



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

HyLaw

Identification of legal rules and administrative processes applicable to Fuel Cell and Hydrogen technologies' deployment; identification of legal barriers and advocacy towards their removal



HyLAW

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Programme Review Days 2018

Brussels, 14-15 November 2018

PROJECT OVERVIEW



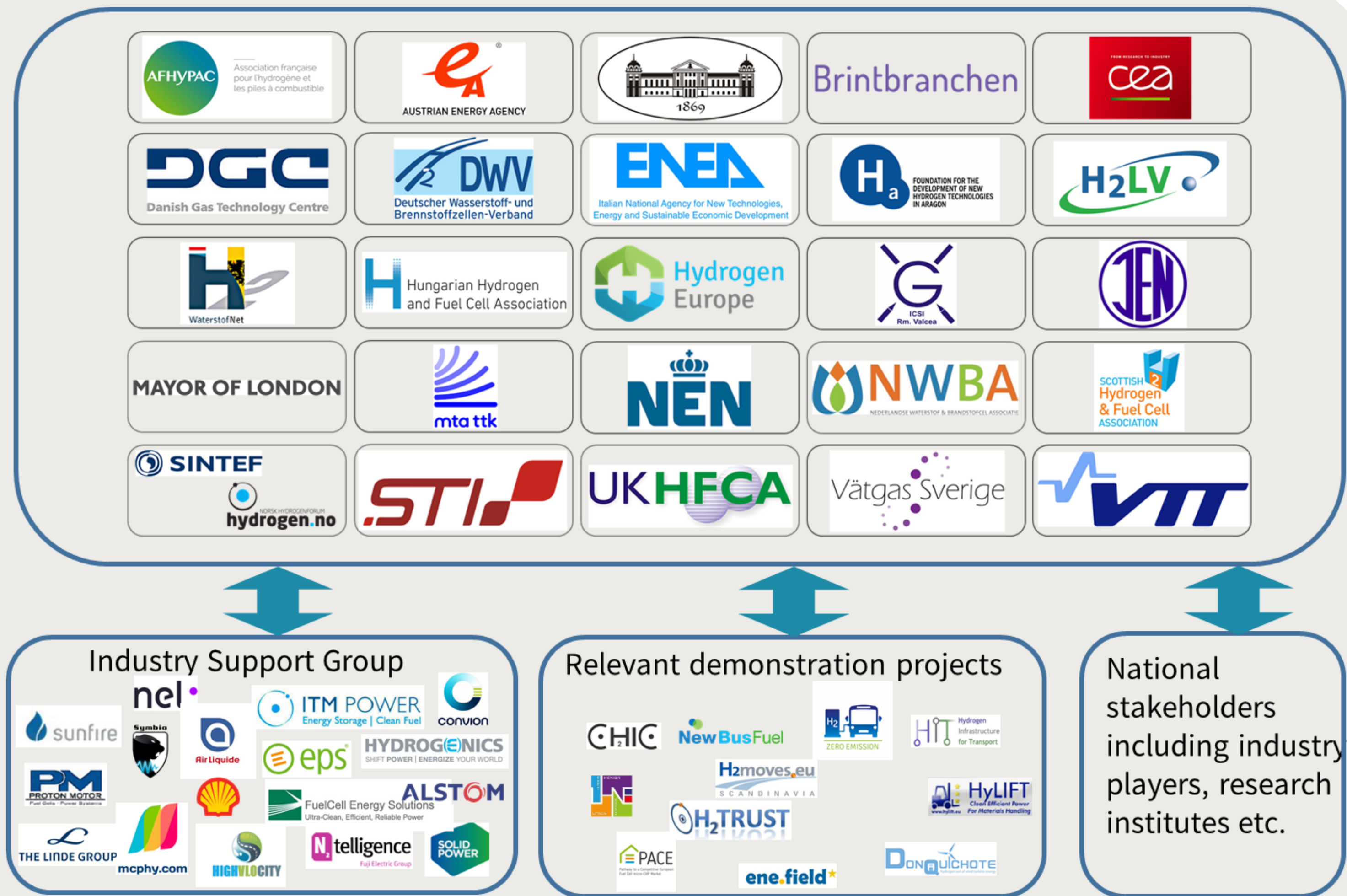
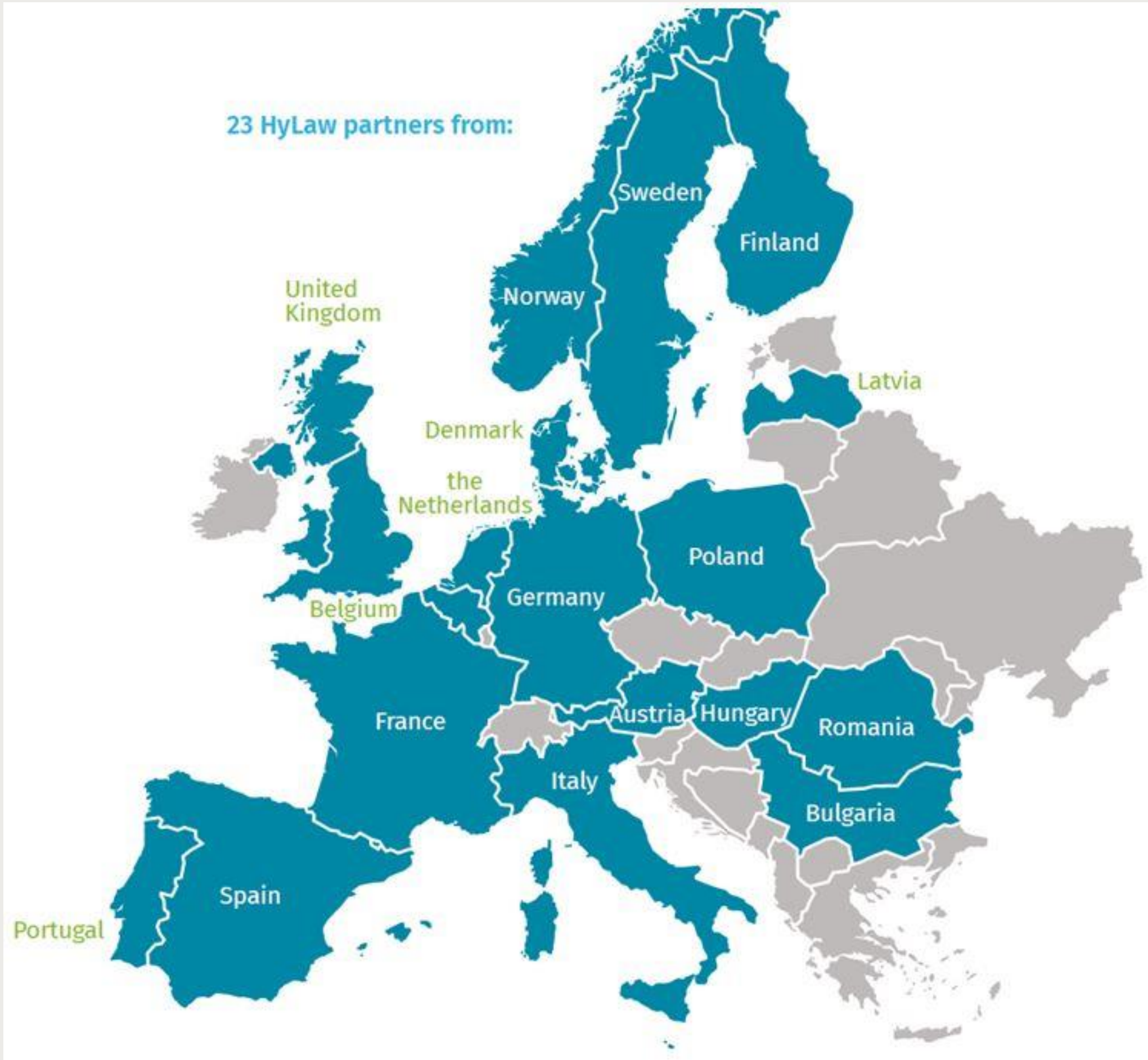
- **Call year:** 2016
- **Call topic:** FCH-04-2-2016: Identification of legal-administrative barriers for the installation and operation of key FCH technologies
- **Project dates:** 1st January 2017 – 31st May 2019
- **stage of implementation:** 80 %
- **Total project budget:** € 1,143,000.00
- **FCH JU max. contribution:** € 1,143,000.00
- **Other financial contribution:** n/a



Partners



23 HyLaw partners from:



Largest community mobilised for a project in the Hydrogen field

PROJECT SUMMARY



Why HyLaw?

1. Regulatory and legal administrative processes (LAPs) reflect incumbent technologies.
 - No broad, in-depth, analysis to identify legal barriers to deployment of hydrogen technologies

2. Legal and Administrative barriers increase time and cost of projects, or outright exclude certain types of projects
 - No publicly available resource presents the rules applicable when deploying hydrogen technology
 - Knowledge restricted to a few experienced operators but limited in scope to certain applications within a clearly defined context.

Objectives

Policy
Identify regulatory barriers (and best practices) and advocate for better regulation to support the uptake of fuel cell and hydrogen technologies
Market
Describe legal and administrative processes which apply when deploying key Hydrogen technologies (coherent, user friendly, online database)



Scope

~60 Legal and administrative processes; 20 hydrogen applications in 8 categories

Categories of applications	
1. Production of hydrogen	
2. Storage of hydrogen	
3. Transport and distribution of hydrogen	
4. Hydrogen as a fuel and refueling infrastructure for mobility purposes	
5. Vehicles	
6. Electricity grid issues	
7. Gas grid issues	
8. Stationary power; fuel cells (other issues than gas grid and electricity)	

PROJECT SUMMARY



Expected Results and Specific objectives

CREATE: A database covering 18 countries reflecting key fuel cell and hydrogen domains

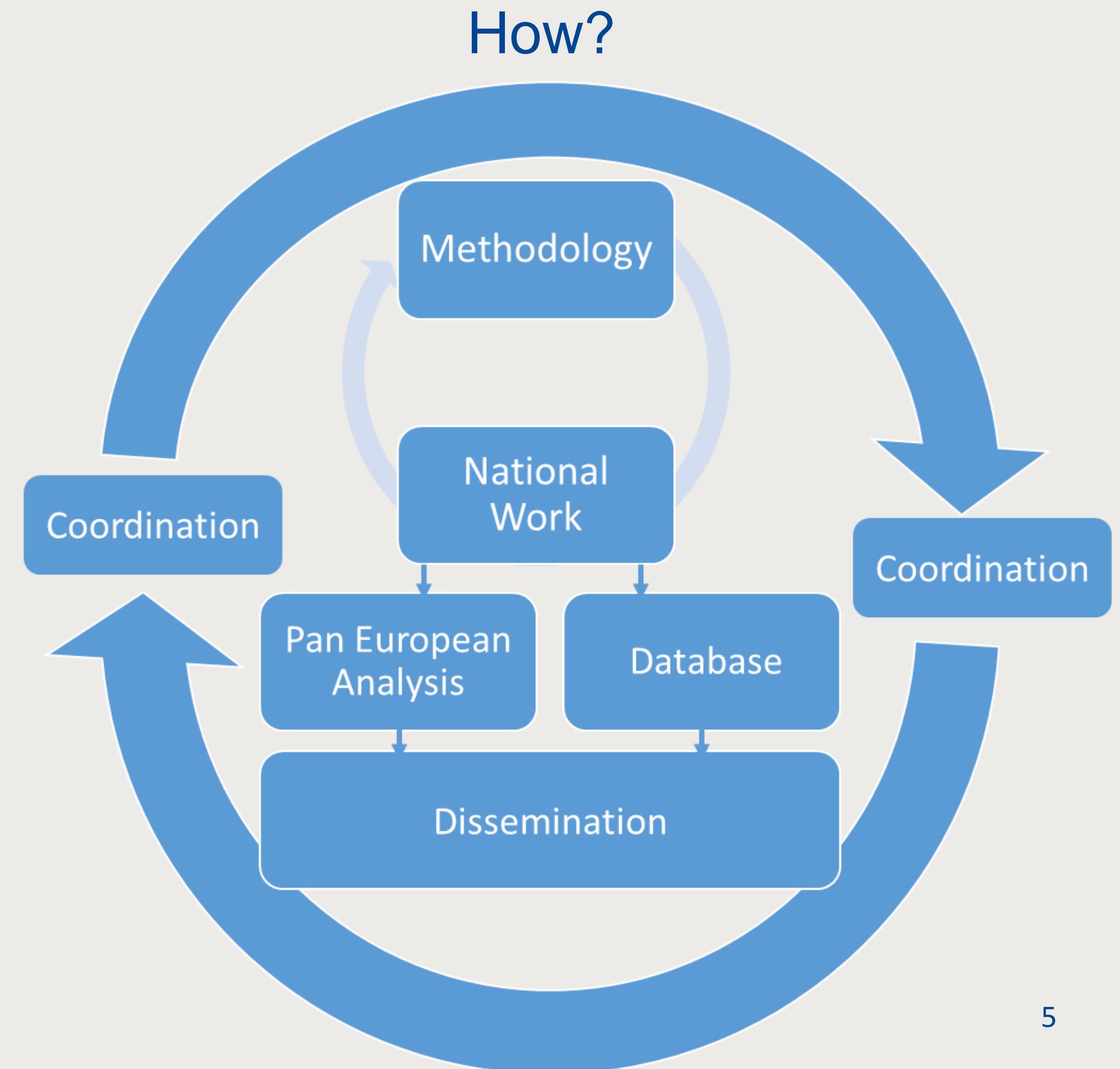
INFORM: Provide accessibility via a single portal to information about LAPS across the 18 participating countries

MEASURE: Assess the impact of the requirements / applicable rules

COMPARE: Use the data collected to compare best practices and support coherent, uniform and seamless development across the EU.

COMMUNICATE AND DISSEMINATE: provide a coherent communication strategy and meet the dissemination needs of different FCH sectors and different member states.

Additionally: cement and structure the FCH sector cooperation between European and national levels



PROJECT PROGRESS/ACTIONS – CREATE and INFORM



Database of legal and administrative rules



- **Scope:** ~60 legal and administrative processes (LAPs) covering 20 different applications organized in 8 categories. More than 50 000 data points.
- **Data collection:** National and regional level.
 - Systematic process of data management
- **First review:** Centralized review by core team
- **Offline database:** Consolidation
- **Second review:** Ensure data coherence and comparability
- **Data visualization and user experience:** www.hylaw.eu/database



Future: Database to be kept up-to-date by project partners (regular updates) and external stakeholders (Wikipedia style)

Database

Production of hydrogen **Centralised (Electrolysis, Steam-Meth** **Please select a LAP**

[Database](#) | [Compare LAPs](#) | [Legislation](#)

The HyLaw database is structured along the nine categories which can be seen below. Within each category, a number of relevant hydrogen applications and different legal and administrative processes (LAP's) are covered. These can be selected from the drop-down menu found below. Once selecting the category, application, legal and administrative process (LAP) and the country you are interested in, you will be directed to a page displaying the data collected in the course of the project.

Production of hydrogen

Centralised (Electrolysis, Steam-Methane reforming, and H2 liquification)

This application concerns the production of hydrogen at one location, in quantities to cover the needs of hydrogen over a relatively large geographic area for a relatively large number of points of use, implying hydrogen transportation

- Land use plan (zone prohibition)
- Permitting process (include former LAP: emission regulation)
- Permtting requirements (include LAP: safety-distances)

Localised (Electrolysis, Steam-Methane reforming, and H2 liquification)

Stationary Storage

Transport and distribution of hydrogen

Hydrogen as a fuel and refueling infrastructure for mobility purposes

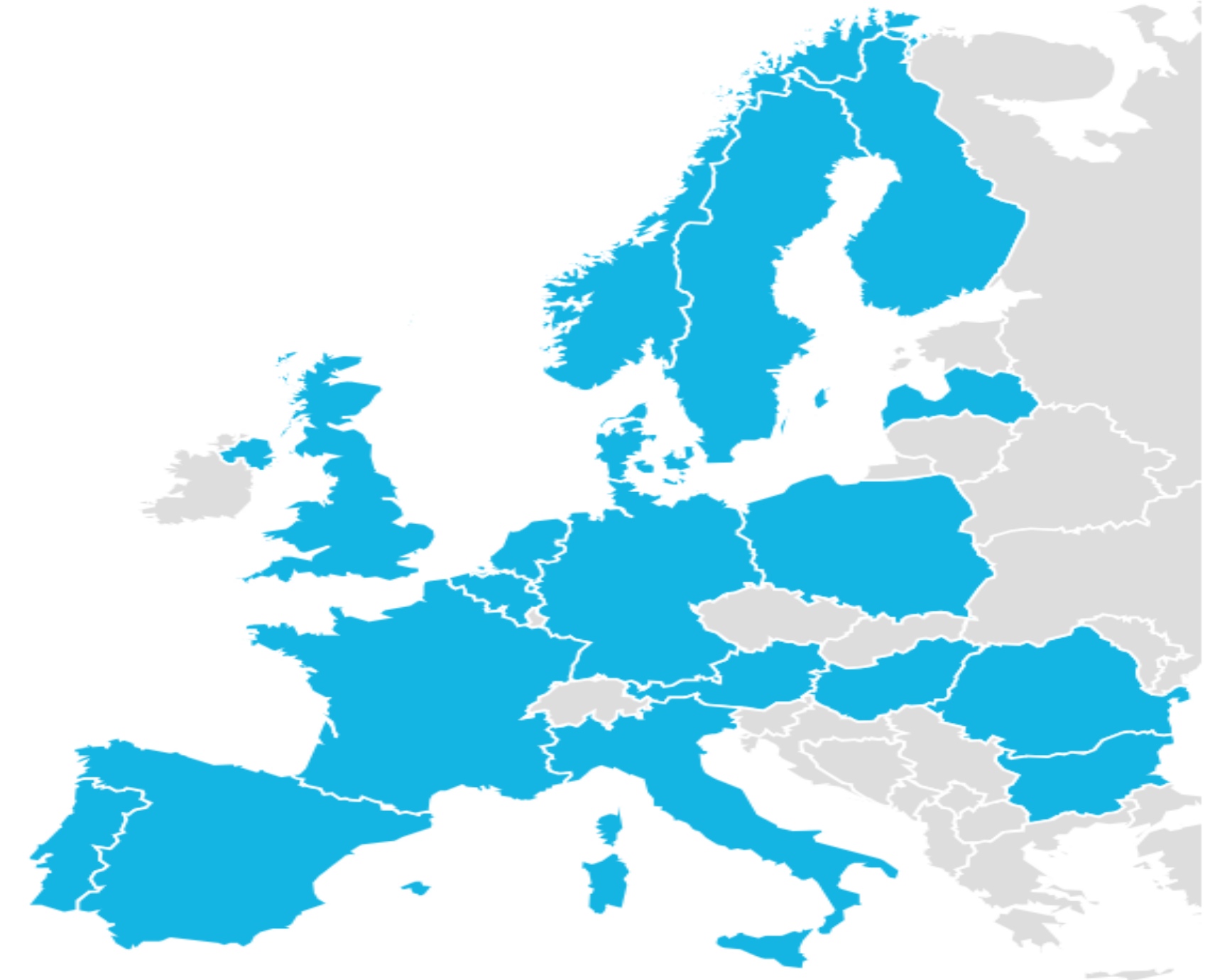
Vehicles

Electricity grid issues for electrolysers

Gas grid issues

Stationary power; fuel cells

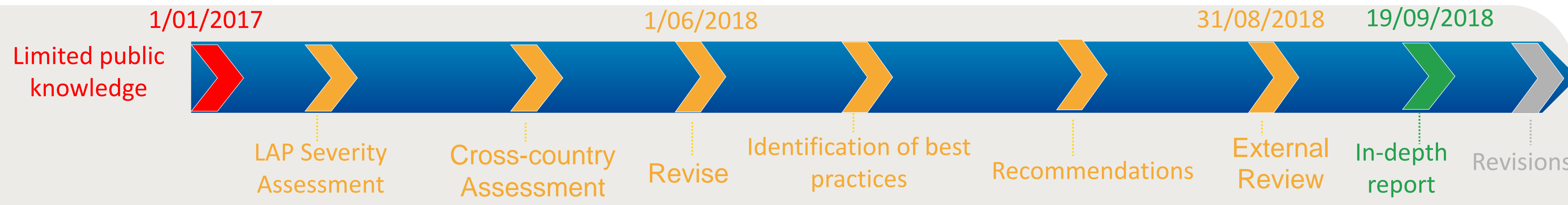
Introduction of green hydrogen in Industry



PROJECT PROGRESS/ACTIONS – MEASURE and COMPARE



Broad, in-depth, analysis, understanding of barriers



- **Severity assessment:** Self – Assessment by partners
- **Cross-country assessment:** Differences and similarities across countries
- **Revise:** Assessments put in perspective
- **Identification of best practices:** Existing solutions
- **Recommendations:** Based on best practices or otherwise
- **External Review:** Experienced industry involved
- **In-depth report:** 160 page report (D4.1): www.hylaw.eu/info-centre



Future: Analysis / Conclusions / Recommendations to be revised and follow-up on

Land use plan (zone prohibition)

Production of hydrogen
Centralised (Electrolysis, Steam-Meth
Land use plan (zone prohibition)

[Database](#) | [Compare LAPs](#) | [Legislation](#)

Land use plan (zone prohibition)

This LAP refers to the land use plan and analyses the legal requirements for building a centralised hydrogen production facility (including potential zone prohibition), identifies the authority responsible for delivering the land use permit, gives an estimate of the time needed to change the land use plan, and finally highlights if the permit process is uniform throughout the country.

Germany
▼

[Expand all answers](#)

a - What are the main regulations/requirements regarding land use plans for building a hydrogen production facility (e.g. permitting regime, agreement)?

b - Are there specific requirements or zone prohibitions for building a hydrogen production facility in the land use plans?

Which is the authority responsible for delivering the land use permit ?

🇩🇪 The preparatory and legally binding land use plans are developed and adopted by the municipalities in the framework of national legislation.)

Is there a uniform permit process at local level throughout a country? (uniform interpretation?)

If needed, what is required and how much time does it take to change the land use plan?

Is it a barrier? 🇩🇪 No

Assessment Severity 0

Assessment 🇩🇪 The LAP is important for identifying the types of land use plans and their requirements resp. prohibitions for building of an industrial hydrogen production plant.

[Show National legislation](#)

[Show EU legislation](#)

[Show Glossary](#)

[Show Pan-European Assessment](#)

🇩🇪 [View Legislation Table](#)

🇩🇪 [PDF Export](#) | [Excel Export](#)

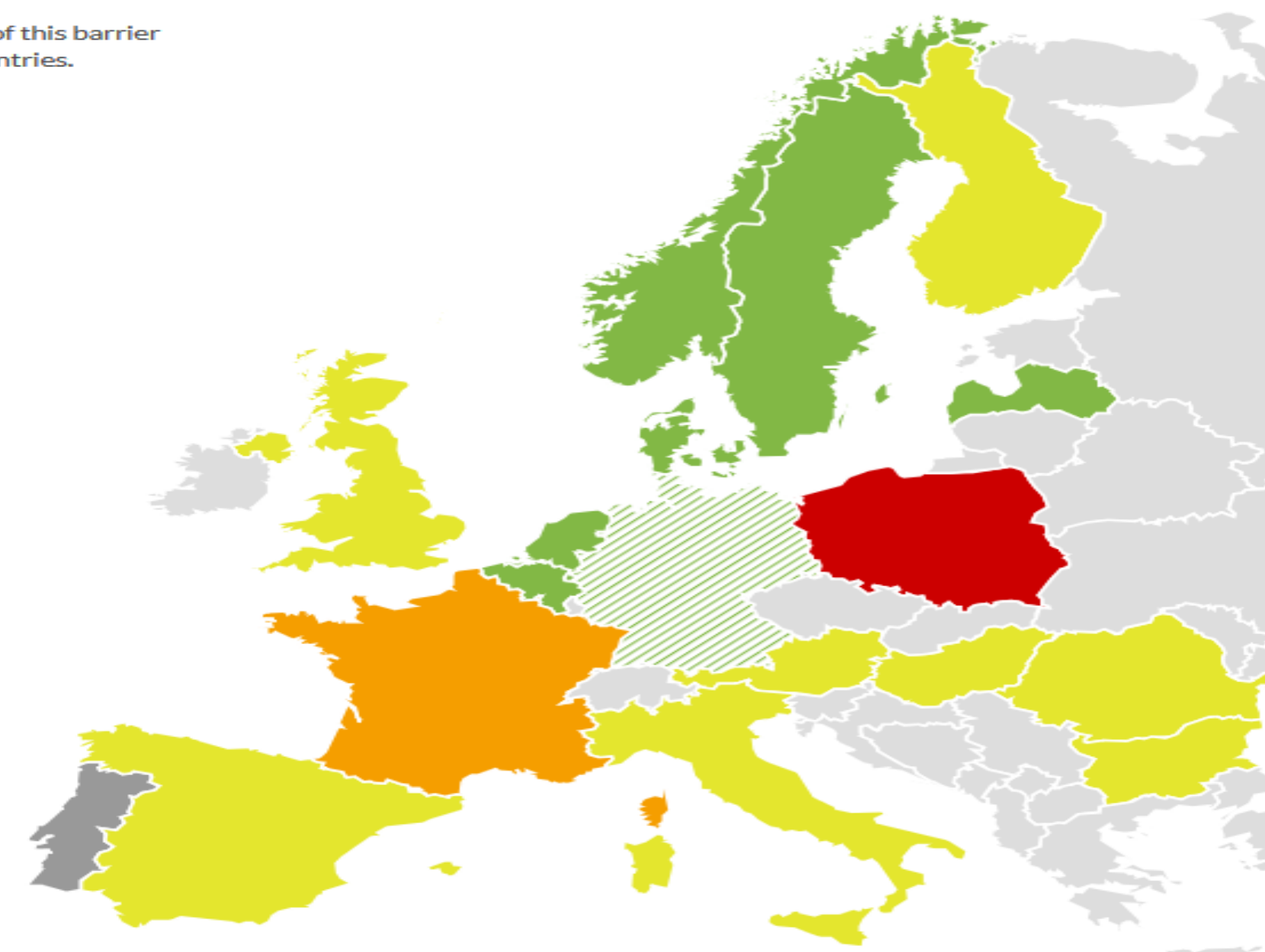
👍 The information is correct

👎 There are errors ...

[Submit a suggestion for improvements](#)

This map depicts the severity of this barrier across the HyLaw Partner countries.

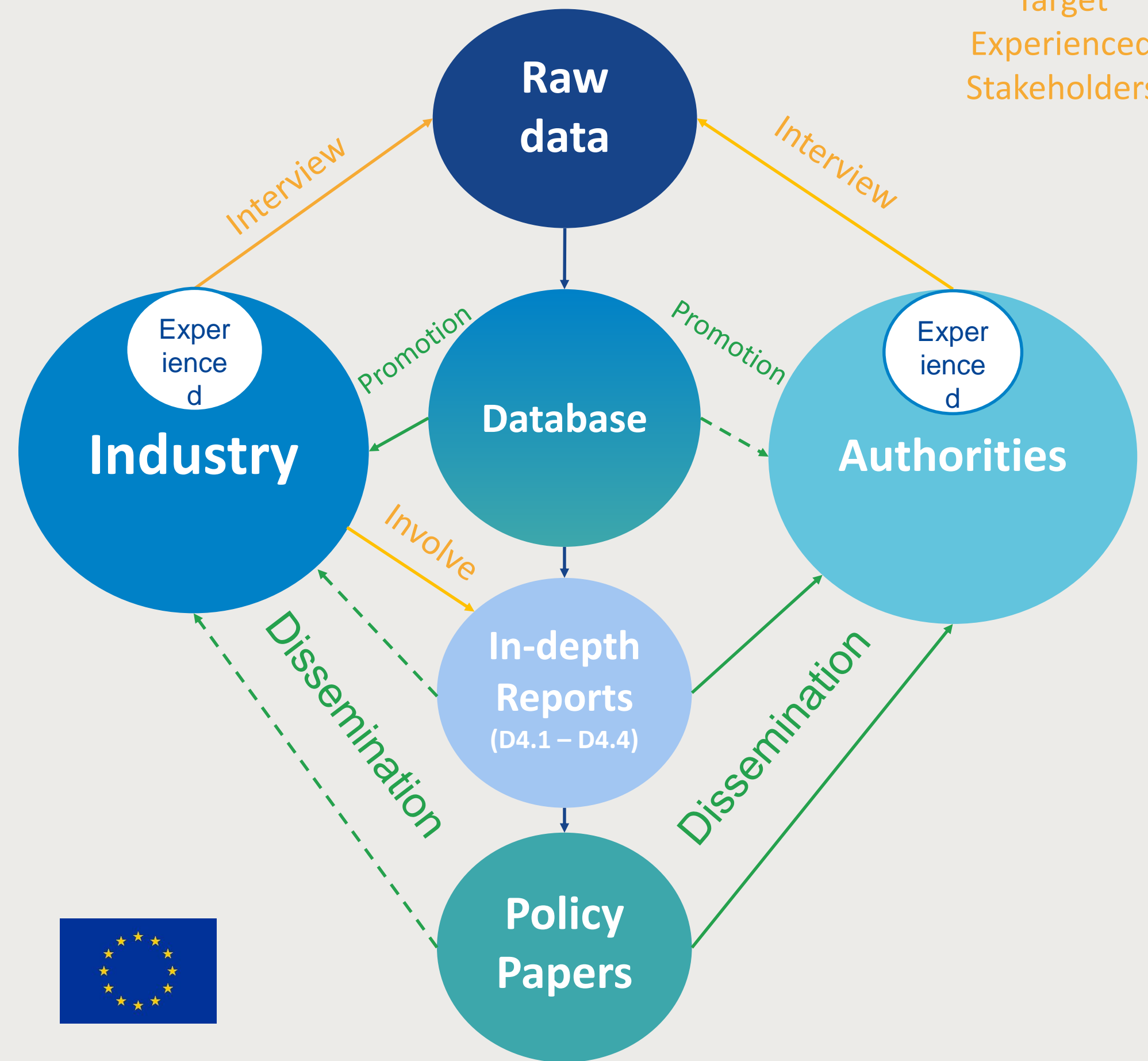
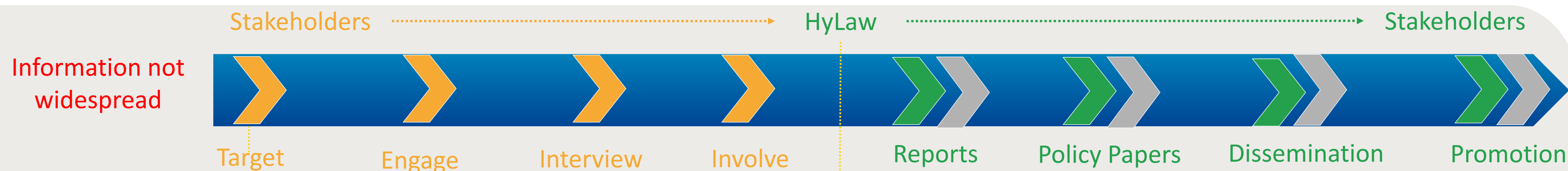
- No barrier
- Low
- Medium
- High
- Data not available
- Selected countries



PROJECT PROGRESS/ACTIONS – COMMUNICATE



Communication



The HyLaw consortium has analysed the applicable legal and administrative processes in all the countries covered and has produced a set of analytical reports which seek to shed more light on the sources of regulatory barriers and the impact they have on the timely delivery of hydrogen technologies. We are happy to make them publicly available below:

National policy papers

Building on the content of the database, National policy present the state of play of the Hydrogen Regulatory environment in each country and detail country specific recommendations.

- [Austria](#)
- [Belgium](#)
- Bulgaria
- [Denmark \(EN\)](#) [DK](#)
- [Finland](#)
- France
- [Germany](#)
- Hungary [HU](#)
- Italy
- Netherlands
- [Norway](#)
- [Poland](#)
- Portugal
- [Romania](#)
- [Spain \(EN\)](#) [ES](#)
- [Sweden](#)
- United Kingdom

EU policy paper

Analytical reports and other deliverables

In addition to the policy papers, the HyLaw project is happy to make available a number of other deliverables prepared in the course of our work:

- D1.5 Public Final report
- [D4.1 Analysis of differences and commonalities between countries](#)
- D4.2 List of legal barriers
- D4.3 Horizontal position papers
- [D4.4 EU regulations and directives which impact the deployment of FCH technologies](#)



PROJECT PROGRESS/ACTIONS – DISSEMINATE



Dissemination



- **Engage and Involve:** Raising interest, creating a user base
 - >70 Presentations in various settings
 - Appearances in journals and newspaper articles (various)
- **Dissemination:** Workshops (17+1) : www.hylaw.eu/events
- **Other channels:**
 - Website (www.hylaw.eu)
 - Twitter (@h2europe)



EU Workshop

A HyLaw EU workshop is scheduled to take place in Brussels on the 6th of December 2018 – for details, contact Alexandru Floristean: a.floristean@hydrogeneurope.eu.

Country	City	Location	Date	Contact Person	Contact Email
EU	Brussels	Hydrogen Europe, Avenue de la Toison d' Or 56- 60	06/12/2018	Alexandru Floristean	a.floristean@hydrogeneurope.eu

National Workshops

A key national workshop will be organised in each country to present the results of the HyLaw project . Please check below for a schedule of events.

Country	City	Location	Date	Contact Person	Contact Email
AT	Vienna	AEA Executive Committee	06/11/2018	Alfred Schuch	Alfred.Schuch@energyagency.at
BE	Brussels	Avenue de la Toison d' Or 56- 60	23/10/2018	Isabel Francois	isabel.francois@waterstofnet.eu
BG	Sofia	Sofia	06/11/2018	Daria Vladikova	d.vladikova@bas.bg
DK	Copenhagen	Danish Energy Association	25/09/2018	Chris Holst Preuss	TLJ@brintbranchen.dk
FI	Espoo	Dedicated Hydrogen Seminar	07/11/2018	Mikko Kotisaari	mikko.kotisaari@vtt.fi
FR	Paris	To be announced	06/11/2018	Christelle Werquin	Christelle.werquin@afhypac.org
DE	Berlin	Dedicated Workshop	08/11/2018	Dennitsa Nozharova	dennitsa.nozharova@encon-europe.de
HU	Budapest	MTA TTK building, XI.district Budapest, Magyar Tudósok krt. 2.	27/09/2018	Mayer Zoltan	mayer.zoltan@hfc-hungary.org
IT	Milan	National Forum on FC&H technologies, 2018	25/10/2018	Viviana Cigolotti	viviana.cigolotti@enea.it
LV	Riga	The Environment and Energy trade fair	19-21/10/2018	Dainis Boss	dainis@h2lv.eu
NL	The Hague	Dedicated HyLaw Workshop	09/11/2018	Remco Perotti	remco.perotti@nen.nl
NO	Oslo	Citybox, Prinsens gate 6	11/10/2018	Heidi Bull-Berg	Heidi.bull-berg@sintef.no
PL	Warsaw	HyLaw National Workshop	21/11/2018	Marcin Blesznowski	marcin.blesznowski@ien.com.pl
RO	Băile Govora, Vâlcea	Energy Storage Symposium	24-26/10/2018	Ioan Iordache	office@h2romania.ro
ES	Madrid	CDTI (Centro para el Desarrollo Tecnológico Industrial)	18/09/2018	Miguel Zarzuela	mzarzuela@hidrogenoaragon.org
SE	Stockholm	Tändstickspalatset, Västra Trädgårdsgatan 15, Stockholm	20/11/2018	Bjorn Aronsson	bjorn.aronsson@vatgas.se
UK	London	London City Hall	08/11/2018	Emma Fenton	Emma.Fenton@london.gov.uk

Risks and Challenges



<i>Challenge</i>	<i>Mitigation action(s)</i>
<i>Comparability of data</i>	<ul style="list-style-type: none"> • <i>Common templates for data collection</i> • <i>Locked fields / data validation conditions</i> <ul style="list-style-type: none"> • <i>Common definitions for key terms</i> • <i>Centralized review process (two rounds)</i> • <i>Certain types of data generated centrally</i>
<i>Quantification of barriers*</i>	<ul style="list-style-type: none"> • <i>Self assessment</i> • <i>Cross-country comparison</i> • <i>Centralized assessment based on common criteria</i> <ul style="list-style-type: none"> • <i>Simple benchmarks</i>
<i>Lack of knowledge</i>	<ul style="list-style-type: none"> • <i>Large number of sources</i> <ul style="list-style-type: none"> • <i>Expert input</i> • <i>Extrapolation / comparison with other technologies</i>
<i>High level of ambition</i>	<ul style="list-style-type: none"> • <i>Topics covered at a reasonable level of detail</i>

<i>Risk</i>	<i>Mitigation action(s)</i>
<i>Database not used / not updated</i>	<ul style="list-style-type: none"> • <i>Strong promotion</i> • <i>Updates by partners</i> • <i>User-friendly edit function by users (Wikipedia style)</i>
<i>No continuation</i>	<ul style="list-style-type: none"> • <i>Deepening of knowledge base and understanding</i>
<i>Recommendations not taken up</i>	<ul style="list-style-type: none"> • <i>In-depth Reports</i> • <i>Policy Papers</i> • <i>Workshops</i> • <i>Follow-up needed</i>



RISK – DATABASE NOT USED / NOT UPDATED



EDITS AND UPDATES BY PARTNERS

- Periodic (First update in 2019)
- Each Country Partner responsible to keep it up –to-date
- Commitment beyond the lifetime of the project

USERS CAN FLAG CONTENT

 The information is correct

 There are errors ...

 [Submit a suggestion for improvements](#)



EDITS BY USERS

Your suggestions for Portugal

Questions & Answers

Question 1a - What is the legal status of hydrogen as a fuel?

Hydrogen is seen as an alternative fuel regardless of the primary energy source.

Question 1b - Is the EU legislation (Alternative Fuel Infrastructure Directive) transposed in your country, and how has it been assessed?

Question 2 - At European level, no binding guarantee of origin certification system of hydrogen origin is established yet, while there are initiatives (e.g CertifHy project and others) - Is a certification system of hydrogen origin established at national level?

a - There is no requirement for certification of origin for hydrogen produced solely for purposes related to mobility. Punctual projects guarantee the quality of hydrogen as a fuel through the companies producing industrial gases and chemicals.

EXPLOITATION PLAN/EXPECTED IMPACT



Exploitation

1. Database (www.hylaw.eu/database) should become a source of information for industry.
 - Hydrogen Europe will promote it, the Consortium will update it
 - Users are invited to engage and contribute to keeping it up-to-date
2. Recommendations in in-depth report and Policy Papers (<https://www.hylaw.eu/info-centre>) should be taken-up

Impact

Opening the way for commercial deployment of hydrogen technologies by:

- Lowering resource (cost and time) for fulfilling legal and administrative obligations.
- Removing structural barriers*
 - HRS with on site production – industrial zones?
 - 50 meters safety distance for hydrogen storage
 - 0.1% H2 in Gas grids
- Overcoming regulatory gaps**
 - H2 fuel cell vessels
 - P2G facilities and the role in the electricity and gas grids



WHAT IS NEXT? – FOLLOW-UP



Maximizing impact requires follow-up by regulators

- Adapt simplify rules and administrative practice
 - Zone prohibitions for HRS
 - Small scale production and storage
 - Permitting process
 - Safety requirements for HRS (incl. distances)
- Similar treatment / incentives as other technologies
- HFC Vessels
- Injection of H₂ into the Gas Grid

- **Many others**



More research / deeper understanding is needed before legislative action can be taken

- Hydrogen Storage and Distribution (HRS)
 - Storage needs of various hydrogen applications outside industrial zones
 - Permitting guidelines for both administrations and project developers
- Increased hydrogen flows in European gas networks
 - Technical and gas quality issues for injection and use of hydrogen in EU gas networks
 - Payment and tariff arrangements
 - need for gas appliance modification
 - Assessment of the implications for CNG vehicles with a higher hydrogen content gas



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