



Country Report: Italy

Joint 13th IPHE ILC & SC meeting

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Essen, Germany**

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Department for Sustainable Development, Climate Change and Energy**



Main activities

- **National Platform on H2 & FC**
- **R&D National Program on H2 & FC**
- **R&D EU FP Projects**
- **Development Projects for Industry 2015**
- **Regional (public) and industry H2 Demo Activity**
- **EU FC & Hydrogen JTI**
- **Italian Hydrogen & FC Association**
- **HYRAMP Partnership**



National Platform on H₂ & FC

Institution of a **National Platform on H₂ & FC** with the objective of defining a RD&D strategy to support the market development towards a sustainable H₂ Economy for the CO₂ emission reduction.

Priority items 2008-2016: H₂ production from renewables and fossils, transport and storage, power gen, distributed energy production, automotive application, early markets.

Anticipated budget: 10 million Euro for first year



R&D National Program on H₂ & FC

Supported by the Ministry of Education, University and Research and Ministry of Environment Land and Sea through the Special Integrative Fund for Research (FISR)

Funding : 90 M€ Total cost of the projects: 120 M€ Duration: 2005-2010

- **The R&D National Program ended on January 2010**
- **Three year budget of 90 millions Euro (51 M€H₂, 39 M€ FC)**
- **36 RESEARCH CENTERS involved**
- **14 projects (8 on hydrogen technologies, 6 on fuel cells)**



R&D EU FP Projects (6&7 FP)

- **UNIQUE:** Aquila Un & ENEA, H₂ from biomass gasification
- **ZERO REGIO:** FC cars and stations, Mantova & Frankfurt
- **ENFICA FC:** Politecnico Torino, City Aircraft
- **HYRAIL:** Enea & Pisa Univ, H₂ in railways
- **HOST:** Roma Univ, New concept of city cars & city vehicles
- **LIFE:** Emilia Romagna Reg, City bus Mix H₂/NG



Development Projects for Industry 2015

Ministry of Economic Development has launched in the 2007 the “Industria 2015” Programme aimed at assisting **Industrial innovation projects** in different thematic areas

Funding: 30,1 M€ Total cost of the projects: around 70 M€

Duration: 3 years 2010-2012

**ENERGY
EFFICIENCY**

- **MICROGEN 30 / ICI Caldaie** -30 kWe CHP system with PEFC for residential applications
 - **EFESO / Merloni Termosanitari** - 1-2.5 kW micro-CHP prototypes with SOFC
 - **HYDROSTORE / Venezia Tecnologie** - Study and development of storage systems

**SUBSTAINABLE
MOBILITY**

- **VISION /Fincantieri** – Hydrogen ferry for Venice lagoon with fuel cell hybrid system
 - **PBI (Innovative Bus Platform) /Breda Menarinibus-** Systems for the safe and integrated mobility (vehicles and infrastructures for passenger and/or freight transport)



Regional and industry Demo activities (1)

- **Lightening Ercolano ruins (PV 30 kW; FC 10 kW)**
- **FC motorcycle protot: Benevento & Arcotronics**
- **FC blu car (7kW): Emilia Romagna Reg**
- **H2 from renewables: Lazio Reg**
- **H2/NG mix: Lombardia Reg (20 cars, 2 stations)**
- **H2 Center: Lazio Reg**



Regional and industry Demo activities (2)

- **PEM cogen unit: ICI Caldaie Sidera: (electricity, heating, cooling: H₂ from NG ref)**
- **LEAF: zero emission building (advanced insulation and H₂ storage)**
- **IDRA 08: Piemonte reg: Politecnico Torino: FC and high efficiency electric engine**



Regional and industry Demo activities (3)

- **Celco YACHT: Piemonte Reg: Environmental Park (FC 8kW for auxiliary power gen: H₂ from diesel reforming on board)**
- **TURBOCARE: (Siemens): FC powered canteen**
- **Gold District: Arezzo City: H₂ distribution through pipe to gold labs**
- **In Venice first hydrogen 7 m boat with two 5 kW PEM (Polymer Electrolyte Membrane) fuel cells inaugurated in 2009**



Regional and industry Demo activities (4)

Hydrogen power plant (ENEL)

- This power plant (16 MW CC) is situated in Fusina, near Venice in the Veneto region of Italy.
- Powered by hydrogen by-products from local petrochemical industries such as the Eni group's Polimeri Europa factory, it can meet the needs of 20,000 families, while saving emissions equivalent to more than 17,000 ton CO₂eq/y.
- The power station forms part of a project dubbed Hydrogen Park
- This hydrogen power plant will be full operational in 2010. It will provide power to 20,000 households.



EU FC & Hydrogen JU

INDUSTRY GROUPING RESEARCH GROUPING

- SOFC power - CNR
- Ansaldo Fuel Cells - ERSE (ex CESI Ricerca)
- Fiat Research Center - ENEA
 - Sapio - Universities
 - Environment Park
 - ILT Technologies
 - Labor



Italian Hydrogen & FC Association (H2IT)

Established in 2004, today has over 120 members with a large number from the private sector.

-11 Italian companies

- **3 Foreign companies**
- **3 Regions**
- **1 Research Institute**
- **9 Vehicle components producers**
- **3 Univ**
- **93 Individuals**



HYRAMP Partnership

Founding Members:

- **Abruzzo**
- Andalusia
- Aragon
- Baden-Württemberg
- British Midlands
- Castilla La Mancha
- Catalonia
- Galicia
- Hamburg
- Hessen
- Lazio
- Ljubljana
- Lombardy

- Madrid
- Midi Pyrenées
- Nord East of England
- North Rhine-Westphalia
- Oldenburg-Wilhelmshaven
- Piemonte
- Rhone Alpes
- Scandinavian Regions (N, SE, DK)
- **Trento**

New Members:

- Outer Hybrides
- Tuscany
- Bolzano
- Wroclaw



Thank you for your attention

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