



IPHE – IL Committee BRAZILIAN PERSPECTIVE



Brazilian Actions on Hydrogen Technology

- **Hydrogen production from:**
 - water electrolysis,
 - NG reforming,
 - ethanol and other biomasses reforming or gasification.
- **Hydrogen storage technologies, including advanced materials**
- **PEMFC and SOFC R&D programs**



Brazilian Government Actions

- **Ministry of Mines and Energy**

Hydrogen Economy Program:

- Applications
- Market and commercialization
- Demand for R&D&D

- **Ministry of Science and Technology**

Fuel Cell Program:

- Basic and applied R&D program
- Financial resources to support R&D&D



Fuel Cell Facts

- Former development of 1kW alkaline FC in the 80's.
- National companies (Eletrocell, Unitech) develop PEMFC prototypes up to 50 kW.
- Four 200 kW - PC25CTM - PAFC power plants in operation.
- SOFC development and testing
- Ongoing fuel cell bus fleet project in São Paulo. (8 vehicles).



Brazilian Main Objectives

- To develop national technology for hydrogen production, distribution and use, including fuel cell related products, systems and processes.
- To achieve important results concerning:
 - Economic hydrogen production from water electrolysis and renewable sources.
 - Development of FC knowledge and expertise for distributed power generation.



Priority Issues on H₂ Technology

- Short term:
 - H₂ from ethanol reforming
 - H₂ from hydroelectricity and NG reforming
 - Use of H₂ powered urban buses to improve air quality in large cities
- Long term:
 - To supply power to remote off-grid communities
 - Direct ethanol FC
 - H₂ production from renewable sources such as biomass and from sun and wind driven electrolysis



Final Comment

We highlight the Brazilian proposal presented at the Steering Committee, regarding the creation of a task force to:

- Promote collaboration between IPHE members in order to build an effective technological and industrial knowledge on hydrogen technologies in developing countries.
- Create self-sustained markets oriented by the needs and resources of each country.
- Improve life quality and create more job opportunities with the development of the hydrogen economy.