

European Union 11-15 April 2011  
Sustainable Energy Week



# Fuel Cells and Hydrogen for Smart Cities in Europe

A joint event by FuelCellEurope, NEW IG,  
EHA and HyRaMP

Palais des Académies, Brussels

13 April 2011



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# Welcome and introduction

- Why this meeting?
- Why fuel cells and hydrogen?
- Who is concerned?
- What is “Smart Cities”?
- What are the next steps?

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# Fuel Cells and Hydrogen

- **FC&H are part of the SET-Plan, Strategic Energy Technologies**
  - Hydrogen: as a clean energy carrier
  - Fuel cells: as efficient power systems, in transport, stationary and portable applications
- **The objectives and action areas of the European Initiative on Smart Cities aim to deploy**
  - Energy Efficiency
  - Renewable Energy
  - Low Carbon Technologies
- **This workshop will showcase currently existing fuel cell and hydrogen technologies solutions in different cities and the latest developments for**
  - Buildings
  - Energy networks
  - Transport.



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## Challenges for Europe:

### 1. Climate change

- A. Reducing GHG emissions
- B. Energy efficiency
- C. Renewable energy storage

### 2. Local air pollution

- A. Road transport has a deep impact
- B. Health care costs

### 3. Economic sustainability

- A. Employment
- B. Energy security

## FC&H have compelling answers:

1. Combined with renewable hydrogen fuel cells can have a **zero emissions**
2. Fuel cells are **the most efficient** energy conversion technology
3. Help optimize integration and **storage of renewable energies**
4. Fuel cells allow considerable reduction in **noise and air pollution**
5. Fuel cells have a great long-term economic potential in terms of **green jobs** potential along the value chain
6. **Hydrogen can be produced from a very wide variety of resources** thus reducing security risk to a minimum



## “Energy = Thermodynamics + Economics + Politics”

### In the past 15 years:

#### **70-80% Thermodynamics:**

- R&D
- Technology development
- Overall design
- IPR

#### **15-20% Economics:**

- Market understanding & preparation
- Educating supply chain partners
- Pilot projects
- Heavily subsidized projects

#### **0-5% Politics:**

- Generate the necessary government subsidies to co-finance the R&D effort

### In the next 5 years:

#### **20-30% Thermodynamics:**

- Design optimisation
- Performance optimisation

#### **40-50% Economics:**

- Cost reduction and industrialisation
- Market deployment
- Supply chain agreements
- Go to market strategies

#### **20-40% Politics:**

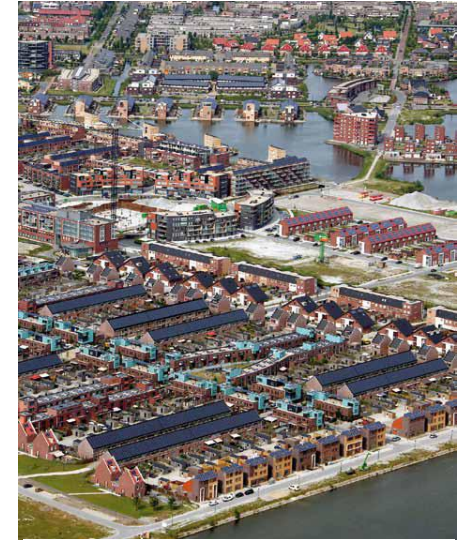
- Large scale demonstration projects
- Impact on energy and environment debate
- Government purchase
- Market access conditions
- Feed-in tariffs
- Regulatory frameworks



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- The Smart Cities Initiative aims to improve **energy efficiency** and to step up the deployment of **renewable energy in large cities** going even further than the levels foreseen in the EU energy and climate change policy.
- This initiative will support cities and regions that take **pioneering measures** to progress towards a **radical reduction of greenhouse gas emissions** through the sustainable use and production of energy.
- It will bring the cities involved to the forefront of the development of the low-carbon economy.





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## Next steps

1. A public consultation on the SCI has been launched by DG Energy and will remain open until the **13<sup>th</sup> May**.
  - The online questionnaire is available at <http://ec.europa.eu/yourvoice/ipm/forms/dispatch?form=2011smartcities&lang=en>.
2. There is a related consultation, on the new Common Strategic Framework for research & innovation funding at EU level: the EC is preparing a Green Paper on the new funding tool to be put into place from 2013 and that should reunite
  - the current Framework Programme,
  - the Competitiveness and Innovation Programme, and
  - the European Institute of Innovation and Technology.

The consultation is open until **May 20<sup>th</sup>**.

- The online questionnaire is available at [http://ec.europa.eu/research/csfri/index\\_en.cfm?pg=questionnaire](http://ec.europa.eu/research/csfri/index_en.cfm?pg=questionnaire)



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# Programme

09h30-09h40	<b>Welcome and Introduction</b>
09h40-10h40	<b>Hydrogen as a sustainable energy carrier</b> <ul style="list-style-type: none"> <li>• <b>Raymond Schmidt</b>, Business development <b>Hydrogenics</b> (Belgium)</li> <li>• <b>Graham Cooley</b>, CEO, <b>ITM</b> (UK)</li> </ul>
10h40-11h00	<b>Coffee break</b>
11h00-11h30	<b>The overall efficiency of hydrogen and fuel cells application in building</b> <ul style="list-style-type: none"> <li>• <b>Michael Braun</b>, sales and marketing manager, <b>Baxi Innotech</b> (Germany)</li> </ul>
11h30-12h00	<b>Fuel cells for zero emissions in passenger transport</b> <ul style="list-style-type: none"> <li>• <b>Jörg Wind</b>, EU-Projects and Energy Systems Analyses, <b>Daimler</b>, (Germany)</li> <li>• <b>Dennis Hayter</b>, VP Business Development, <b>Intelligent Energy</b> (UK)</li> </ul>
12h00-12h30	<b>Vision, potential and scope for FCH technologies in the EU Initiative on Smart Cities (panel)</b> <ul style="list-style-type: none"> <li>• <b>Joost van Iersel</b>, Member of the <b>European Economic and Social Committee (EESC)</b></li> <li>• <b>Pete Daw</b>, <b>Greater London Authority</b>, Policy &amp; Programmes Manager for Climate Change Mitigation &amp; Air Quality (UK)</li> <li>• <b>Adwin Martens</b>, Executive Director, <b>Waterstofnet</b> (Flanders, Belgium)</li> <li>• <b>Andreas Ziolek</b>, Chair of <b>HyRaMP</b> (North Rein Westphalia, Germany)</li> </ul>
12h30-12h45	<b>Q&amp;A and conclusions</b> <ul style="list-style-type: none"> <li>• <i>Debate and discussion with all speakers and participants</i></li> </ul>
12h45-13h45	<b>Networking lunch</b>



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## Question for the panel

### 1. Vision

Are fuel cells and hydrogen in your view a technology that should be included in funding opportunities that would be defined through the smart cities initiative?

### 2. Potential

From your point of view or experience how large/small do you see the potential for FCH technologies to help large cities achieve their emissions/ efficiency targets?

### 3. Scope

Would you suggest that cities have different interests or need for fuel cell and hydrogen applications in transport or heating, or even energy storage?

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