GAMAA

Gas Appliance Manufacturers Association of Australia

GAS Connections

ACT to trial up to 100% green hydrogen in gas network, in Australian first

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An Australian-first project to test whether renewable hydrogen derived from excess solar and wind energy can be used in existing gas networks and appliances to replace natural gas is underway in the Australian Capital Territory.

The trial project, a partnership between the Canberra Institute of Technology and ACT network operator Evoenergy, will test up to 100 per cent hydrogen in a number of practical situations where natural gas is currently used.

Officially launched on Tuesday by ACT environment and energy minister Shane Rattenbury, the test facility will be rolled out in three phases over the coming 12 months.

The first phase will run tests on existing Australian network components, construction and maintenance practices on 100 per cent hydrogen.

Phases two and three will test hydrogen as a broader grid-scale energy storage source, and test hydrogen and mixed gases in existing appliances like gas cooktops and hot water systems.

“This first of its kind facility will allow us to gain a clear understanding of the impact of introducing hydrogen to existing infrastructure,” said Evoenergy gas networks branch manager Will Yeap, at the launch.

Rattenbury said the trial would help to determine what modifications or replacements might be necessary to allow the introduction of hydrogen into the natural gas distribution system. “This trial here in Canberra has a very practical application, looking at how we can use (green hydrogen gas) through our pipelines here in the ACT, what impact it has on the pipelines, how it burns out the other side.

“We’re testing here facilities such as a cooktop and looking at how hydrogen will go through the burners, how much hydrogen you can blend into the system and, ultimately, can you completely replace natural gas with hydrogen.”

At the same time as these tests are being conducted, CIT will also use the facility to train plumbing students in new technologies, to make them “skill-ready for the future,” he said.

“The ACT government will be looking at the results of the test facility closely as it looks to ways to achieve its ambitious target to reach zero net emissions by 2045.

“We’ve got 100 per cent of our electricity due to come from renewables by 2020. That will reduce our emissions by 40 per cent. We now need start looking at the next phase, of how we are going to start to tackle the remaining emissions,” Rattenbury said at the launch.

“Hydrogen has a real potential in that space. Whether it’s in replacing natural gas, that’s currently used a lot for heating and cooking purposes, or whether it’s used in the transport sector; we don’t know how it’s going to play out, but this sort of experimentation and testing is going to help answer a lot of those questions.” Read the full article here

David Norman the CEO of the Future Fuels CRC advised GAMAA that “this is one of the four pilot plants currently under construction around the country (others being ATCO Perth, Jemena Sydney and AGIG Tonsley SA). ENA representatives visited the site last week.

Both Craig de Laine (GM People and Strategy AGIG) and I were lucky to see the site in person.

It is a very small laboratory type electrolyser, powered by solar PV panels at the same industrial site, linked to several small H2 bottles for storage.

The Hydrogen (and later H2/CH4 blends) is then piped through a small nylon and PE network in a sand box to simulate the materials and connections their company has within its ACT asset base.

Associated with this is also a site shed containing a several appliances and a hot-water heat on the exterior as well as a H2 BBQ. All for running on 100% H2 and future blends”.