AGENDA national workshop Hylaw Belgium

9.00 - 9.30: **Introduction Hylaw project and EU legislative framework** *Alexandru Floristean, Hydrogen Europe*

9.30 -10.45: **Experiences with permitting/legislation in existing H_2 projects**

- **Non-public and public fuelling station at Colruyt, Halle**, *Koen Declerq, Colruyt Group*
- **Public fuelling station of Air Liquide in Zaventem**, *Jean-Pierre Verpoorten, Air Liquide*
- **H_2 ship Hydroville,** *Roy Campe, CMB*
- **Type approval buses,** *Luc Vinckx, Van Hool*
- **Distance rules definition for H_2 stations,** *Philip Marynissen, VITO*

10.45-11.00: Coffee break

11.00-11.30: **Presentation National Policy paper for Belgium**, *Isabel François, WaterstofNet*

11.30-12.30: **Open discussion**

12:30-13:00: Sandwich lunch

Hylaw - national policy paper Belgium

Isabel François, WaterstofNet
National workshop Oct. 23, 2018

Outline

- Topics studied in Hylaw project
- Selection of priorities for Belgium
- Conclusions
- Discussion and follow-up

Topics studied in Hylaw project

Application	Barriers?	Main topics to be tackled	Level
Production of H_2		Permitting process complex	Regions
Storage of H_2		Permitting process complex	Regions
Transport & distribution			
H_2 as a fuel and HRS		Permitting process complex Quality requirements unclear	Regions EU, Federal
Vehicles		Incentives, stimuli required Ships: no legislative framework	Regions, Federal EU, Federal
Electrolyser connection to E-grid			
Injection of H_2 in gas grid		No legislative framework	Federal, Regional
Stationary power (fuel cells)			
Over-arching issues		Valorisation of green hydrogen	EU, federal

Selection of topics for national policy paper

1. Hydrogen refueling infrastructure permitting procedure
2. Hydrogen quality requirements- and monitoring in HRS
3. H_2 for shipping
4. Incentives for hydrogen vehicles: cars, buses, trucks
5. Injection of hydrogen in the gas grid

Remark:

Due to practical experience with H_2 projects in Flanders, some parts of the policy paper are more focus on Flemish region. Specific info for Wallonia/Brussels should be added.

1. Hydrogen refueling infrastructure: permitting

- Hydrogen refuelling systems exist in different configurations

  - Supply of hydrogen by pipeline or trucks
    $\Rightarrow$ **storage** of H_2

  - Locally produced on-site by water-electrolysis
    $\Rightarrow$ **production & storage** H_2

1. Hydrogen refueling infrastructure: permitting

- Status / Issues
  - Permitting is a REGIONAL competence.
  - Building : No principal issue in legislation but specific issues for each case
  - Environmental : No specific legislation for hydrogen available
    $\Rightarrow$ individual procedure/ safety assessment for each installation
  - No practical guidelines available for permitting procedure
  - No quick procedure for small/test projects (e.g. mobile refueller)

- Relevant legislation in Belgium
  - Regional: Environmental legislation

- Good examples in other countries?
  - NL: PGS35 document with guidelines for HRS
  - D, F, S: quick procedure for small scale test projects

Hydrogen refueling infrastructure: permitting procedure

- Running actions
  - “Best available Techniques” (BAT) study running in Flanders
    ⇒ Standard safety checklist; module for calculation safety distances, ..
    BUT long throughput time to turn this into legislation
  - Excercise in Wallonia/Brussels to be started

- Recommendations:
  - Quick implementation of BBT results in regional legislation
  - Publish PGS35-like document with practical guidlines on short term
  - Identical procedure in 3 regions
  - Develop quick procedure for tests/mobile refueller

- Who has to be adressed?
  - Regional depts of environment

H_2 as a fuel: quality requirements & monitoring

- Relevant Legislation and standards
  - Directive 2014/94/EU (Alternative Fuels Infrastructure Directive)
    $\Rightarrow$ application of **ISO 14687**–2:2012 (H_2 quality requirements for fuel cells) is mandatory
  - ISO 14687-2:2012 to be replaced with **:2018** version + extra ISO **19880-8,** specifying the quality assurance and control protocol
  - New EN 17124 standard (H_2 quality requirements + securing of quality) in preparation.

- Issues in real life:
  - (old) ISO-standard is hard to implement; measurements only done by limited # labs
  - In practice: only check on limited # of contaminants
  - No controlling organisation in Belgium; no mentioning of norms in legislation

H_2 as a fuel: quality requirements & monitoring

- Running actions:
  - Individual actions of HRS operators, no coordinated action

- Recommendations:
  - Clear reference to the norm in national (AFID) legislation
  - Clear procedure for testing and monitoring of H_2 fuel in HRS in Belgium
  - Contaminants to be checked dependent on production method hydrogen (EU norm)?
  - Consensus is needed on the requirements for fuel quality (by suppliers, manufacturers of fuel cells, etc.)

- Who has to be adressed?
  - Member states, standardisation bodies, industry

Vehicles: H_2 in shipping

- Hydrogen engine or fuel cell
- Hydrogen storage on board
  - Gaseous or liquid
- Bunkering of hydrogen
  - Large volumes!
- IMO: 50% reduction in GHG by 2050

Vehicles: H_2 in shipping

- European/International framework:

Maritime (SEA): governed at international level by IMO
- IGF-code (low flash point fuels, but no specific H_2 legislation)
- IMO allows approval based on “alternative design” (to be approved by National Maritime organization)
- Risk assessment ⇒ demonstrate equivalence of safety
- Bunkering in IGF-code only for LNG

Inland navigation: governed on EU level, mainly CCNR (Centr. Comm. for Navigation Rhine)
- No specific H_2 legislation
- EU directive **2016/1629/EU** allows issue of special permits for alternative fuels
  ⇒ comply with chapter 30 in ES-TRIN (however no specific H_2 rules)
- Risk assessment ⇒ demonstrate equivalence of safety
- ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways

Vehicles: H_2 in shipping

- Belgian situation

Maritime: federal competence
- Belgium is member of IMO
- National legislation "Maritime shipping inspection regulation" (IMO rules)
- Federal Public Service for mobility is responsible

Inland navigation: regional competence since 2015
- Belgium (regions) is member of CCNR
- Regional departments of mobility are responsible
- For each ship: recommendations of CCNR and ADN safety commission are required
- Risk analysis and design optimization with help from classification company

Vehicles: shipping

- Running actions
  - Ongoing work in IGF Code working group and in CCNR

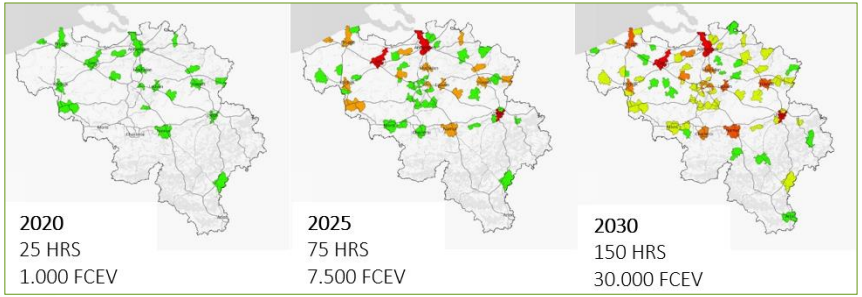
- Recommendations
  - Belgium to play its role in IMO to create H_2-specific legislation
  - Regions to play their role in CCNR to create H_2-specific legislation
  - Support of pilot projects $\Rightarrow$ speed up regulation

- Good examples in other countries?
  - Strong support for pilot projects in Norway (ferries)

- Who has to be adressed?
  - Member states in IMO, CCNR, ADN; FPS economy (maritime) and regional mobility departments

Cars-buses-trucks & infrastructure: incentives & stimuli

Plan H2Mobility



Cars-buses-trucks & infrastructure: incentives & stimuli

- European framework ⇒ Belgian legislation

  - **Renewable Energy Directive II** ⇒ to be transposed by mid 2020
    14% of RES in transport

  - **Alternative Fuel Infrastructure Directive** ⇒ National policy Framework Alternative Fuels infrastructure
    mandates MS to grant incentives for vehicles /infrastructure
    requires MS to report on national policy framework every 3 years

  - **Clean Vehicle Directive**
    Targets on clean vehicle public procurement 2025-2030 ⇒ KB Dec 20, 2010 on clean vehicles in public procurement

Cars-buses-trucks & infrastructure: incentives & stimuli

REGIONAL	Flanders	Wallonia	Brussels
Incentives			
Exemption from registration tax for cars	x (zero)	x (min. rate)	x (min. rate)
Exemption from annual circulation tax for cars (unlimited in time)	x (zero)	x (min. rate)	x (min. rate)
Purchase grant for zero-emission cars (5000€)	x		
Ecology Premium for companies for investments in environmentally friendly and/or energy-efficient technologies (www.ecologiepremie.be).	x		

Zero-emission (ZE) targets			
Public transport	From 2025 all new buses ZE in 13 Flemish center cities	From 2030 all new vehicles on alternative fuel (ZE + CNG)	From 2030 all new vehicles are ZE.
Low emission Zones (LEZ)	On city level: Antwerp (installed) Gent, Mechelen (announced 2020)	On city level: Liège (announced 2020)	On regional level. (installed)

Interfederal agreement 2017: Public transport ZE from 2025 in all regions

Cars-buses-trucks & infrastructure: incentives & stimuli

- Federal incentives:
  - Deductibility rate from corporate income for zero emission company cars of 120%
  - Public acquisitions: certain target on low/zero emission targets (up to 25%)

- Recommendations:
  - Transpose REDII to Belgian legislation such that all options for H_2 are open
  - Incentives for ZE/H_2 cars and infrastructure for sufficiently long period
  - Green public procurement policies – consider H_2 if added value (autonomy!)
  - H_2 buses explictely in long term plan for ZE public transport (De Lijn, TEC, MIVB)
  - Other incentives: less or no toll charge for ZE trucks, preferential access to restricted areas…
  - Extend low emission zones with stricter rules
  - **Support H_2 infrastructure (H_2 refuelling stations)**

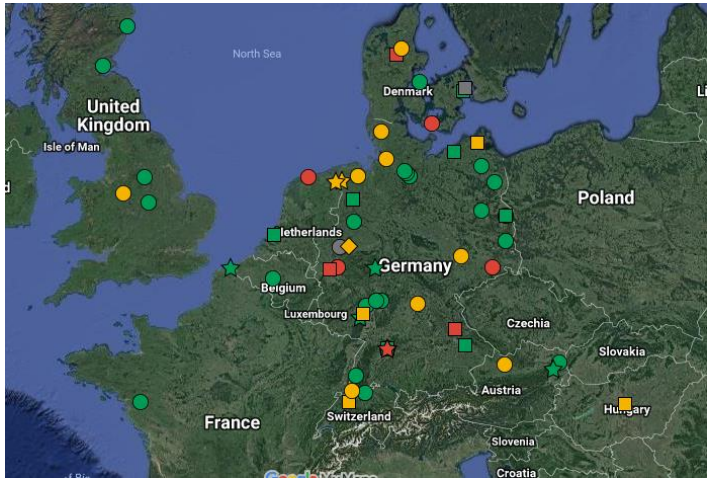
- Who has to be adressed?
  - FPS economy (REDII), Regional mobility departments

Injection of H2 in the gas grid

- Several test projects in EU

- In Belgium: industrial scale project announced last year, Fluxys-Eoly-Parkwind

- 100 MW projects announced:
  - in UK (Northern Gas Networks-ITM);
  - In NL (Gasunie-Engie)
  - In D (Gasunie-Tennet-Thyssengas)…



Injection of H2 in the gas grid

- Status / Issues: No legal framework existing in Belgium
  - Maximum allowed concentration in transmission and distribution grid
  - Legal status of power-to-gas facility
  - Cross border acceptance of hydrogen in the grid
  - Responsibilities of injecting party?
  - Requirements on injected H_2?
  - **No guarantee of origin system for green H_2**

- Running actions
  - CertifHy project
  - Normalisation work and several EU projects on allowed % of H2 in gas grid ongoing
  - Study projects for PtG in Belgium/Zeebrugge

Injection of H2 in the gas grid

- Good examples in other countries?
  - Germany: injection up to 10% concentration allowed in transmission grid
  - The Netherlands: study for distribution grid (KIWA study 2018)
  - UK: City of Leeds study 2016

- Recommendations
  - Follow-up CertifHy project ⇒ implementation of GoO in regulation
  - Identify relevant technical issues for Belgian transport & distribution grids
  - Follow-up of normalization activities in the field
  - Establish coordinated policy between member states

- Who has to be adressed?
  - National and regional gas grid operators, National and regional regulatory agencies

Questions for the discussion

- Are the conclusions correct?
- Do we miss critical topics?
- How do we prioritize the different topics?
- What are the next steps?
  - Who should be involved in follow-up discussions?
  - Organization of working groups?
  - Check/feedback of the database