

## UNIDO-ICHET support to hydrogen energy implementation in developing countries

*E. Ture and N. Lymberopoulos*

*UNIDO-International Centre for Hydrogen Energy Technologies*

*e-mail: [eture@unido-ichet.org](mailto:eture@unido-ichet.org), [nlymberopoulos@unido-ichet.org](mailto:nlymberopoulos@unido-ichet.org)*

The UNIDO-International Centre for Hydrogen Energy Technologies was established in 2004 with the mission of demonstrating viable implementations of hydrogen energy technologies and facilitating their use in developing countries. It is a UNIDO project, 100% funded by the Turkish Ministry of Energy and Natural Resources.

To achieve its mission, UNIDO-ICHET uses the following instruments:

- Applied R&D
- Pilot projects in developing countries
- Education, training
- Consulting, provision of technical expertise

In terms of Applied R&D, UNIDO-ICHET is establishing laboratory facilities for the testing of fuel cells, sea water electrolysis, H<sub>2</sub> production through photochemical and gasification routes, H<sub>2</sub> transportation using plastic piping. The same facilities are used for training purposes for visiting scientists from developing countries.

The realization of pilot projects is facilitated through a framework for supporting pre-feasibility studies (10,000 US\$, 100% funding) following a proposal evaluation procedure. Further more, selected pilot projects can be founded by up to 50% of the total budget and to a limit of 500,000 US\$. Targeted countries for such projects are Turkey, India, China, S. Africa.

Support is provided to selected industrial partners in Turkey for developing products or for early demonstrations of a H<sub>2</sub> forklift, a H<sub>2</sub> sea taxi and a sea bus, FC cars and mini buses, H<sub>2</sub>-based UPS systems.

Hydrogen islands are promoted by UNIDO-ICHET as ideal early markets for the implementation of H<sub>2</sub> energy technologies. Besides supporting an international network of interested stakeholders, ICHET is supporting such a pilot project on the island of Bozcaada, Turkey.

Further to the above, UNIDO-ICHET is supporting national governments providing expertise in setting their H<sub>2</sub> strategies (e.g. S. Africa) and is also organizing workshops and educational events in promoting H<sub>2</sub> energy technologies for the developing world.