

# Guidance for HRS consenting phase

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## Introduction

### Context

The Joint Initiative for hydrogen Vehicles across Europe programme (JIVE and JIVE 2 projects) is introducing new fleets of fuel cell buses and associated hydrogen refuelling infrastructure in cities across Europe. In total around 290 new vehicles will be deployed and operated for extended periods in standard commercial operations in over 20 different cities. The overall objectives of the JIVE projects are to:

- Stimulate the market for fuel cell buses in Europe by creating demand for hundreds of vehicles.
- Lower the prices of fuel cell buses using joint procurement and economies of scale.
- Deploy and operate large fleets of fuel cell buses (up to 30 per site) and associated hydrogen refuelling infrastructure, and demonstrate the technology's ability to be a reliable, like-for-like replacement for diesel buses.
- Demonstrate routes to achieve low cost renewable hydrogen.
- Pave the way for commercialization of fuel cell buses in Europe in the 2020s by sharing information and stimulating further uptake.

### Joint Initiative for hydrogen Vehicles across Europe

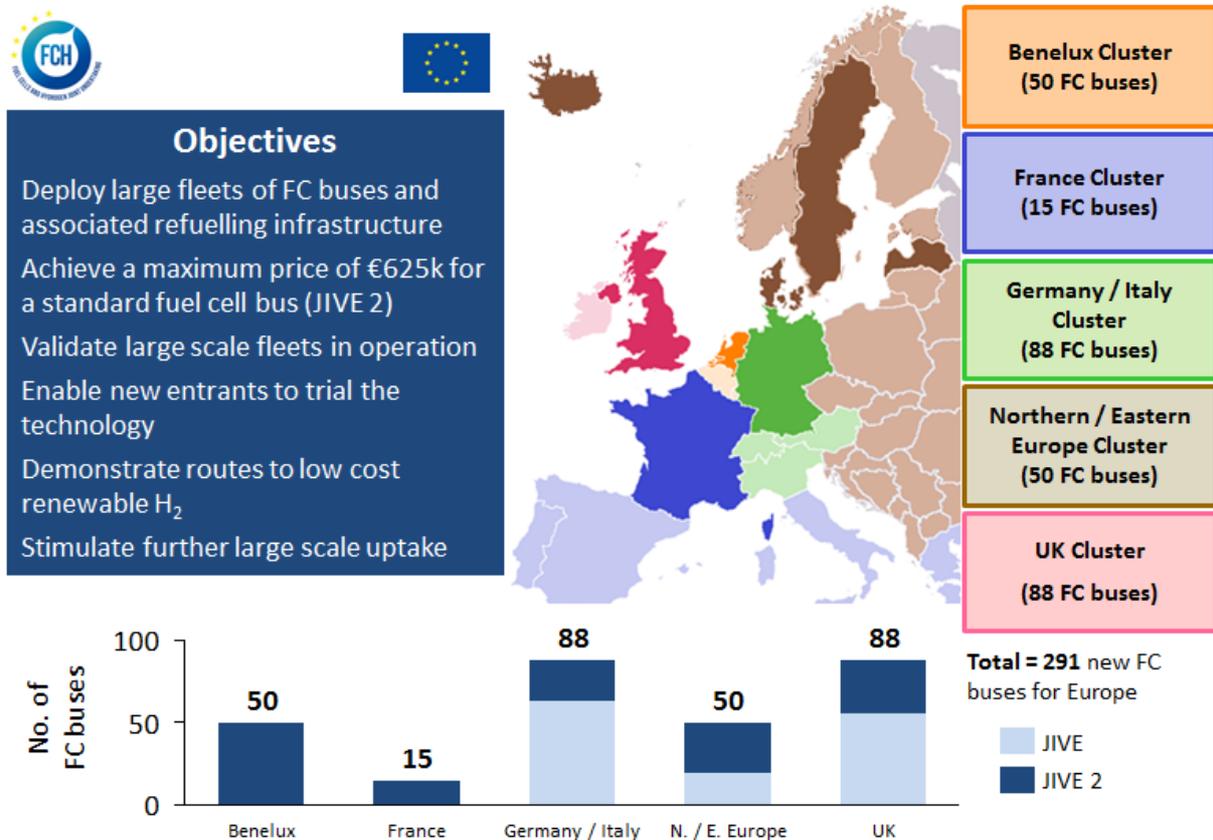


Figure 1: Overview of the JIVE and JIVE 2 projects

The JIVE projects include cities with a range of experiences relating to fuel cell buses, from those that have been operating fleets of such vehicles for many years (e.g. Aberdeen, Bolzano, Cologne, London), to cities / regions with limited prior knowledge of hydrogen buses.

## Document purpose, scope, and target audience

A major bottleneck identified by previous projects (CHIC) in hydrogen refuelling station (HRS) deployment is the 'permissions' phase. While HRS remain relatively novel in many cities / regions, there is a risk of delays in obtaining the permits required to install the hydrogen infrastructure. Adding to complications, permission procedures vary between countries and in some cases between regions.

This document provides guidance for cities participating in the JIVE 2 project seeking to install hydrogen refuelling stations. The guide gives country-specific information on the key approvals that are needed prior to installation, and provides references to further sources of useful information. Please note that while the authors have aimed to give comprehensive lists of approvals required, there is no guarantee that the information contained herein is entirely comprehensive and local project managers are urged to use this document alongside other reference information and advice from suitably qualified / experienced individuals.

Whilst the target audience is cities with limited prior experience in HRS installation, the information is likely to be a useful reference for any organisation planning a fuel cell bus project.

The JIVE projects provide a unique opportunity to share experience between the leading innovators in hydrogen fuel cell buses and to capture new learning through the practical experience gained in delivering the local projects. This guide will be amended based on feedback from participating cities to ensure that local procedures of each region are taken into account.

## Document structure

The document contains a table for each country in which fuel cell bus deployment projects are planned as part of the JIVE projects, containing:

- What approvals are needed
- Names of the relevant bodies to be consulted
- Further details for each approval step

Where possible, an indication of process timescales are given for each country.

Countries covered include:

- Denmark
- France
- Germany
- Iceland
- Italy
- Latvia
- Netherlands
- Norway
- Sweden
- UK

The references section consists of a list of European and country specific regulations, as well as links to relevant reports from previous projects by country.

## Planning and approval processes

### Typical process

| Process steps / approvals needed | Bodies to be consulted  | Further information  |
|----------------------------------|---|--|
| <b>Initial contact</b>           | Local planning / building authorities<br>Fire department<br>(Sometimes:<br>Environmental authority, Health and Safety Authority)<br>Site owner (landlord) |  |
| <b>Design</b>                    |   |  |
| <b>Obtaining approvals</b>       | Central authority or collection of previously consulted authorities   | A building permit is generally required for a new hydrogen refuelling station. Approval from the landlord (and a lease agreement for the land that the station will occupy) is also needed. In some cases further permits (environmental permit, hazards etc.) may also be required. |
| <b>Station is built</b>          |   | Equipment must comply with European 'Pressure Equipment Directive' (PED) and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.   |
| <b>Inspections</b>               | Local authorities<br>3 <sup>rd</sup> party  | Site inspected to ensure plan is met and assembly is correct.<br>Emergency plans / fire department plan of attack finalised.   |
| <b>Final permits</b>             |   | Operating permits issued.  |

## Denmark

| Process steps / approvals needed | Bodies to be consulted   | Further information   |
|----------------------------------|--|---|
| <b>Start of dialogue</b>         | Local city authorities<br>City authorities involved in previous station installations                                      | Initial meeting to discuss scope and exchange of experiences between city authorities.  |
| <b>Permit applications</b>       | Local building authorities<br>Local fire authorities<br>Danish Emergency Management Agency (DEMA)<br>Site owner (landlord) | A building permit is required from the local building authorities. Amongst requirements are an emergency plan for the station and a safety distance plan.<br>A permit to operate with flammable gas is required from the local fire authorities.<br>A permit may also be required from the DEMA depending on the maximum amount of hydrogen stored at the facility. This is outlined in Danish Working Environment Authority regulation BEK nr 1444.<br>Note: A longer procedure will need to take place if the suggested location does not suit the municipality's detailed development plan for the area. This procedure may involve granting an exemption or changing of the development plan. |
| <b>Station is built</b>          |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.   |
| <b>Approvals</b>                 | Sikkerhedsstyrelsen  | Hydrogen metering accuracy must be approved by the approval authority (Sikkerhedsstyrelsen).  |

## France

The total time from project start to commissioning took 24 months in JIVE 2. ICPE ((installations classées pour la protection de l'environnement) declaration takes ~2 months, whilst authorisation (if needed) takes ~1 year. The building permit takes 1–6 months to acquire. Detailed plans for the site and station provider commissioning typically take 1–3 months.

Note: to file the building permit, you need the receipt attesting that you filed an ICPE declaration.

The ICPE declaration and building permit can then be assessed in parallel (not one after another) in order to save a few months. Construction can start once the building permit has been approved. If ICPE authorisation is needed, you must wait until this is successful before beginning the build.

It must be determined with certainty which legal entity appears on the ICPE declaration and building permit (not always the same). Previously, the operator was the declarant of the ICPE declaration and the transport authority was the declarant of the building permit.

| Process steps / approvals needed                               | Bodies to be consulted  | Further information   |
|--|---|---|
| Detailed plans for the site and installation                   | Site owner (landlord)   | Location and future plans for the site discussed. Installation details and mapping of the area is finalised. ATEX zoning must be taken into account at this stage although the final analysis will be conducted by the selected equipment manufacturers.  |
| Contact involved bodies  | Directions Régionales de l'Environnement, de l'Aménagement et du Logement (DREAL), Local Fire Brigade | Inform relevant bodies of plans for the project. Enquire about documents required and potential objections. Fire brigade will need time to get ready and provide training.  |
| Station provider is commissioned                               |   |   |
| Document relative to the Prevention against explosions (DRCPE) | Control office  | DRCPE prepared based on the ATEX zoning of the station. The document is to be certified by a control office.  |
| Building permit  | Local building authorities  | Civil installations (e.g. bitumen zone / concrete pads to deploy station, access to road, security fences / walls, firewalls etc.) need building permits from the local regulatory authorities.<br>The local development plan may also require special additional accommodations.   |
| ICPE   | Directions Régionales de l'Environnement, de l'Aménagement et du Logement (DREAL)                     | Hydrogen is subject to ICPE regulation items 4715 for storage and 3420 for production.<br>A new section specific to hydrogen distribution stations is being prepared for publication in early 2019. The new regulation will specify: <ul style="list-style-type: none"> <li>• Safety distances between the station and surrounding properties.</li> <li>• Safety distances from the station to other energy stored on site (e.g. petrol)</li> </ul> |

|                         |  |  |
|-------------------------|--|--|
|                         |  | <ul style="list-style-type: none"> <li>• Establishment of hydrogen and fire detectors in closed rooms, a degassing vent and at least one entrance to allow for the intervention of fire and rescue services at all times.</li> <li>• Site security (signage, cameras, management of access, alarms, emergency stop etc.).</li> </ul> <p>At the moment, depending on the quantity of hydrogen stored on site, either a declaration must be completed or authorisation must be granted from DREAL.</p> <p>Note: you may need to comply with other regulation, for example when removing trees or handling waste water.</p> |
| <b>Station is built</b> |  | <p>Equipment must comply with European PED and ATEX regulations.</p> <p>CE marking should be applied and a certificate of conformity signed by the manufacturer.</p> <p>Equipment must meet SAE J refill standards.</p>  |

## Germany

The time to acquire approvals in the CHIC project city Hamburg was approximately one year including the time to prepare the required documentation. Documentation (e.g. those specified by BimSchG-Verfahren – Technical drawings of station, area plans, safety sheets etc.) must be made public for a certain period to allow the public to oppose the project if good reasons are given.<sup>1</sup> This extends the process and means that the publication of documents must be communicated well in advance. Hamburg also reported that the authority used incorrect standards which would have led to an increased operating cost, and so time was needed to educate the authority on the correct regulations. Further delay was caused by heavy documentation requirements.

The process in Cologne (CHIC project) was far smoother with no major hurdles and completion on time and in budget.

In case of the two currently planned stations in the Cologne region under the JIVE project a building permit (“Baugenehmigung”) is required as well as a permission for the operation (§18 Betriebssicherheitsverordnung (BetrSichV)). Because the storage capacity is below 3 tonnes and there is no on-site production, no *BlmSchG* procedure is required.

If the *BlmSchG* procedure is required, an application for the construction is included in the procedure (does not need to be applied for separately). The *BetrSichV* procedure is much easier to complete than the *BlmSchG*.

Once the licensing application has been acknowledged and all necessary documents have been completely handed in, the maximum processing period (time till a decision from the licensing authority) for *BetrSichV* is 3 months. The maximum processing period for on-site production (*BlmSchG*) varies from 3–7 months.

Approval guidelines for hydrogen refuelling stations in Germany are available from: <https://www.h2-genehmigung.de/leitfaden>.

<sup>1</sup> For a full list of documentation required, see section 4 of the CHIC project deliverable available from [www.fch.europa.eu/sites/default/files/project\\_results\\_and\\_deliverables/D.4.3b\\_CHIC%20report\\_Certification%20of%20buses%26H2%20infrastructure\\_final.pdf](http://www.fch.europa.eu/sites/default/files/project_results_and_deliverables/D.4.3b_CHIC%20report_Certification%20of%20buses%26H2%20infrastructure_final.pdf).

| Process steps / approvals needed               | Bodies to be consulted  | Further information   |
|--|---|---|
| <b>Identify licensing authority</b>            | Licensing authority   | Licensing authority varies by region. An online tool at <a href="https://www.h2-genehmigung.de/leitfaden">https://www.h2-genehmigung.de/leitfaden</a> identifies the relevant body.<br>Contact should be kept with a relevant person throughout the project.  |
| <b>Study of the approval process</b>           |   | Distinguish between H2 delivered fuelling station and a H2 fuelling station with on-site production – there are different governing regulations.<br>Understand scope, duration and cost implications of process.  |
| <b>Preliminary meeting</b>                     | Licensing authority   | Inform authority on location and its specific features.<br>Inform authority on objective and approach.<br>Receive feedback.   |
| <b>Detailed concept of the facility</b>        | Stakeholders  | Discussion of the draft based on feedback from licensing authority meeting.<br>Site viewing.<br>Determine the next steps (with reference to the licensing application).   |
| <b>Approval by customs office</b>              | Customs office  | Apply for permission for the distribution of hydrogen as a fuel by the petroleum company.   |
| <b>Obtain a ZÜS report (expert opinion)</b>    | ZÜS expert  | List of ZÜS experts:<br><a href="https://www.baua.de/DE/Aufgaben/Gesetzliche-und-hoheitliche-Aufgaben/Produktsicherheitsgesetz/pdf/Pruefstellen-01.pdf?blob=publicationFile">https://www.baua.de/DE/Aufgaben/Gesetzliche-und-hoheitliche-Aufgaben/Produktsicherheitsgesetz/pdf/Pruefstellen-01.pdf? blob=publicationFile</a> (German)   |
| <b>Building approval</b>                       | local building authority or the building supervisory authority (“Bauamt”) | Approval according to the building laws by the lower building inspection. The building permit is granted if the project complies with the planning and building regulation law as well as with all other applicable laws (such as environmental laws). (Already included in BlmSch procedure)<br>The application must include a detailed plan of the project, accompanied by necessary supporting documentation such as site plan, construction drawings, building specifications, and documentation regarding heating, noise prevention, and fire protection plans. The documentation required for the application must also be presented to adjacent property owners. The processing time for the building permit – once all documents have been completely handed in – is usually six weeks. |
| <b>Submit licensing application</b>            | Licensing authority   | Exact details vary with licensing authority and fuelling station type (BlmSch or BetrSichV).<br>The ZÜS report forms the basis for the application.<br>Further details for the application are found: <a href="https://www.h2-genehmigung.de/leitfaden">https://www.h2-genehmigung.de/leitfaden</a>   |
| <b>Acceptance of the licensing application</b> | Licensing authority   | The applicant should be told how long it may take to examine the application.   |

|  |                                   |  |
|--|-----------------------------------|--|
| <b>Granting of the permit for construction and operation</b> | Licensing authority               | Processing period starts upon acceptance of licensing application.   |
| <b>Station is built</b>                                      |                                   | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.  |
| <b>Further documentation prepared</b>                        |                                   | Hazard assessment, explosion protection document, emergency plan, alarm and fire brigade notification plan, pressure equipment document and electrical wiring diagram are generally required.  |
| <b>ZÜS preliminary inspection / official inspection</b>      | ZÜS expert                        | It is advised there is a preliminary informal inspection prior to the official inspection so that remaining problems can be identified.<br>The official inspection will: <ul style="list-style-type: none"> <li>• Check documentation is complete</li> <li>• Check the facility abides by the approved plan</li> <li>• Check for proper installation and assembly</li> <li>• Check electrical safety and function</li> <li>• Check explosion protection</li> </ul> ZÜS acceptance certificate are sent to the licensing authority. |
| <b>Post commissioning inspections</b>                        | ZÜS expert<br>Licensing authority | Repeat safety inspections are generally specified by the equipment supplier maintenance plans. This is checked by ZÜS and sent to the licensing authority.   |
| <b>Vehicle manufacturer inspection</b>                       | Vehicle manufacturer              | It is generally necessary for the vehicle manufacturer to inspect the hydrogen quality and filing.   |

## Iceland

| Process steps / approvals needed          | Bodies to be consulted   | Further information   |
|---|--|---|
| <b>Typical step – initial contact</b>     | Local planning / building authorities<br>Fire department<br>(Sometimes: Environmental authority, Health and Safety Authority)<br>Site owner (landlord) |   |
| <b>Typical step – design</b>              | Site owner (landlord)  |   |
| <b>Typical step – obtaining approvals</b> | Central authority or collection of previously consulted authorities  | Building permit required.<br>(Sometimes: Environmental permit, hazards permit etc.).  |
| <b>Station is built</b>                   |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer. |
| <b>Typical step – Inspections</b>         | Local authorities<br>3 <sup>rd</sup> party   | Site inspected to ensure plan is met and assembly is correct.<br>Emergency plans / fire department plan of attack finalised.                              |
| <b>Typical step - Final permits</b>       |  | Operating permits issued.   |

## Italy

The CHIC infrastructure approval process (in Milan) was initially expected to take three months, but ended up being over a year. Additional detailed drawings and several meetings with the authorities added to time and costs, as did the lack of an overarching regulatory authority – no single authority was in charge and various authorities had to be consulted individually.

Complications resulted in the CHIC city of Bolzano due to the unfamiliarity of the technology – authorities needed clarification on aspects of hydrogen (e.g. safety). Dedicated conferences to explain the project in detail to the local authorities were also needed. The process for acquiring a building license took over a year.

The national law for hydrogen infrastructure (Ministry Decree of 31<sup>st</sup> August 2006) imposes extreme caution regarding safety distances, protection and control systems and acts as a major planning obstacle to efficient design according to the CHIC city of Bolzano.

| Process steps / approvals needed   | Bodies to be consulted   | Further information   |
|------------------------------------|--|---|
| <b>Basic design</b>                | Site owner (landlord)  | Layout of the station, civil works etc. Should comply with Ministry Decree of 31 <sup>st</sup> August 2006.   |
| <b>Obtaining permits</b>           | Local fire authority<br>Local fuels office<br>Local Building office<br>Site owner (landlord) | Project assessment request and environmental permit from the local fire authority.<br>Fuel station building authorisation request from the local fuels office.<br>Civil works authorisation request from the local building office. |
| <b>Building works notification</b> | Work health and safety office  | Notify the health and safety office of the beginning of building works.   |
| <b>Station is built</b>            |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.   |
| <b>Commissioning</b>               | Local authority  | Involves start-up inspection.   |
| <b>Fire prevention</b>             | Local fire department  | Fire prevention certificate request from the local fire department.   |
| <b>Operating permits</b>           | Local fuels office / Local office of trade and services                                      | Operation authorisation request from the local fuels office or local office of trade and services.  |
| <b>Ongoing inspections</b>         | HRS supplier   | Inspections completed in accordance with the tender document.   |

## Latvia

The time from site selection until planning application for Riga in the H2Nodes project was 2 months. Further information was required by the authorities after 2 weeks, and approval was granted one month later.

| Process steps / approvals needed             | Bodies to be consulted                       | Further information   |
|--|--|---|
| <b>Site selection</b>                        | External contractor<br>Site owner (landlord) | Legal framework, safety issues and technical aspects analysed in site selection studies.  |
| <b>Preparation of documents</b>              | Site owner (landlord)                        | Drawings for site, architectural sketches, basic technical design, quantitative risk assessment etc. needed for planning / building consent.              |
| <b>Apply for planning / building consent</b> | Building Authorities                         |   |
| <b>Planning / Building consent granted</b>   | Building Authorities                         |   |
| <b>Station is built</b>                      |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer. |
| <b>Station commissioning</b>                 |  | Additional tests (e.g. alignment of production, storage and refuelling units) required before operation.  |

## Netherlands

| Process steps / approvals needed | Bodies to be consulted  | Further information  |
|----------------------------------|---|--|
| <b>Initial consultation</b>      | Environmental and building local authority<br>Competent authority<br>Fire brigade<br>Design team<br>Site owner (landlord) | Outline project, discuss feasibility, receive feedback.  |
| <b>Environmental permit</b>      | Environmental department<br>Competent authority<br>Fire brigade<br>Site owner (landlord)                                  | The owner applies to the environmental department for an environmental permit. The environmental department then prepares the permit, which is granted by the competent authority.<br>There is compulsory advice from the fire brigade.  |
| <b>Building permit</b>           | Building Department<br>Competent authority<br>Site owner (landlord)   | The owner applies to the building department for a building permit. The building department then prepares the building permit which is granted by the competent authority.   |
| <b>Station is built</b>          |   | The required components shall comply with the 'European Pressure Equipment Directive' (PED) and hence carry CE marking. Testing during build phase to ensure that assembly complies with national directive 'Pressure Equipment Decree' and ATEX regulations shall be conducted by notified bodies (NOBO). |
| <b>Initial inspection</b>        |   | All future testing in the usage phase shall be conducted by the relevant notified inspection body (AKI) or authorised user inspectorate (KVG).   |
| <b>Emergency plans</b>           | Local authority<br>Fire brigade   | Emergency response plans set up by local authority.<br>Fire brigade sets up plan of attack.  |

## Norway

Delays occurred in the permissions phase in the CHIC city of Oslo due to different (more strict) safety standards being used (a British standard was referred to).

| Process steps / approvals needed          | Bodies to be consulted   | Further information  |
|---|--|--|
| <b>Acquiring a building permit</b>        | Local building authorities<br>(Local fire authorities)<br>Norwegian Public Roads Administration (NPRA) | Application to be sent to the local building authorities. In some cases, the building authorities will consult the fire authorities for comment on a building permit application. The building authority will also check with NPRA if they have any objections with respect to roads etc.<br>Note: A longer procedure will need to take place if the suggested location does not suit the municipality's detailed development plan for the area. This procedure may involve granting an exemption or changing of the development plan. |
| <b>Notifying neighbours</b>               | Neighbours   | Neighbours have 2 weeks after notification to comment on the application   |
| <b>Station is built</b>                   |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.  |
| <b>Notifying DSB of flammable gas use</b> | Directorate for Civil Protection and Emergency Planning (DSB)<br>Local fire authorities                | There is a requirement to notify and provide certain information to DSB. This is delivered electronically to DSB's homepage according to a guided procedure (Notification of hazardous substance handling).<br>DSB will inform the local fire authorities, who will make inspections of the facility if they wish to. Notification should be sent 'within a reasonable time prior to the start of operation'   |
| <b>Documented plans made</b>              |  | Regulation FOR-2009-06-08 No. 602 requires (amongst other) documented plans for emergency preparedness & response and risk assessments (including consideration of safety for surrounding areas).  |
| <b>Facility inspection</b>                | 3 <sup>rd</sup> party  | The facility will be inspected by a 3 <sup>rd</sup> party inspection body accredited by Norsk Akkreditering.   |

## Sweden

| Process steps / approvals needed  | Bodies to be consulted                                       | Further information   |
|---|--|---|
| <b>Planning and design of HRS, design inspection</b>                                      | Local building and Fire authorities<br>Site owner (landlord) | Consultation with local building and fire authorities. Design inspection of the pressurised equipment is needed (conducted by a notified body, 3 <sup>rd</sup> party or manufacturer according to Arbetsmiljöverket AFS 1999:4 regulation).   |
| <b>Written application to build a HRS, written application for handling flammable gas</b> | Local building authority                                     | If compliant with regulation, a permit is granted from the local authority.   |
| <b>Inform of the persons responsible for handling flammable gas</b>                       | Local fire authority   | Notification is required in writing. Should detail the appointed person and the deputy responsible.   |
| <b>Station is built</b>   |  | Equipment must comply with European PED and ATEX regulations.<br>CE marking should be applied and a certificate of conformity signed by the manufacturer.   |
| <b>Temporary permit for trial operation</b>   | Local fire authorities                                       | Enables required inspections.   |
| <b>Installation inspection</b>  | Accredited bodies  | Temperature compensation and penetration of air into compressors inspected (according to Statens räddningverk S ÄIFS 1998:5).   |
| <b>Inspections on site</b>  | Owner of the HRS<br>Competent inspector<br>Local authority   | Pressurised equipment inspected by owner of the HRS or accredited body (according to AFS 2005:3).<br>Electrical installations inspected by a competent inspector e.g. an inspector authorised by Elektriska Nämnden.<br>Flammable gas handling inspection by the local authorities, plus verification that other inspections have been passed.<br>Building inspection by the person appointed responsible for building quality. |
| <b>Permit for operation issued</b>  | Local authority  | The local authority issues a written permit for operation and a final receipt.  |

## UK

The overall approval process in CHIC took over a year, mainly due to the increased safety requirements due to the fact that London was hosting the Olympic Games in 2012, i.e. decisions by the Olympic Authority on what would be built in the vicinity of the station had the potential to affect the design of the hydrogen refuelling station.

The cost of the CHIC approval process was approximately £50,000.

In the HyTEC project (which delivered a publicly accessible HRS for passenger cars, vans and taxis in London), the time from application submission to permission being granted was 2 months. The procedure was accelerated due to the HRS site being within a permitted development area on land owned by Heathrow Airport (a partner in the project).

| Process steps / approvals needed                               | Bodies to be consulted  | Further information  |
|--|---|--|
| <b>Initial contact</b>   | Local planning authority<br>Site owner (landlord)               | Select site.<br>Discuss feasibility.<br>Understand documentation required.<br>Understand details of the local planning process.  |
| <b>Outline design work</b>                                     |   | Outline of the station design to be produced for consultation with required bodies.  |
| <b>Seek input</b>  | Local Police, Fire Service,<br>Health and Safety Representative | Inform the local bodies of the outline plans.<br>Seek input to be considered in detailed design.<br>Note that in some cases it may not be necessary to consult the full range of bodies listed here. Specialist planning consultants can also be consulted to advise on steps that should be taken to maximise the chances of a successful planning application. |
| <b>Hazardous substances application</b>                        | Hazardous Substances Authority                                  | Details found: <a href="https://www.gov.uk/guidance/hazardous-substances#Applying-for-hazardous-substances-consent">https://www.gov.uk/guidance/hazardous-substances#Applying-for-hazardous-substances-consent</a><br>Approximate time: 8 weeks  |
| <b>Initial contact</b>   | Building sub-contractor   | Discuss civil engineering required, provision of power supplies and installation of safety and security measures prior to finalising design work.  |
| <b>Detailed design work</b>                                    | Building sub-contractor   | Complete a detailed design for the station based on feedback.<br>HRS equipment provider should work closely with the sub-contractor.<br>Obtain a quote for the civil and electrical engineering.   |
| <b>Collate documentation required for planning application</b> |   | Example of items needed: <ul style="list-style-type: none"> <li>• <b>Covering letter</b> outlining the proposed development, together with a cheque for the application fee.</li> <li>• <b>Introduction to hydrogen and the project.</b> A brief document with some basic information about hydrogen, hydrogen activities in the UK and the project.</li> </ul>  |

|  |                          |  |
|--|--------------------------|--|
|  |                          | <ul style="list-style-type: none"> <li>• <b>Site plan.</b> A map of the site showing the proposed location of the HRS in the context of the surrounding area.</li> <li>• <b>Station layout drawing.</b></li> <li>• <b>Safety distance plan.</b> A plan of the site exclusion zones.</li> <li>• <b>Design and access assessment.</b> A written description of the proposed development (including the layout, scale and appearance), the context of the project, references to the relevant policies of the local authority's plans, and a statement on how vehicles will access the site and the HRS.</li> <li>• <b>Photograph</b> of an existing HRS to provide an indication of the expected visual appearance of the developed site.</li> </ul> |
| <b>Submit application to local authority</b> | Local Planning Authority |  |
| <b>Feedback on decision</b>                  | Local Planning Authority | <p>Either:</p> <p>Application is granted within 8 weeks of acknowledgement of application</p> <ul style="list-style-type: none"> <li>○ Start work</li> </ul> <p>Application is not decided within 8 weeks</p> <ul style="list-style-type: none"> <li>○ Appeal to the Secretary of State</li> </ul> <p>Permission refused</p> <ul style="list-style-type: none"> <li>○ Change proposal and submit new application</li> </ul>  |

## References

### Regulations

European Pressure Equipment Directive (PED) – **Europe** – May 2014 (revised) – regulations regarding handling of pressurised equipment, required for CE marking - <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0068>

ATEX Directive – **Europe** – March 2014 (revised) – regulations relating to equipment intended for use in potentially explosive atmospheres - <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0034&from=EN>

EIGA standards – **Europe** – technical standards of the European Industrial Gases Association (Docs 15/06, 6/02, 75/01, 23/00, 40/02, 88/02, 90/03, 100/03, 102/03, 122/04) - <https://www.eiga.eu/publications/eiga-documents/>

SAE J standards – **France** – refill standards (2601) - <http://libguides.uky.edu/c.php?g=222976&p=1476604>

LASI 49/2008 – **Germany** – 2008 – German industrial safety standard which forms the basis of the ZÜS report (in this instance: Application documents for pressurised gas filling stations)

§ 13 of the Ordinance on Industrial Safety and Health (BetrSichV) – **Germany** – licensing procedure for delivered H2 stations (replaced by Verordnung zur Neuregelung der Anforderungen an den Arbeitsschutz bei der Verwendung von Arbeitsmitteln und Gefahrstoffen in June 2015) - <http://docplayer.org/214659-Verordnung-zur-neuregelung-der-anforderungen-an-den-arbeitsschutz-bei-der-verwendung-von-arbeitsmitteln-und-gefahrstoffen.html>

Bundes-Immissions-Schutz –Gesetz – **Germany** - 2002 (revised) – harmful environmental impacts protection (applies for above 3 tons of stored hydrogen) or H2 production on site - <http://www.gesetze-im-internet.de/bimschg/>

Störfallverordnung – **Germany** – 2000 – Hazardous incident Ordinance for storing more than 5 tons hydrogen

Fire prevention decree DM 31/8/06 – **Italy**

PGS 35 – **Netherlands** – April 2015 – overview of all regulations relating to the Netherlands concerning hydrogen infrastructure - <http://content.publicatiereeksgevaarlijkstoffen.nl/documents/PGS35/PGS%2035%20voor%20website%20onderterkend.pdf>

Pressure Equipment (Commodities Act) Decree – **Netherlands** – country specific regulation relevant to equipment assembly - <https://www.kiwa.com/en/service/ped-commodities-act-pressure-equipment>

Plan og bygningsloven – **Norway** – 2008 – planning and building laws - <https://lovdata.no/dokument/NL/lov/2008-06-27-71>

Brann og eksplosjonsvernsloven – **Norway** – 2002 – fire and explosion prevention - <https://www.regjeringen.no/no/dokumenter/brann--og-eksplosjonsvernloven/id87138/>

Overview of Scandinavian regulations -

[https://www.fch.europa.eu/sites/default/files/project\\_results\\_and\\_deliverables/D2-2\\_CertificatonApproval\\_H2stations-cars.pdf](https://www.fch.europa.eu/sites/default/files/project_results_and_deliverables/D2-2_CertificatonApproval_H2stations-cars.pdf)

Control of Major Accidents and Hazards (COMAH) regulations – **UK** – 2015 (revised) – regulations aimed to mitigate the effects of major accidents involving dangerous substances -

<http://www.hse.gov.uk/comah/background/comah15.htm>

Latvia – Relevant National Laws: Construction Law, Protective Zone Law, Law on Technical Supervision of Hazardous Installations, General Construction Regulations, Fire Safety Regulations, Labour Protection Requirements During Construction, Provisions on Pressure Equipment and their Complexes, Procedures for the Technical Supervision of the Storage of Hazardous Substances, Regulations on Hazardous Equipment, Latvian Construction Standard LBN 201-10 “Building Fire Safety”.

## Past projects / guidelines

Denmark

H2 moves report - [https://www.fch.europa.eu/sites/default/files/project\\_results\\_and\\_deliverables/D2-2\\_CertificatonApproval\\_H2stations-cars.pdf](https://www.fch.europa.eu/sites/default/files/project_results_and_deliverables/D2-2_CertificatonApproval_H2stations-cars.pdf)

France

HyApproval findings -

[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Final\\_Handbook.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Final_Handbook.pdf),

[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Handbook-Appendix\\_II.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Handbook-Appendix_II.pdf)

Germany

HRS specific implementation guidelines - <https://www.h2-genehmigung.de/Leitfaden/Index?lang=1>

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[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Final\\_Handbook.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Final_Handbook.pdf),

[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Handbook-Appendix\\_II.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Handbook-Appendix_II.pdf)

CHIC project -

[http://www.fch.europa.eu/sites/default/files/project\\_results\\_and\\_deliverables/D.4.3b\\_CHIC%20report\\_Certification%20of%20buses%26H%20infrastructure\\_final.pdf](http://www.fch.europa.eu/sites/default/files/project_results_and_deliverables/D.4.3b_CHIC%20report_Certification%20of%20buses%26H%20infrastructure_final.pdf),

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There is a guide for HRS construction in North Rhine-Westphalia, which has achieved much faster permitting processes than for other states in Germany -

[http://www.energieagentur.nrw/content/anlagen/Erlaubnisverfahren\\_H2-Tankstellen\\_2017\\_Juli.pdf](http://www.energieagentur.nrw/content/anlagen/Erlaubnisverfahren_H2-Tankstellen_2017_Juli.pdf)

Iceland

H2ME project

## Italy

HyApproval project findings -

[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Final\\_Handbook.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Final_Handbook.pdf),

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CHIC project -

[http://www.fch.europa.eu/sites/default/files/project\\_results\\_and\\_deliverables/D.4.3b\\_CHIC%20report\\_Certification%20of%20buses%26H2%20infrastructure\\_final.pdf](http://www.fch.europa.eu/sites/default/files/project_results_and_deliverables/D.4.3b_CHIC%20report_Certification%20of%20buses%26H2%20infrastructure_final.pdf),

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## Latvia

H2Nodes Project

## Netherlands

HyApproval project findings -

[http://www.hyapproval.org/Publications/The\\_Handbook/HyApproval\\_Final\\_Handbook.pdf](http://www.hyapproval.org/Publications/The_Handbook/HyApproval_Final_Handbook.pdf),

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## Norway

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## UK

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