Country Update South Africa

Policy framework

- Funding
- 90% government through HySA Strategy/~10% industry through grants and donations.
- National Development Plan
- Specifically mentions the need to develop HFCT
- Procure at least 20 GW from renewable sources as part of implementing IRP2010
- Reduce carbon emissions per unit of power by one third (0.9kg/kWh to 0.6kg/kWh).
- National Climate Change Response Strategy
- Commitment to reduce emissions
- Achieve the peak, plateau and decline trajectory for greenhouse gas emissions, with the peak being reached around 2025.

Country Update South Africa

Recent Activities

- HySA Systems
- Collaboration agreement signed between Airbus and the National Aerospace Centre to jointly fund a project investigating fuel cell applications in the airline industry.
- Completed the design and installation of a metal hydride pilot production facility.
- HySA Infrastructure
- Anglo Platinum donated a container with 10x5kW fuel cell units from Ballard Power Systems, which was on display during the COP17 meeting.
- HySA Catalysis
- Recently embarked on a field trial of a power pack module for telecoms application in collaboration with Power Cell SE.
- Advanced catalyst development involving the use of innovative support materials.

Country Update South Africa

Recent Activities

Launch of the Fuel Cells for Off grid Rural Electrification Pilot Project (5 August 2014)

- Anglo Platinum/Ballard/Community Initiative
- Project is supplying primary power to 34 homes in the village.

Country Update South Africa

Recent Activities

Deputy Minister of Science and Technology visits HySA Systems CoC (17 September 2014)

Country Update South Africa

Recent Activities

Parliamentary Portfolio Committee on Science and Technology visits HySA Systems CoC (29 October 2014)

Country Update South Africa

Recent Activities

Launch of the Hydrogen Fuel Cell Power Generator at UWC Nature Reserve (18 November 2014)

- DST, HySA Systems CoC & Hot Platinum Initiative
- Fuel cell providing power for lighting up to a maximum of 2.5kW.

Country Update South Africa

Recent Activities

Launch of the Hydrogen Infrastructure Laboratory Facilities at the CSIR (27 November 2014)

- Facilities focusing on Hydrogen Storage using MOFs and CNS
- Development of appropriate codes and standards in consultation with RCSWG

Country Update South Africa

Recent Activities

Minister Pandor officially opened the CARISMA2014 Conference in Cape Town (1 December 2014)

- International Conference to address challenges in the development of robust fuel cell materials and components for stationary and transport applications.
- First time that the CARISMA Conference is being held in Africa.

Country Update South Africa

Market preparation

- General awareness of hydrogen and fuel cell technologies (HFCT) increasing across the country
- Greater involvement of SMMEs in HySA projects
- Telecoms back up power picking up steadily
- Challenge is still remains around hydrogen distribution logistics
- Clean Energy Pty Ltd. working with Air Products to find cost effective way of hydrogen distribution
- Fuel cell deployment in off grid rural electrification has been initiated
- Establishment of the Special Economic Zones with special focus on local manufacturing of components to support emerging green industry.

Country Update South Africa

Power-to-Gas

- Two staff members from HySA Infrastructure spent up to three months working at Hydrogenics, a major producer of electrolysers in Canada.
- HySA Infrastructure received some seed funding from the Technology Innovation Agency to conduct market research to initiate a power-to-gas technology platform
- A solar-to-hydrogen pilot plant installed at HySA Infrastructure at North-West University to demonstrate renewable hydrogen production.
- Department of Energy initiated discussions on a Gas Master Plan taking into account:
  - Availability of gas from other countries in Southern Africa
  - Need to develop a country wide gas distribution infrastructure
  - Economics around use of gas in electricity generation to replace diesel in OCGT peaking plants.

Country Update South Africa

Review of IPHE

- The IPHE has managed to create a global platform through which HFCT is being promoted with respect to:
- Education around Public awareness and acceptance of HFCT
- Development of global standards and best practice on safety and use of hydrogen
- Creation of an appropriate suite of incentives that promote the deployment of HFCT with a focus on hydrogen infrastructure
- The top 3 actions/next steps to be undertaken through IPHE are:
- Greater emphasis on education and public awareness to achieve global acceptance of HFCT
- Creation of a more harmonised global regulations on safety, codes and standards to enable deployment of HFCT
- Greater drive towards the establishment of hydrogen infrastructure.
- South Africa would consider support for education and public awareness to achieve acceptance of the technology