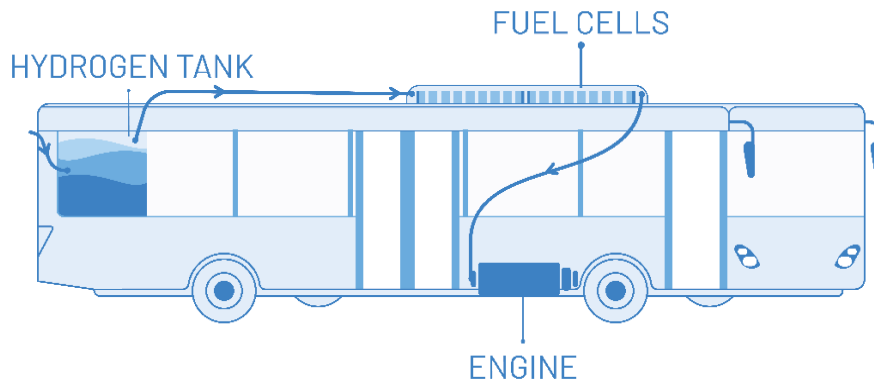


Metro Tasmania Zero Emission Bus (ZEB) Trial Bulletin January 2023

Welcome to the fourth bulletin about the Metro Tasmania – Zero Emission Bus (ZEB) Trial. In this bulletin we provide an overview of a Fuel Cell Electric Bus (FCEB) and how it works.



What is a FCEB and how does it work?

- A FCEB has many similarities to a battery electric bus, including how it is operated, with the key difference being it uses hydrogen as the main energy source rather than rechargeable batteries.
- The hydrogen is stored under high pressure in specially designed hydrogen tanks. An on-board fuel cell combines the hydrogen with oxygen from the air through an electrochemical reaction to produce electricity and water. There is no combustion involved.
- The electricity powers the electric motor, while the ‘exhaust’ is simply water released as steam. There are no associated greenhouse gas emissions, as the trial is using locally made ‘green hydrogen’ produced from Tasmanian renewable hydro, wind and solar energy.
- FCEBs still have a battery (although smaller than in a BEB) which allows for regenerative braking and can provide an extra power boost when required.
- The key advantages of FCEBs compared with BEBs are typically longer range (due to the higher energy density of hydrogen) and quicker refuelling times (comparable to a diesel bus). However FCEBs are currently relatively expensive, reflecting the additional complexity of FCEBs and the early stage of development of the hydrogen market.
- Safety is a key priority for Metro. The FCEBs used in the trial will be required to comply with appropriate regulations and standards, and appropriate maintenance and training arrangements will be in place to ensure the FCEBs are safely operated.
- The trial will investigate how the FCEBs perform over the full range of operating conditions experienced across the Hobart network. It will provide valuable insights, both for Metro and also for the broader emerging Tasmanian hydrogen industry.

Keep an eye out for the next bulletin which will provide an overview of a hydrogen refuelling station.