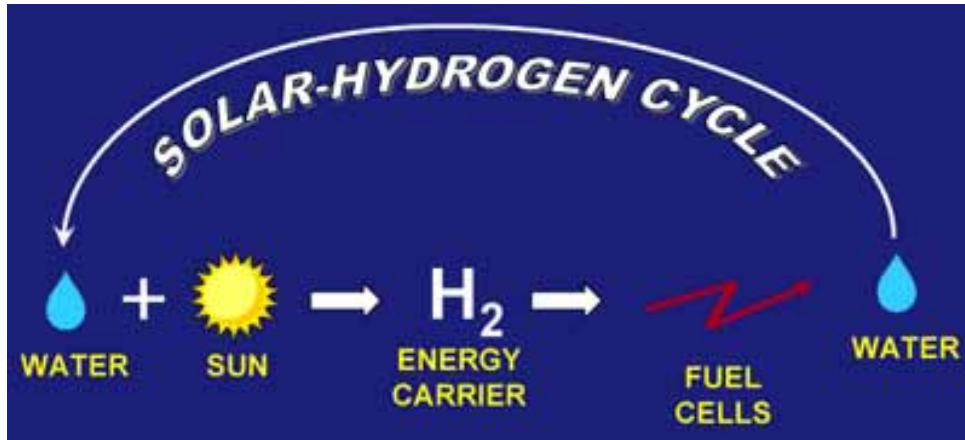
- Hydrogen Mobility
- Renewable Energy Storage



Purpose

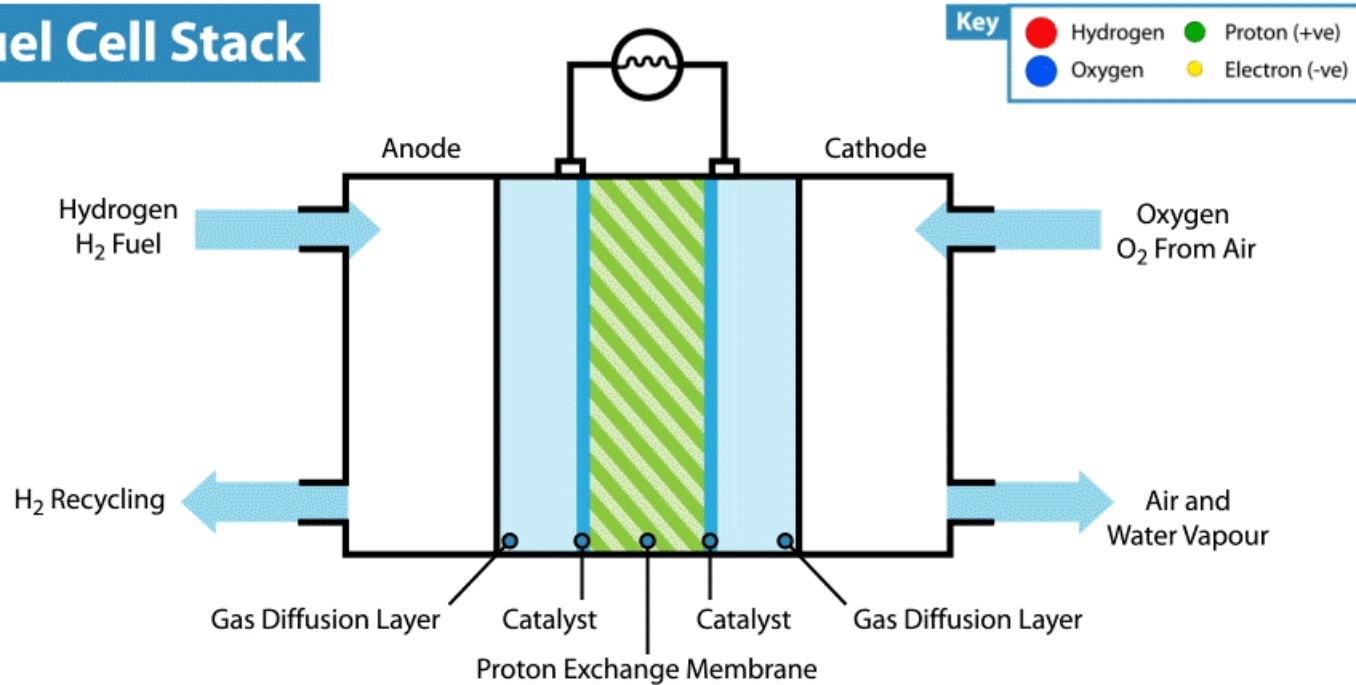
- Understanding the need to reduce emissions from heavy fleet operations;
- Recognising the inefficiencies associated with continued use of internal combustion engines;
- Progressively moving renewable energy into the fleet fuel space;
- Acknowledging the power to weight ratio limitations of current battery technology;
- Reduced noise (70%) from heavy fleet vehicles

How it Works?



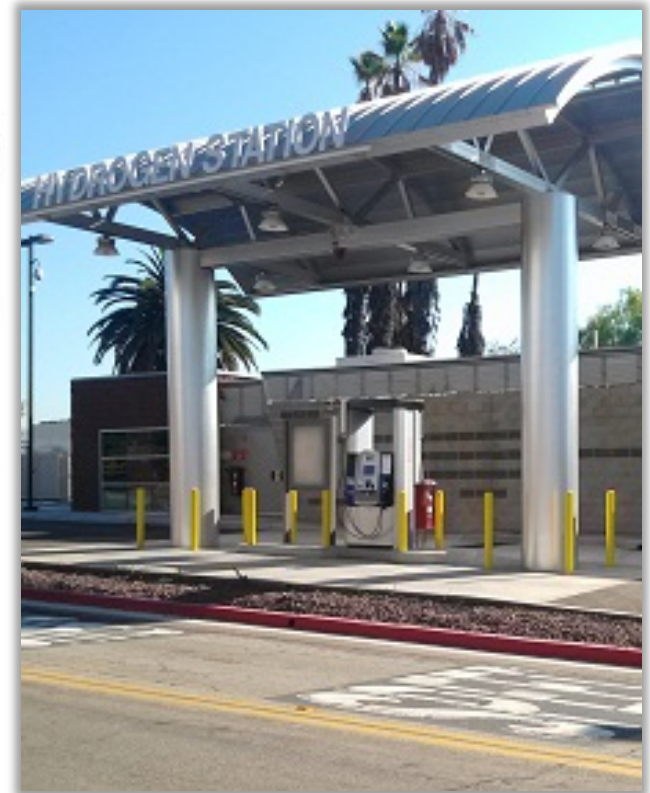
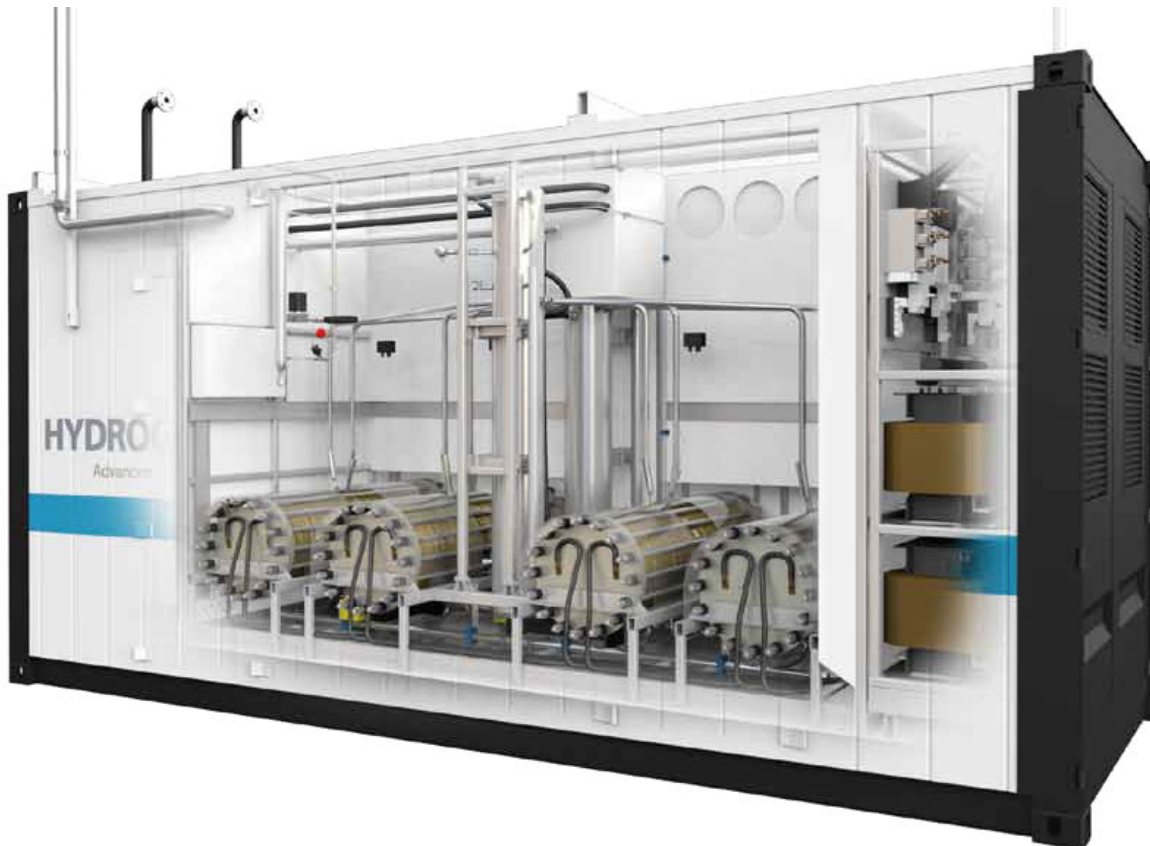
How does a hydrogen fuel cell work

Fuel Cell Stack



Hydrogen refuelling infrastructure

- Is hydrogen production and refuelling infrastructure ready?



Hydrogen FCEV heavy vehicles

- Where are the hydrogen fuel cell heavy vehicles?
- Council and project partners working with manufacturers and government to develop purpose built prototype waste vehicles



Next Steps...

- Fleet policy to incorporate an EV purchasing hierarchy;
- Fleet replacement budgets calibrated to incorporate RoI savings from EV operations;
- EV's integrated into the fleet replacement program where applicable;
- Host hydrogen refuelling infrastructure and assist in the development of a prototype fuel cell waste collection vehicle



Electric Vehicles...

A new idea??



Maybe not.....

Failure to impose a cost on fossil fuels to reflect damages arising from their combustion effectively amounts to a subsidy and consequently an inefficient use of energy resources.

The “polluter pays principle” is an irrefutable concept.....





Moreland City Council



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