

Update EU and national developments

Marieke Reijalt
Ahmed Assam Aly

HyResponse workshop, September 3, 2014



... in the last 24 hours

September 3, 2014 first public station in the Netherlands

August 26, 2014 Toyota reveals price tag FCEV: \$ 70.000

July 24 Italian Platform Conference

June 5 and 9 2014, stations opened in Bolzano and Malmoe

May, 17, 2014 OECD: cost of air quality will reach \$3,5 trillion/yr

April 1, 2014: EU Parliament approves Alternative Fuel Infrastructure Directive: first article on H₂! Member States who decide to include H₂ in national plans will have to build network by 2025

March 2014: SE, DK, NL, F present National Implementation Plans for HRS development along TEN T corridors (part of HIT project).



EHA Network of National Associations



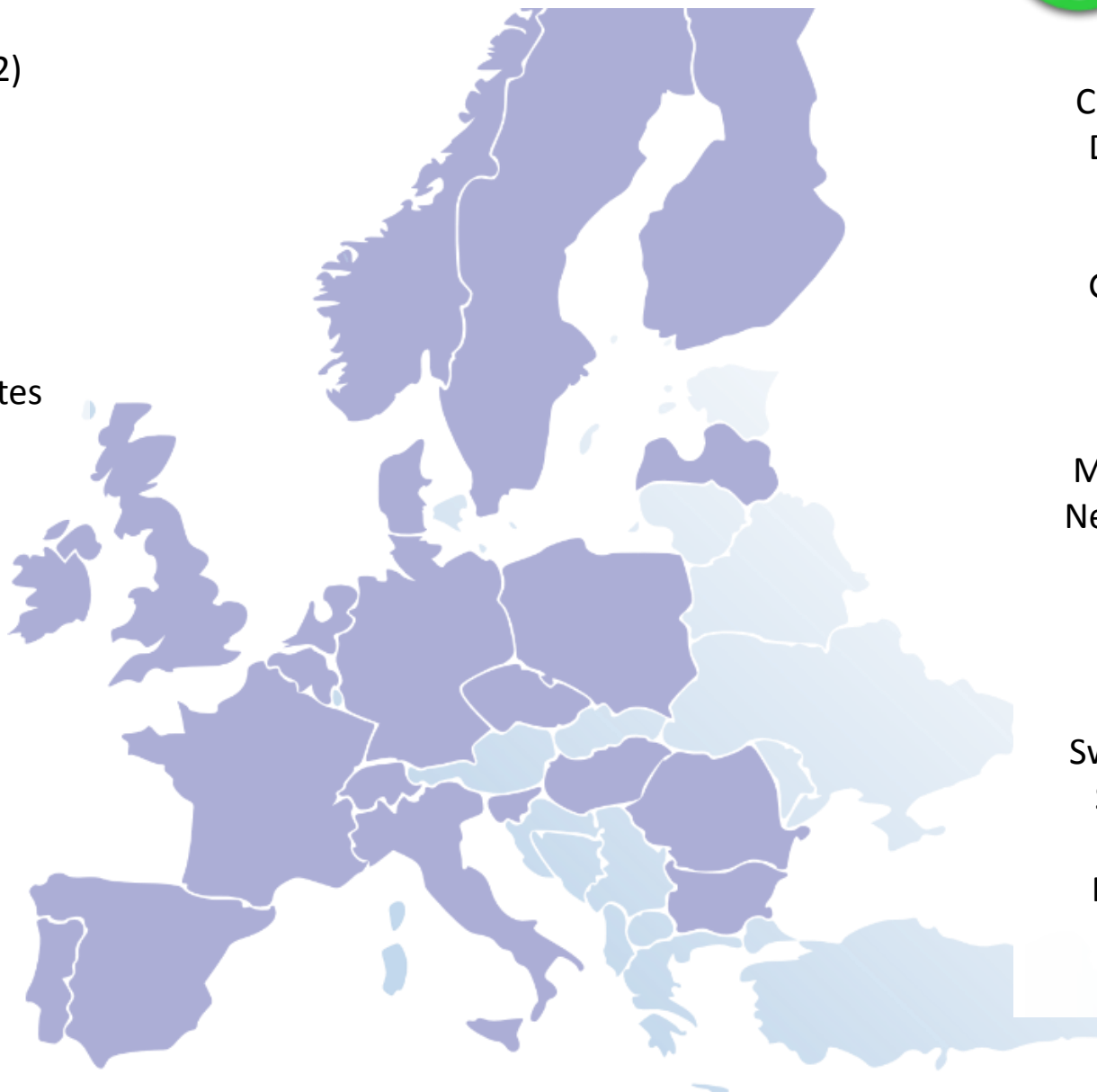
2006 (6) > 2014 (22)

EHA's 22 national
associations are
representing:

300 SME

100 research institutes
and universities

36 regions



Bulgaria
Czech Rep.
Denmark
Finland
France
Germany
Hungary
Italy
Latvia
Macedonia
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
Slovenia
Ireland
Romania
Turkey
U.K.

2009 (completed)

FC-HyGuide

Guidance Document for LCA studies on hydrogen production and fuel cell technologies

SHEL and **HyLIFT-DEMO**

Demonstration of Fuel Cell and Hydrogen forklift trucks

HyPROFESSIONALS

Training initiatives for technical professionals

HyFACTS

Training material for Regulators and Public Safety Officials.

2010-2011

Don Quichote

Renewable hydrogen / PEM electrolyser production to power forklift trucks in logistic of supermarket chain

HyLift Europe:

Large scale roll out fuel cell forklift trucks

HyResponse

Online training material for emergency respond services

2012 - 2014

Alkammonia

Alkaline fuel cell and ammonia reformer development for remote power

Power up

Alkaline fuel cell power system linked to chlor alkali plants

H2Trust

Assess industry efforts to ensure FCH technology is safe

KnowHy

Provide technical specific training modules

Fuel cell electric vehicle FCEV to date

January 2013

- Toyota & BMW to launch FCEV platform by 2020;
- Daimler, Ford & Renault-Nissan develop a common FC system for mass-market cars as of 2017;

February 2013

- Hyundai starts production ix35 FCEV: 1,000 units by 2015;

March 2013

- Hyundai, Honda, Toyota, Nissan, infrastructure companies and Nordic NGOs bring FCEV to Scandinavia from 2014

April 2013

- UK H2Mobility study: 1.6 million FCEV on UK roads by 2030

October 2013

- Toyota and Air Liquide partnership to build H2 stations

November 2013

- Toyota and Honda reveal FC models at Tokyo Motor Show

January 2014:

- Detroit Motor Show: Toyota presents commercial FCEV, calls Renault view of FCEV “from the 90’s”

August 2014

Toyota FCEV costs \$ 70.000

EHA

EUROPEAN HYDROGEN ASSOCIATION

EHA is hosting HyER, 40 FC, H2 and EV active regions



**Together with EHA National Associations
ensure H₂ is included in mandatory
national energy and transport plans for 2016**



EU Policy: Clean Power for Transport (COM2013/17)

EU Commission: two main causes for lack of alternative fuel infrastructure:

1. The technology is substantially mature but the standards are not common EU-wide, thereby discouraging potential infrastructure investors, car manufacturers and consumers
2. The co-ordination failure among vehicle manufactures, infrastructure providers, national authorities and final users must be addressed. Initiatives addressed at promoting infrastructure appear necessary to break this deadlock



EU Policy Clean Power for Transport: Council 5/12/2013, EP Transport 1/4/2014

Under the general approach, each member state will adopt a national policy framework for the market development of alternative fuels infrastructure. The frameworks will include, inter alia:

- an evaluation of the current state and future development of infrastructure
- national targets for putting in place new infrastructure
- deployment measures, including the yearly budget allocated to infrastructure deployment and to supporting manufacturing plants for alternative fuels technologies.

Both EU Parliament and Council have moved targets from 2020 to 2030

BMW Hydrogen Power

Connecting Europe Facility

June 2013 : EC, EP and Council agreement:

EU priority infrastructure in transport, energy and digital broadband.

Budget €33.242 billion for the period 2014-2020:

€26.250 billion will be allocated to transport, out of which €11.305 billion ring-fenced for related transport infrastructures investments in the Member States eligible under the Cohesion Fund.

October 17, 2013:
Core network of 9 corridors was presented

**TRANS-EUROPEAN
TRANSPORT
NETWORK
TEN.CORE NETWORK
CORRIDORS**



National/regional infrastructure networks



Current H2 mobility activities managed by national public private partnerships in Germany, Scandinavia, UK , France, Switzerland, Netherlands:

US H2 Mobility April 2013: HRS roll out of first 68 stations to supply 1.5 million ZEV on Californian roads by 2025 and 68 Hydrogen Refueling Stations by 2015 ;

Japan November, 2013: 40 H2 stations in operation in Japan. Plans to open 100 stations by 2015.

2014: TEN T HIT 2 expanding H2 station network around the Baltic Sea, through Poland, Denmark, Netherlands to France, UK and Germany

First EU TEN T Hydrogen Corridor

- Facilitated by EHA and HyER in 2012:

Started with workshops with car OEM, H2 station suppliers and national and regional authorities.

Netherlands became coordinator and ministries of France, Sweden and Denmark signed off after coordinated lobby efforts.

- Synchronizing National Implementation Plans (NIP)
- Infrastructure en fleet planning in regions
- Regulatory harmonization proposals
- Policy measures and & financial support schemes
- Strategy focusing on market development and scaling up from local initiatives to EU implementation



Co-financed by the European Union
Trans-European Transport Network (TEN-T)



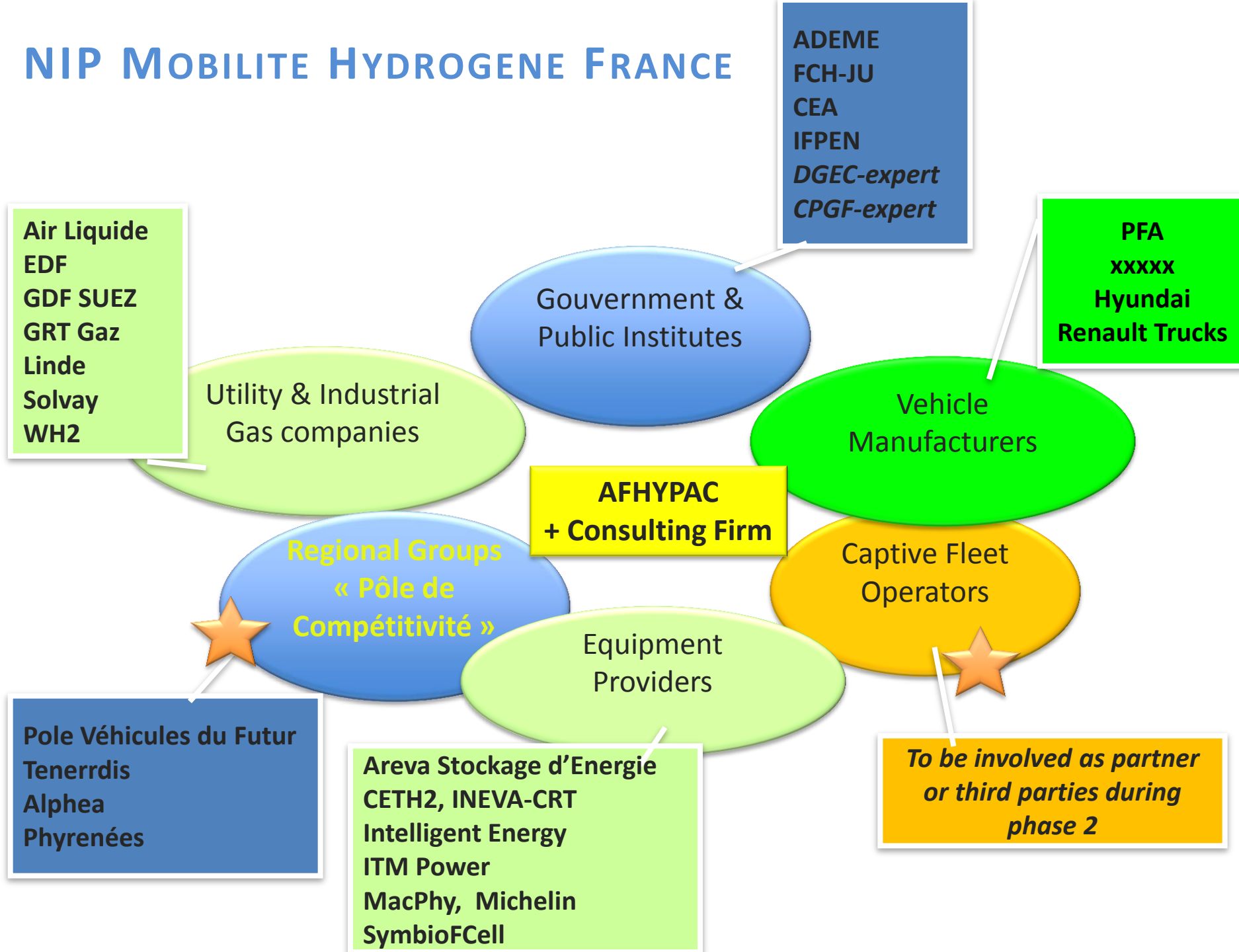
Challenges for H₂ deployment

Challenges

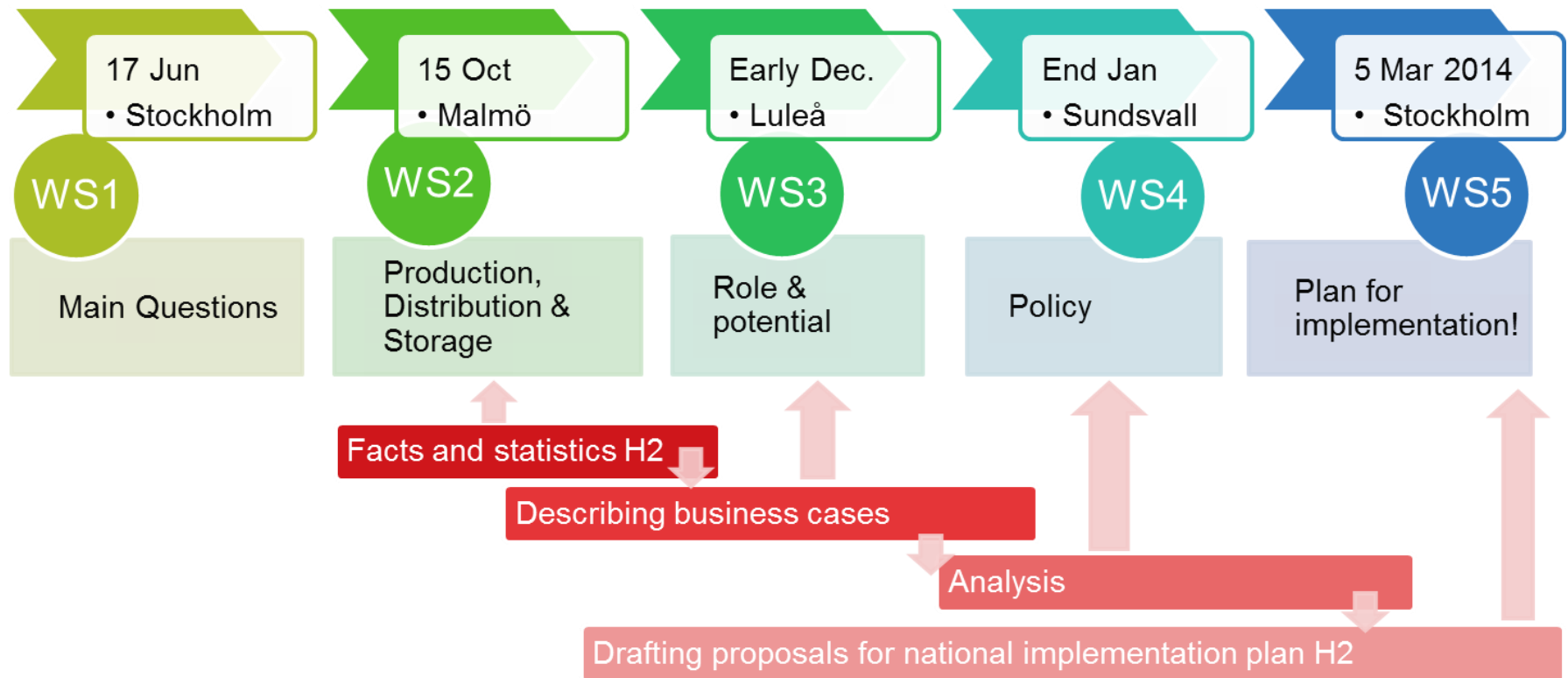
1. Achieving HRS's & FCEV's within the same time interval
2. National & International harmonisation of HRS permitting procedures
3. Linking successfully to the EC's Clean Power Directive
4. Achieving commitment national and regional policy makers
5. To get early markets started
6. Realising cross-border traffic with FCEV's



NIP MOBILITE HYDROGENE FRANCE



Sweden: NIP planning for HIT



Denmark: development of a national H₂ platform

Several private & public initiatives already – synchronization planned during 2014

Previously FCH area and in particular planning mainly private driven with public funding

As technology is preparing for market public side to become more involved in planning



HYDROGEN AND FUEL CELLS
THE DANISH PARTNERSHIP

- *National fuel cells & hydrogen association*
- *30 members (industry + universities)*
- *Public programs are observersk*
- **Formulates R&D strategies & roadmaps**



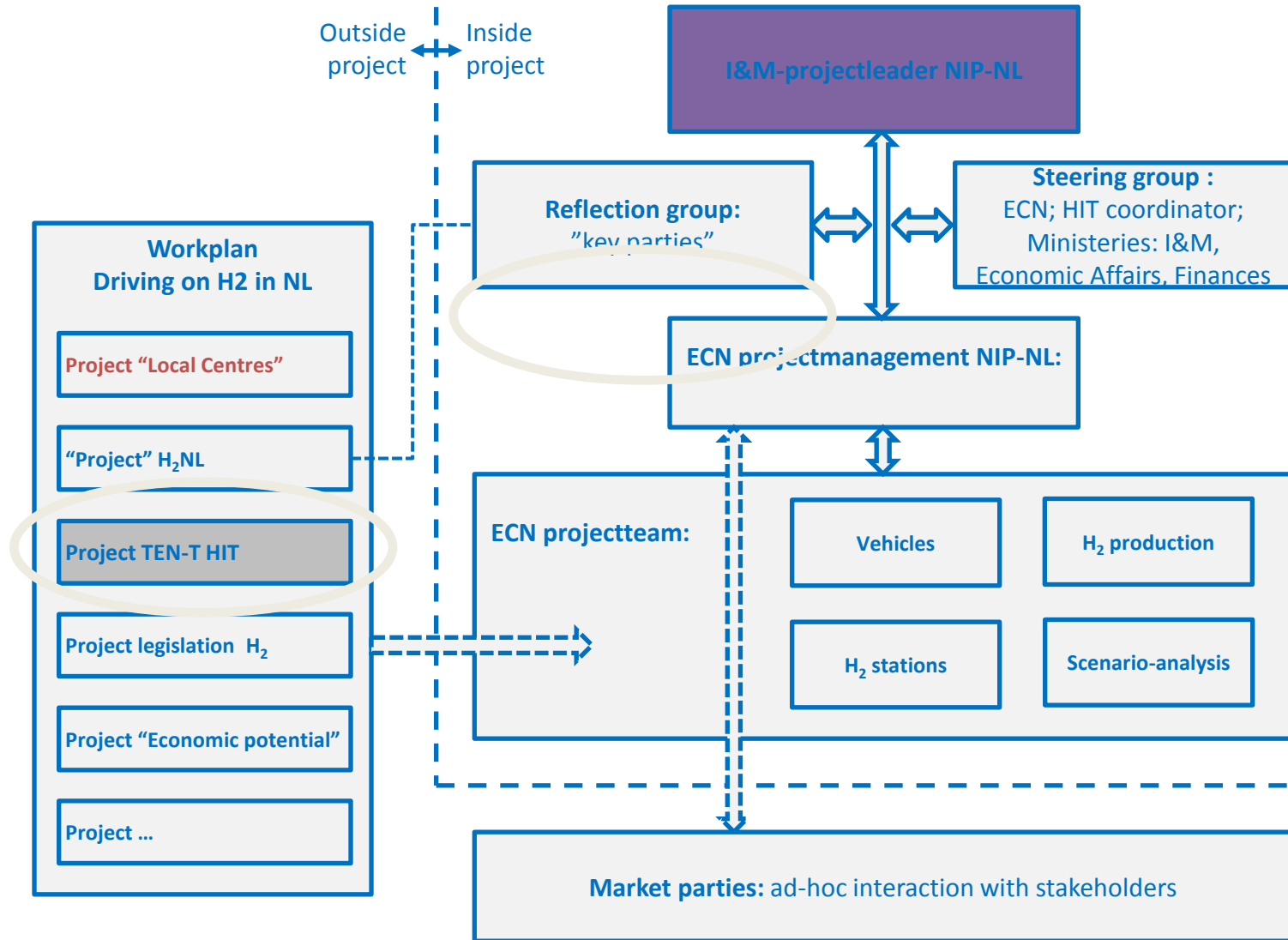
Scandinavian Hydrogen
Highway Partnership

- *DK Scandinavian Hydrogen transport network*
- **Formulates roll-out plans & roadmaps**
- **Handles Nordic MoU with car manufacturers**



- ***Infra program for BEV, Gas & Hydrogen***
- *“Partnerships” to be established for sectors*
- ***Public funding for analyses & infrastructure***
- *The results are to guide future public efforts*
- *Private initiatives to apply for “partnerships”*
- *Plan to apply for “H2 partnership” in 2014*
- *Existing analysis & HRS efforts to act as basis*
- ***Apply for additional HRS's for country network***

NIP-NL Organisation



Energy technologies and Innovation

COM 2013 /253



- On 2 May 2013, the European Commission published its **Communication on energy technologies and innovation COM (2013) 253**.
- The EU needs to do more to bring new, high performance low-cost, low-carbon sustainable energy technologies to the market. **New technologies are key to achieve the EU 2020 objectives** in energy, climate, policy, as well as those for 2030 and 2050.
- **An Integrated Roadmap is being developed**, under the guidance of the SET Plan Steering Group, incorporating the key principles and measures identified in this Communication: consolidate the (up dated) technology roadmaps of the SET Plan while retaining the technology specificities; cover the entire research and innovation chain from basic research to demonstration and market roll-out;
- **Member States and the Commission should develop an Action Plan on coordinated and/or joint investments by mid-2016**, by individual Member States, between Member States and with the EU that go beyond grant programmes and include financial engineering instruments and procurements. The Action Plan will contain **different modes of implementation** such as alignment of Member States and EC funding on priorities identified in the integrated roadmap and joint investments between Member States or/and with the European Union.

Policy Framework for Energy and Climate in the period 2020 – 2030 (COM 2014/15)



Requires national plans for competitive, secure and sustainable energy to:

- Ensure that EU policy objectives for climate and energy are delivered
- Provide greater coherence of Member States' approaches
- Promote further market integration and competition
- Provide certainty to investors for the period after 2020.

These plans should set out a clear approach to achieve domestic objectives regarding greenhouse gas emissions in the non-ETS sector, renewable energy, energy savings, energy security, research and innovation and other important choices such as nuclear energy, shale gas, carbon capture and storage.

Smart Cities and Communities

EUROPEAN

Horizon 2020 Smart City Community - lighthouse projects

Scope: To identify, develop and deploy replicable, balanced and integrated solutions in the energy, transport, and ICT actions through partner ships between municipalities and industries.

Main areas to be addressed in integrated way:

(Nearly zero) or low energy districts

Integrated Infrastructures

Sustainable urban mobility

According to the Communication on Smart Cities and Communities the light house projects should look for creating partnerships between industries, academics and cities, empower citizens and

EHA events



1. 1. September 5, 2014 Teleconfernece on H2 consequences of EU Fuel Quality Directive
2. 2. December 4, 2014 Rome IPHE Educational Event and Student Award
1. 3. December 5, 2014 Rome IPHESmart Ccites and Communities Workshop

1.

2.



Join us!



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