

# Highlights of R, D & P+D in Switzerland

London, Septembre 20-21, 1999 / 19<sup>th</sup> AFC IEA ExCo

The Fuel Cells R,D&P+D Programme of the Swiss Federal Office of Energy has been launched in 1988. The typical yearly budget has been of the order of 1.6 million CHF. The main emphasis lies on Low Cost stationary natural gas fuelled SOFC ([click here](#)).

The competitiveness of PEFC with rechargeable batteries has led to the international Conference on « Portable Fuel Cells » in Lucerne. In complement, on June 21<sup>st</sup>, took place the (*discussed at Melbourne*) topical workshop devoted to the fuel cell systems, including hydrogen storage in carbon nanostructures. All related 1998 annual reports are available on the web ([click here](#)).

## PAFC:

The 200 kW ONSI PC25A pilot plant of the Geneva gas utilities has been operated for nearly 40'000 hours. This unusually long experience has been the subject of a report, in French, which should be made available on the web. The next pilot plant, a PC25C, will be installed near Basel. It should be delivered early next year.

## PEFC:

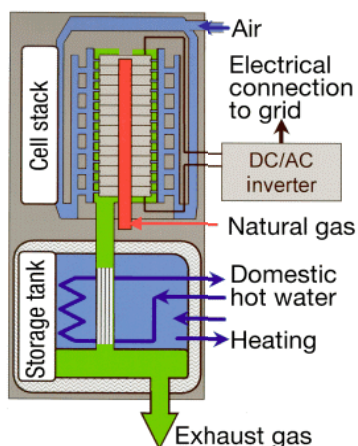


A "300 W Powerpack" prototype has been designed at PSI, in Villigen, and has been duplicated at the Grenchen School of Engineering. The **Hydroxy300** from MW-Line is a two passengers electric boat with a cruising speed of **12 km/h**, while the one seat Hydroxy100 cruises at only 4 km/h. The "Fuel cell fleet" has been demonstrated on June 21<sup>st</sup>. More ergonomically control systems are under development. In view of Low Cost prospect, fluorine free membranes are currently evaluated.

A four passengers electric boat from MW-Line is presently being equipped with a 2 kW unit designed by the PSI, and should cruise at 20 km/h.

A 250 kW natural gas fuelled unit has been order from GEC-ALSTHOM by a electric power company of North-western Switzerland, but no information has been released on its delivery time.

## SOFC:



The SULZER HEXIS 1 kW unit is currently been tested not only in Switzerland but also in Germany, the Netherlands, Spain and Japan. Pilot production of a few hundred stacks a year will start in year 2001. While HEXIS Fuel Cells were originally planned to be operated with Natural gas, reformers are under evaluation to make them compatible with liquid fuels, explaining the presence of Shell among HEXIS field test partners. The integration of the HEXIS module into a compact domestic heating system is under way.