A national hydrogen centre

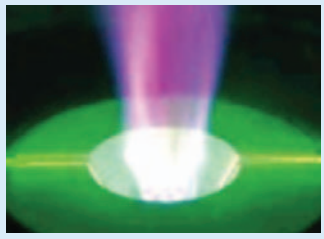
CSIRO Chief Scientist, Dr Robin Batterham, speaking at The Hydrogen Economy Conference in Broome, earlier this year, described Australia as 'a two per cent country'. We make up just two per cent of the world's intellectual effort.

Because of this, he suggests we need to focus our expertise in science and engineering in areas of R&D where we can build a critical mass, and where we expect significant improvements and break-throughs that will help to bring about a hydrogen economy. He believes that, in the big picture, we're not going to be world leaders in overall hydrogen technology, but that we can make important contributions, fill vital niches and form alliances with major players like, say, the European Union and the United States.

CSIRO's Position Paper on The Hydrogen Economy makes the point that 'Australia's investment in hydrogen-related R&D is very low, with little or no coordinated effort'. As a nation, we have relatively little understanding of hydrogen issues.

To address these shortcomings, a National Hydrogen Centre (probably to be called Hydrogen Australia) has been proposed to provide a focus for hydrogen-based activities. Initially, CSIRO is taking a leading role in helping to establish such a group. The centre under consideration is to have a strong national emphasis and will involve stakeholders from industry, educational institutes, governments and the community.

It is to have a virtual national structure and its main activities and functions will be to:



Sandia National Laboratories

Flame from the combustion of hydrogen and methane.

- promote and facilitate the early introduction of a hydrogen economy in Australia;
- act as a broker for technology development and utilisation projects;
- identify and assist local industry with establishment of business and manufacturing opportunities;
- assist with education of the public and industry and with education and training in educational institutes;
- act as a central source of information for access by academia, research institutes, industry, governments and community;
- facilitate and coordinate demonstrations of hydrogen technologies;
- assist with formulation of regulations and policy in relation to the safe generation, storage, transportation/distribution and use of hydrogen; and
- operate international alliances and links.

If it goes ahead, the centre should help to bring about business and manufacturing opportunities in various aspects of a hydrogen -energy economy and establish Australia as a leading technology provider for Asia.
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Australia's future energy focus

CSIRO Energy Technology

The new National Energy Centre in Newcastle is a working demonstration of the latest renewable energy technologies.

UNDER THE NATIONAL Research Flagship, Energy Transformed, launched on 30 October, leading scientists will concentrate on Australia's future energy requirements, positioning us to develop one of the world's first hydrogen economies and a new export industry in energy technology.

The research program aims to:

- develop and implement technologies leading to near-zero emissions, power from fossil fuels and eventually, large-scale hydrogen generation;
- develop cost-effective electricity and hydrogen from renewable sources;
- increase the fuel and traffic management efficiency of urban transport, leading to an eventual transition to hydrogen-powered vehicles;

'Recent power blackouts in the United States, Italy and Denmark demonstrate that total reliance on central power generation is not a wise future option'

- double the efficiency of fuel use (natural gas and eventually hydrogen) by the generation of power/heat/cooling at point-of-use; and
- carry out energy scenario analyses to guide the research activities of the Flagship to achieve the goal of clean, cost-effective future energy for all Australians.

Launching with Energy Transformed is the $36 million CSIRO Energy Centre in Newcastle, NSW. As an international focus for energy research, the building showcases new and renewable energy technologies and represents the largest base of energy research and development in the Southern Hemisphere.

'The new centre is a distributed energy system in action,' says Acting Chief of Energy Technology, Dr Jim Smitham. 'Photovoltaic cells, gas microturbines and wind generators will initially provide most of our power, with any surplus being fed back into the main grid.'

Energy Transformed's Director, Dr John Wright, says that distributed generation will become increasingly important as the demands on national centralised generation and transmission infrastructures increase.

'Recent power blackouts in the United States, Italy and Denmark demonstrate that total reliance on central power generation is not a wise future option,' says Dr Wright.

The National Research Flagships Initiative is a partnership approach to tackling major challenges faced by Australia, and one of the largest scientific undertakings in the nation's history.

Energy Transformed:
http://www.csiro.au/index.asp?type=blank&id=EnergyTransformed