REPORT

# Final Technical Report

## Clean Hydrogen Joint Undertaking
## FCH / OP / CONTRACT NO. 315

April 2024

Clean Hydrogen Partnership

MISSION INNOVATION

Inycom
innovation technologies

Roland Berger

This report has been prepared under the Direct Service Contract
FCH / OP / Contract 315 of the European Commission,
contracted by the Clean Hydrogen Joint Undertaking
implemented by a consortium of Roland Berger and Inycom

## CONTACT

**Roland Berger**
hydrogenvalleys@rolandberger.com

**Clean Hydrogen Joint Undertaking**
info@clean-hydrogen.europa.eu
Clean Hydrogen JU, B-1049 Brussels

**Mission Innovation Clean Hydrogen Mission**
EC-MI-clean-hydrogen-mission@ec.europa.eu

**Table of contents**

# Abstract

This Final Technical Report summarizes the technical achievements and describes the platform developments as a result of the project. The report is structured around the main deliverables and activities carried out over the course of the project:

- Section 1 describes the public part of the web portal (www.h2v.eu) in its current version (May 2024), with all sections developed according to the specifications collected in the Inception Report and evolved with progressive iterations.
- Secrion 2 focuses on the It related developments in the portasl's back-end to ensure stable and optimized operations.
- Section 3 describes the overall activities and actions carried out during the contract to complement the back-end perspective.
- Section 4 describes the communication activities developed in the project with the purpose of positioning the web portal and giving visibility to the 'hydrogen valley' initiatives.

**Project progress**

At this moment, the project has produced all the deliverables and reached the milestones as agreed in the Inception Report.

**Outlook**

In order to finalize the contract, the following activities will be carried out:

- From the perspective of the web portal, the handover of the MI H2V 2.0 platform will be executed to deliver it to the Clean Hydrogen JU or service provider in charge of maintenance and operation.
- From the perspective of the communication activities, the Final Report will be published on the portal and the relative documentation to continue with these activities will be issued to the Clean Hydrogen JU or service provider.

# 1. Webpage hosting the platform

This section describes the H2V 2.0 platform, which is hosted in the www.h2v.eu domain acquired at the beginning of the first contract (FCH / OP / CONTRACT NO. 249). Below, the platform is described in terms of:

- Overview of structure, design and functionalities, describing the contents and features of each section of the platform, including the members area.
- Analytics of the portal, describing the Matomo tool which allows monitoring users' behaviour when navigating and accessing the website.
- Services Delivery Plan in the context of MI H2V 2.0 platform, which sets the path to transfer the portal to a third party in charge of continuation of the service.

## 1.1 Overview of structure, design and functionalities

This section describes the structure, design and functionalities available for users visiting the MI H2V 2.0 platform:

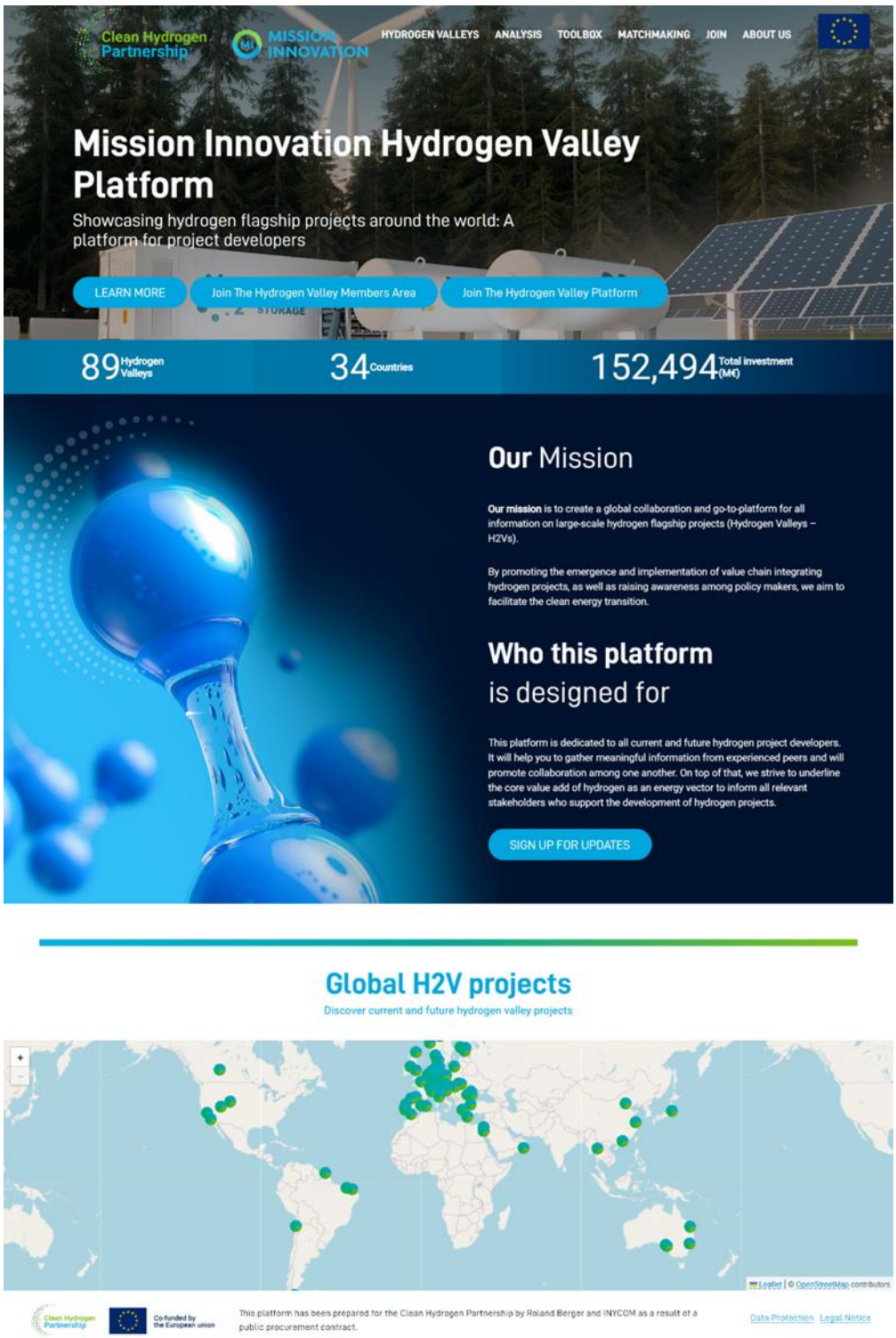
### 1.1.1 Home page

https://www.h2v.eu/

The Home page is the default page that appears when entering the portal (www.h2v.eu) and it is structured as follows:

- Heading. Firstly, the heading presents the logos of both, Mission Innovation and Clean Hydrogen JU, are located as well as the European Union flag. In the banner, The noticeable call to action (CTA) buttons invite the visitor to explore the 'Hydrogen Valleys' menu that is the core of the portal, visit and join the members area and join the platform through the 'mailto' button. Finally, there is a dedicated part of the Homepage which contains key performance indicators reached by the project (total number of Hydrogen Valleys represented, countries covered and Total investment volume in Million Euros).
- Mission and purpose. Secondly, the 'Mission and purpose' section is included, in which the aim of the H2V 2.0 platform is presented as well as an idea on which stakeholders are targeted by the platform. Here, the intention is that project developers and their supporters are targeted to promote the emergence of hydrogen projects.
- Hydrogen Valleys map. In the bottom part, the map with the location of the Hydrogen Valleys is displayed. This map is directly linked to the Hydrogen Valleys menu and, when clicking on the pins on the map, the user will be redirected to the 'Hydrogen Valleys' menu in addition to seeing the general information of the Hydrogen Valley.

**Figure 1: Home page of H2V 2.0 platform and overview of functionalities.**



### 1.1.2 Hydrogen Valleys menu

https://www.h2v.eu/hydrogen-valleys

This menu shows the Hydrogen Valleys represented in the portal and their specific information.

Firstly, there is an introductory text explaining how to use the menu and links to explore other sections of the portal. Next, the Hydrogen Valleys are shown on the map and, to help users, there is a country selector and a free search bar capability to find initiatives by introducing their name, location, etc. This map is developed in OpenStreetMaps[1], the europa.eu compliant tool for GIS location, with leaflet.js[2] libraries.

When clicking on a Hydrogen Valley pin in the interactive map, general information on it is displayed in a emergent tab (the same as the one shown on the map on the Home page). This general information can also be found in the list of Hydrogen Valley below the map. This is a list containing all the Hydrogen Valleys represented on the portal and their general information. In addition, by clicking on the '+' symbol on the right side of the list, a short description of the selected Hydrogen Valleys can be seen below in Figure 2.

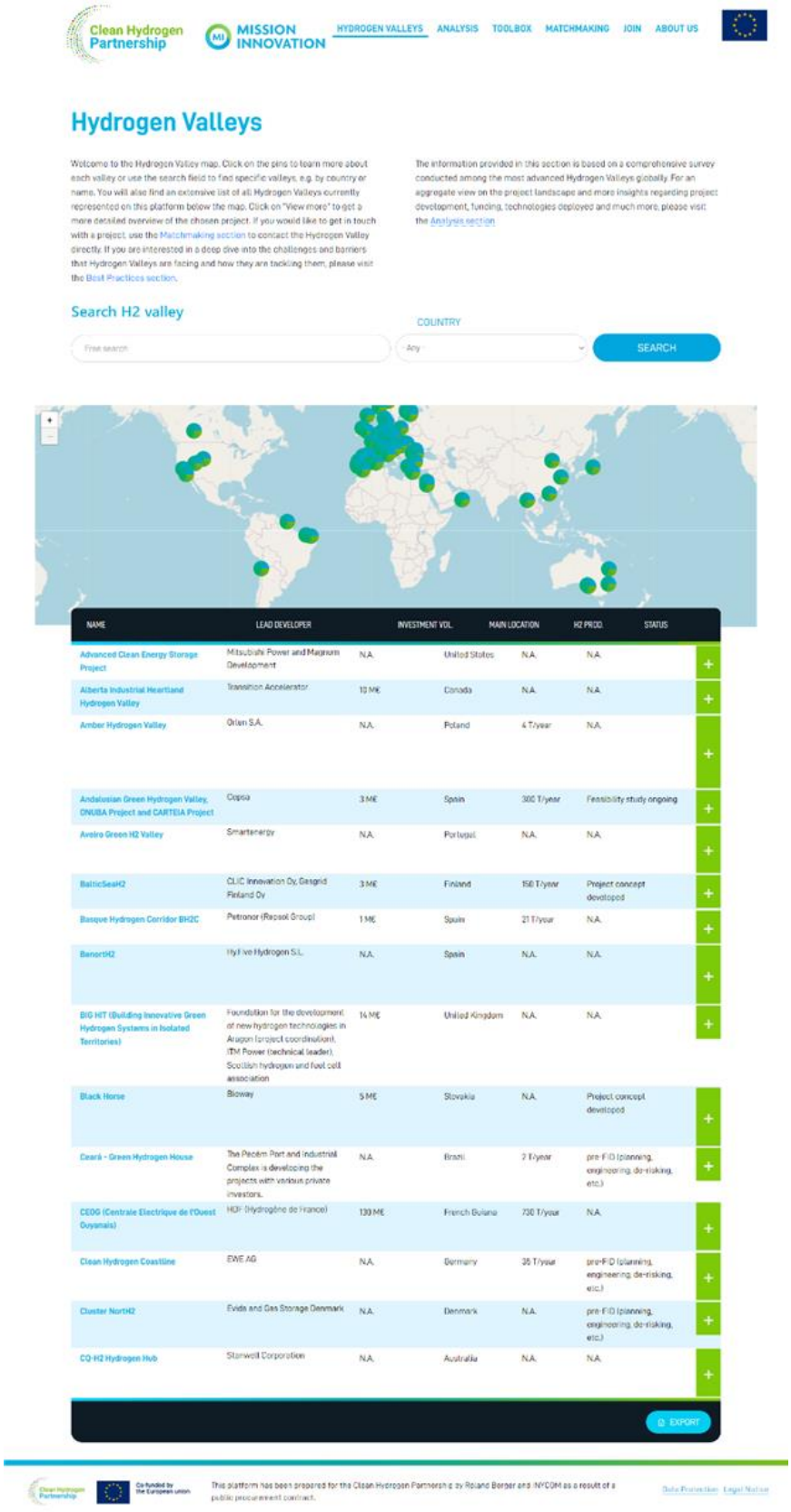
In both options, in the pins and in the list of Hydrogen Valleys, there is a 'View more' option. This button redirects to the specific profile of the selected Hydrogen Valley, which will be explained hereafter.

Lastly, there is an export option has been included which downloads the list of Hydrogen Valleys and their general and public information in a .csv format: lead developer, investemnt volume, main location, H2 production, Status, Funding sources, Value chain coverage & End use sectors.

[1] www.openstreetmap.org

[2] https://leafletjs.com/

**Figure 2: Hydrogen Valleys menu and functionalities.**



### 1.1.3 Hydrogen Valleys profiles

The long Hydrogen Valley profiles appear when clicking on the View more button in the Hydrogen Valleys menu, as mentioned above. Each long profile is structured as follows:

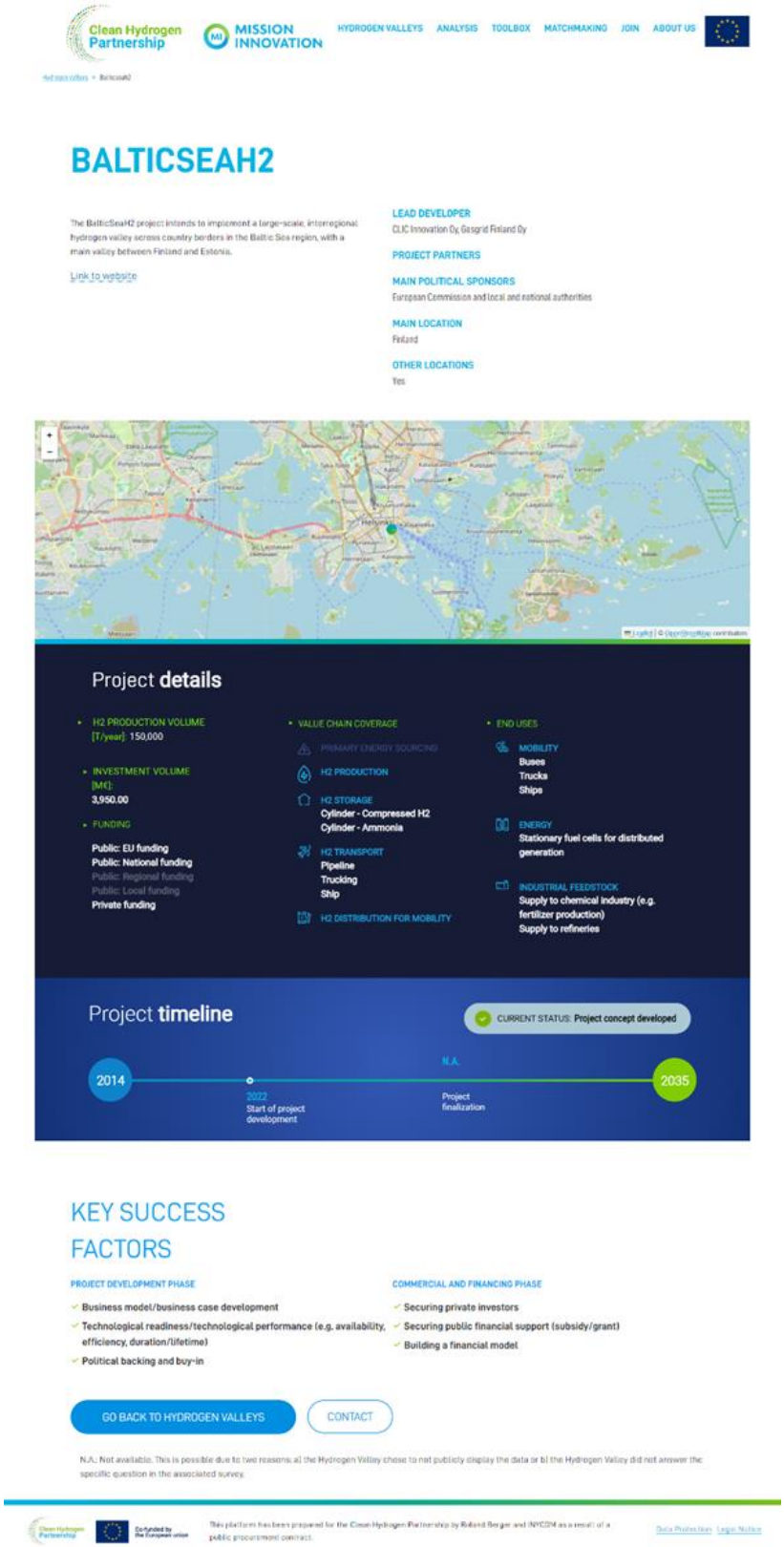
- **Heading.** In this part, the general information on each initiative is shown. This is, information on the lead developer, project partners and main political sponsors, including where it is located, a short description of the valley and the link to their website.
- **Location map.** This map shows the main location of the valley.
- **Project details.** In this section, the details of the project are shown. The Hydrogen production volume and Investment volume are displayed as well as the value chain coverage and end uses of the Hydrogen Valley. The origin of the funding is also presented.
- **Project timeline.** This timeline shows the year when the project started and the year of finalization of the project. This part also includes the current status of the project.
- **Key success factors.** This section includes the key success factors in both, project development phase as well as commercial and financing phase.

In the footer of the Hydrogen Valley profiles, there are 2 CTA buttons that redirect to the menu where all the projects are displayed or to the Matchmaking menu.

Lastly, it should be noted that the information shown on the profiles in the portal covers inputs which the Hydrogen Valleys have agreed to disclose in the survey process. If the information is not displayed, then 'N.A.' will appear instead. This can be for two reasons: (a) the Hydrogen Valley chose to not publicly display the data or (b) the Hydrogen Valley did not answer the specific question in the associated survey.

A sample of a Hydrogen Valley profile can be found below in Figure 3:

**Figure 3: Long profile of a Hydrogen Valley.**



### 1.1.4 Analysis menu

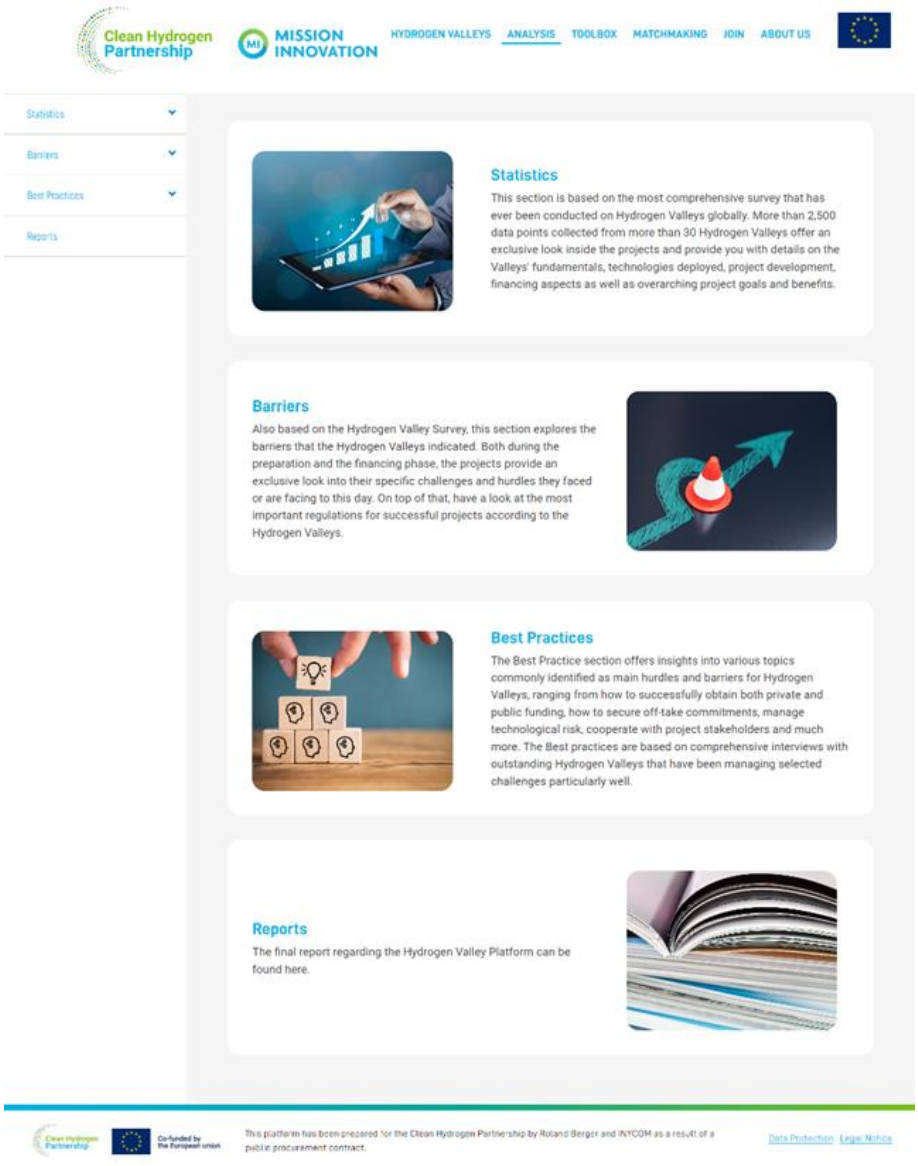
https://www.h2v.eu/analysis

This menu presents the main findings of the survey analysis, interviews and the project reports. The menu is divided in 4 submenus:

- Statistics
- Barriers
- Best practices
- Reports

In order to access to these submenus, this can be done through the menu on the left or the landing page, both shown in the screenshot below.

**Figure 4: Landing page in the 'Analysis' menu.**

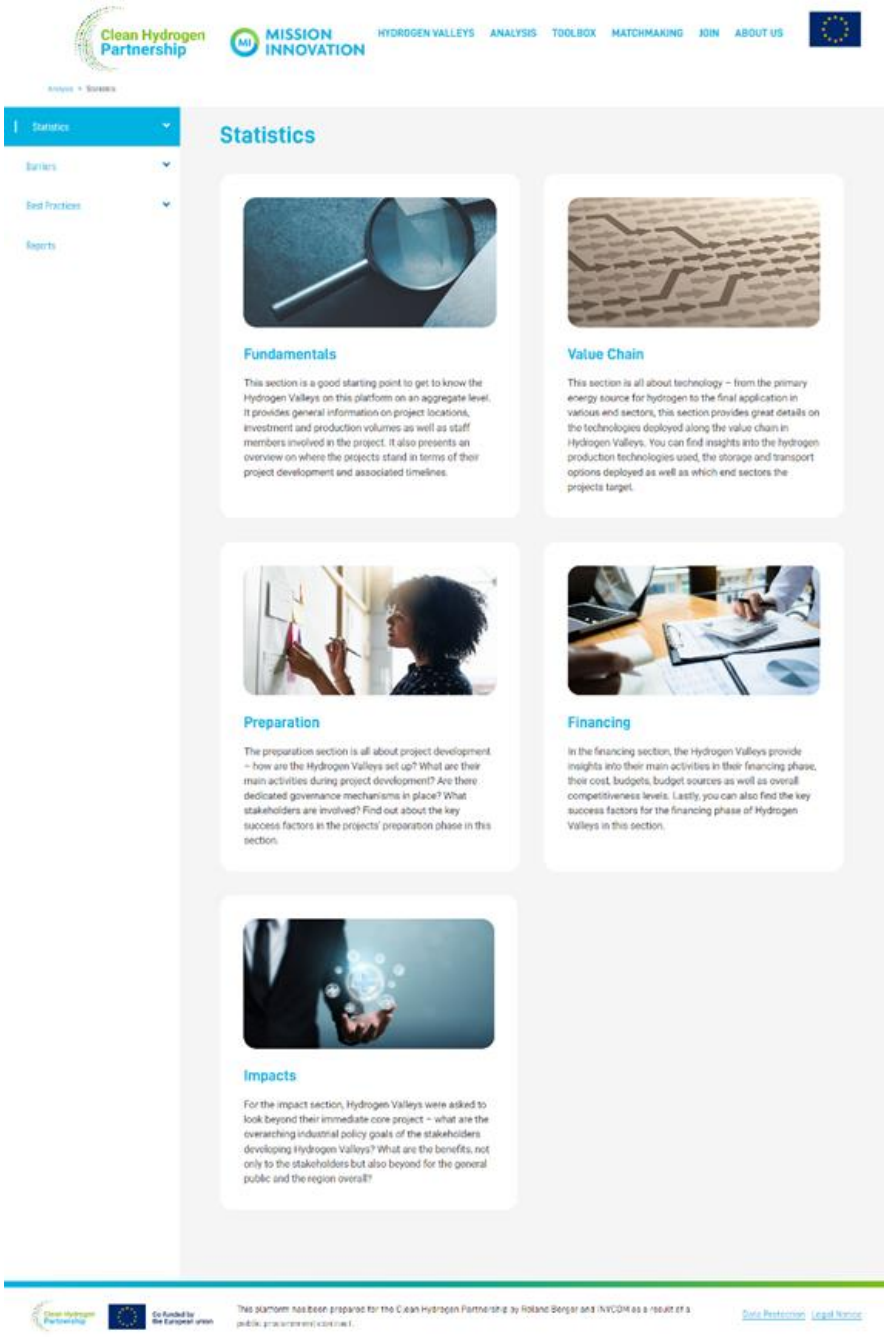


### 1.1.5 Statistics section

https://www.h2v.eu/analysis/statistics

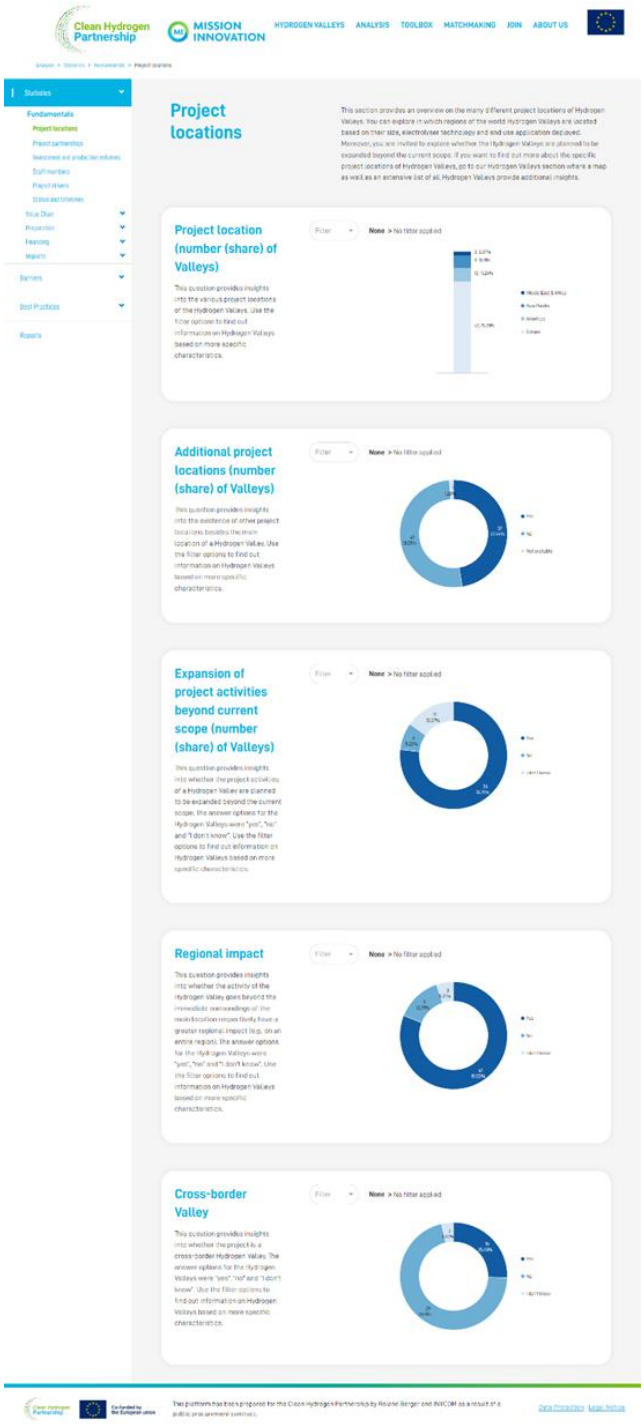
This is the core submenu presenting aggregated data on Hydrogen Valley initiatives gathered in the survey step. The information is structured around the five chapters included in the questionnaire: 'Fundamentals', 'Value Chain', 'Preparation', 'Financing' and 'Impacts'. These sub-sections can be accessed through the lateral menu on the left or through the landing page.It should be noted that all the information in this sub-section is presented in an aggregated form so that it is not possible for users to link specific information with a particular initiative.

**Figure 5: Landing page in 'Statistics' section.**



Each subsection has different sections where the charts are located. The charts, developed with d3.js[3] (europa servers compliant tool), present the aggregated information and can be of different types depending on the information they display. Furthermore, this data can be filtered (i.e., by continent, scale, technology,etc.) and the charts change dynamically. An example is shown below:

**Figure 6: Subsection in 'Statistics' presenting information in the form of charts.**




[3] https://d3js.org/

### 1.1.6 Barriers

https://www.h2v.eu/analysis/barriers/regulation

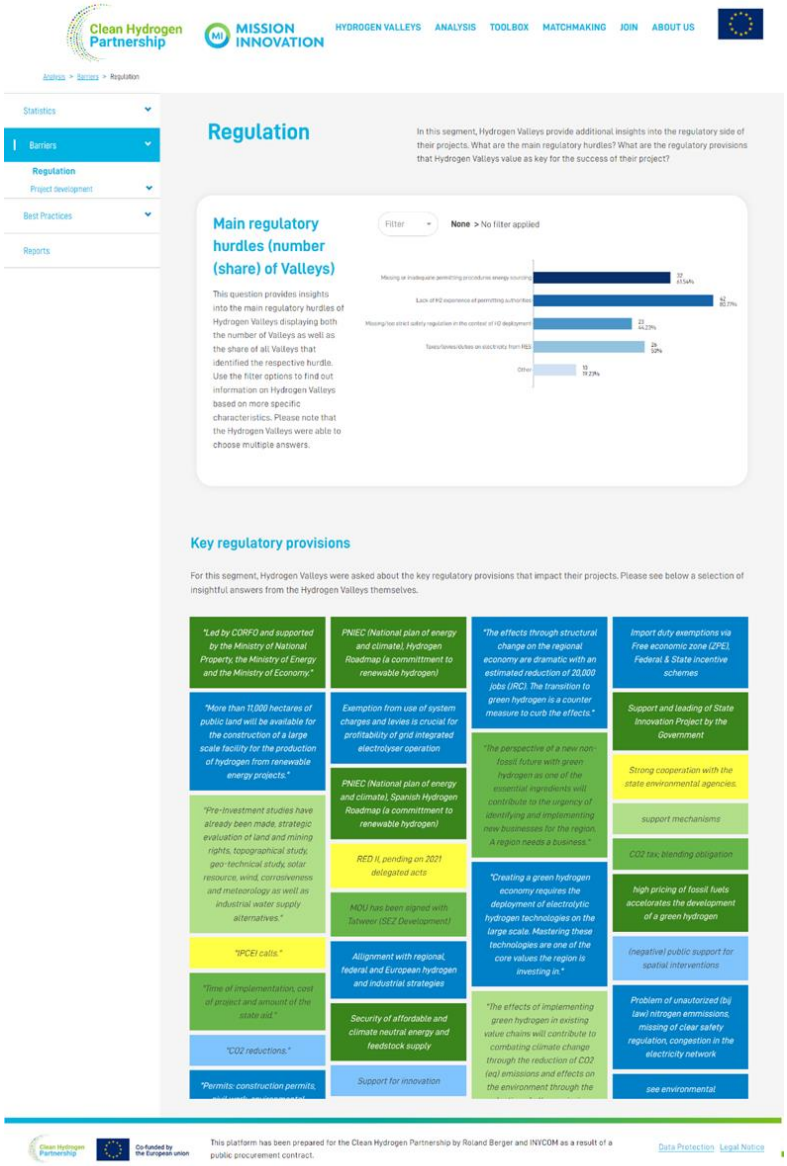
This section contains the summary of the barriers found by the Hydrogen Valleys initiatives and they are represented as key statistics.

Since barriers are described in a qualitative way by the Hydrogen Valleys, masonry charts have been designed for the case of this section to complement quantative information based diagrams.

The section has classified the existing barriers into three categories:

- Regulatory
- Project development > Financing
- Project development > Preparation

**Figure 7: Subsection in 'Barriers' part.**



### 1.1.7 Best practices

https://www.h2v.eu/analysis/best-practices

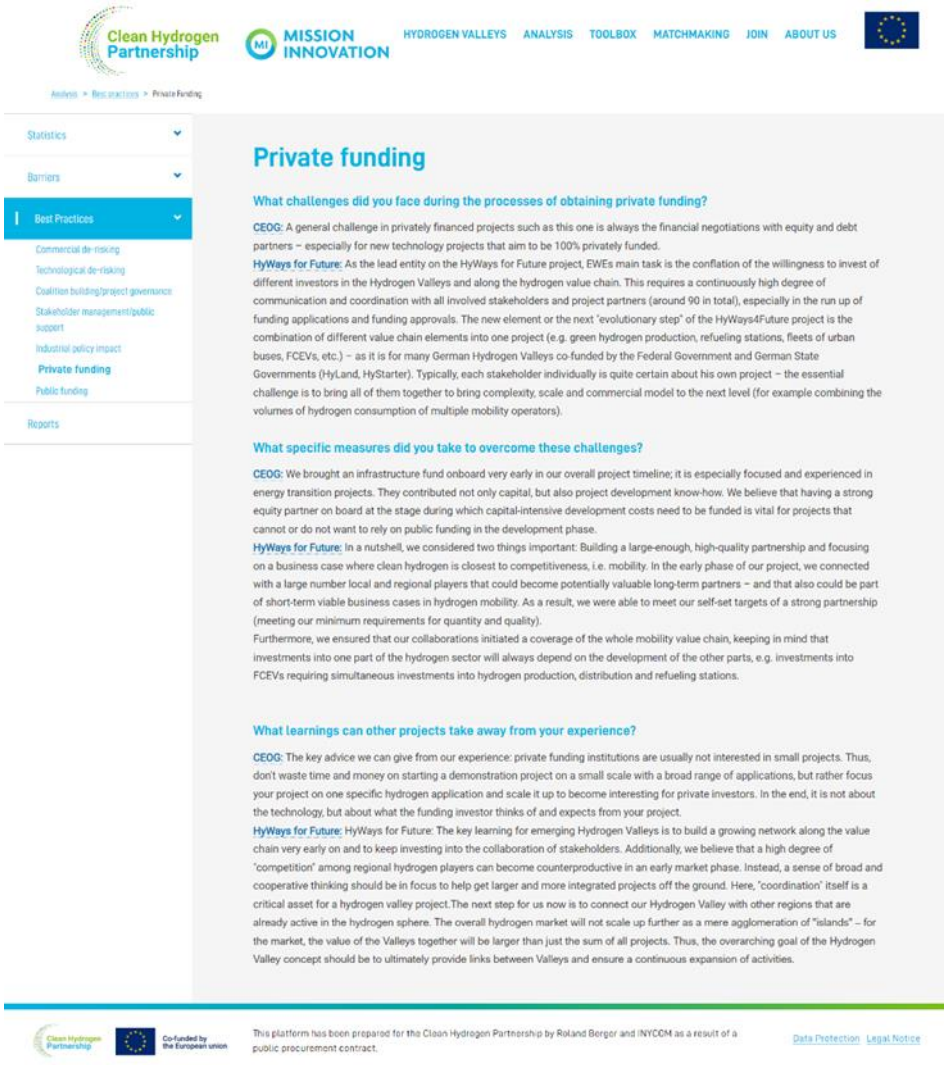
This section presents the results of a series of interviews conducted with the Hydrogen Valley representatives which have brought additional information to the portal on their lessons learnt.

**Figure 8: Best practices section.**


Each of the boxes in Figure 8 presents best practices in an interview format. By clicking on them, users will be redirected to the interviews where different valleys have shared their insights covering:

- Challenges of the project
- Measures to overcome those challenges
- Learnings of the project

**Figure 9: Sample Hydrogen Valley as presented in the 'Best practices' section.**

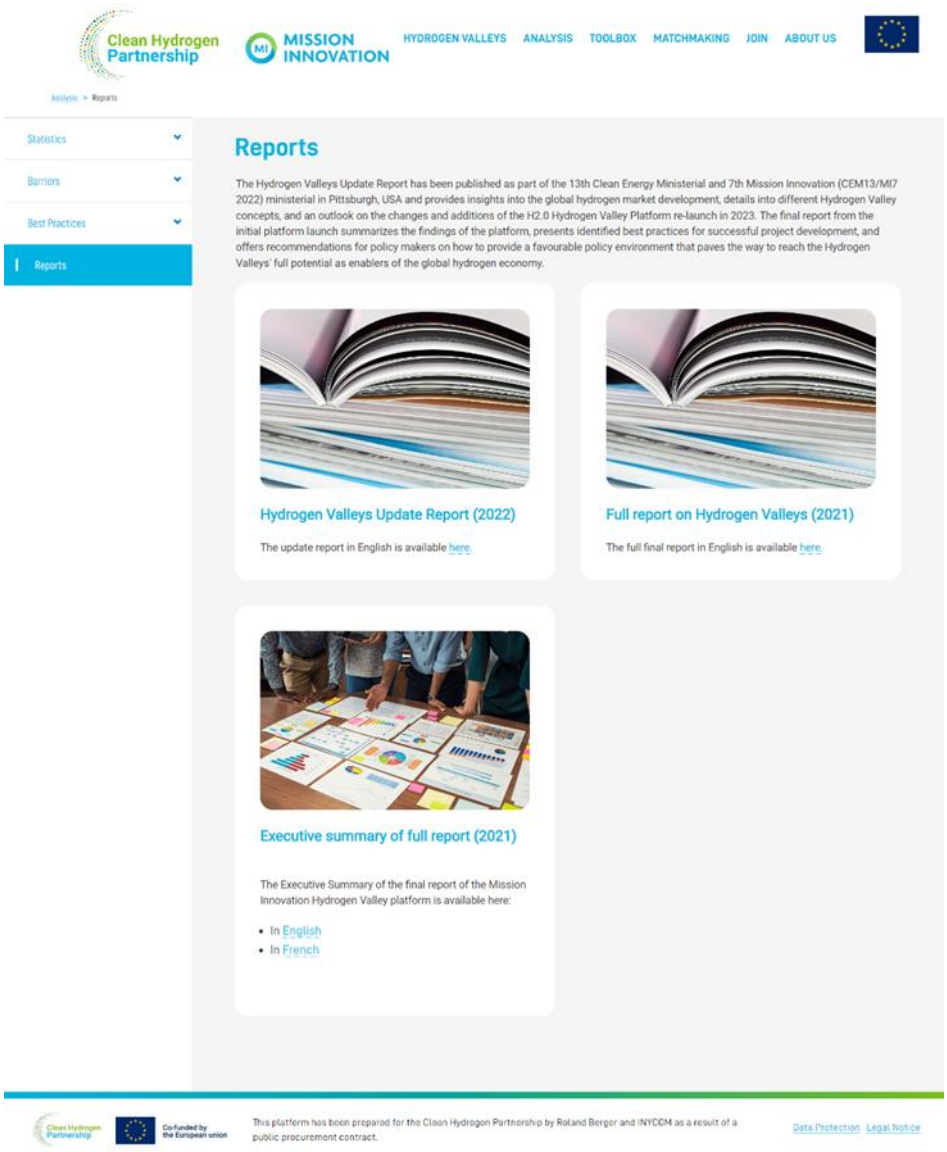



### 1.1.8 Reports

https://www.h2v.eu/analysis/reports

This section contains the downloadable Executive Summary and Final Report of the project generated at the end of the first contract of the MI H2V platform in 2021. Additionally, this section also included an update report shared in September 2022.

**Figure 10: 'Reports' section.**




### 1.1.9 Toolbox

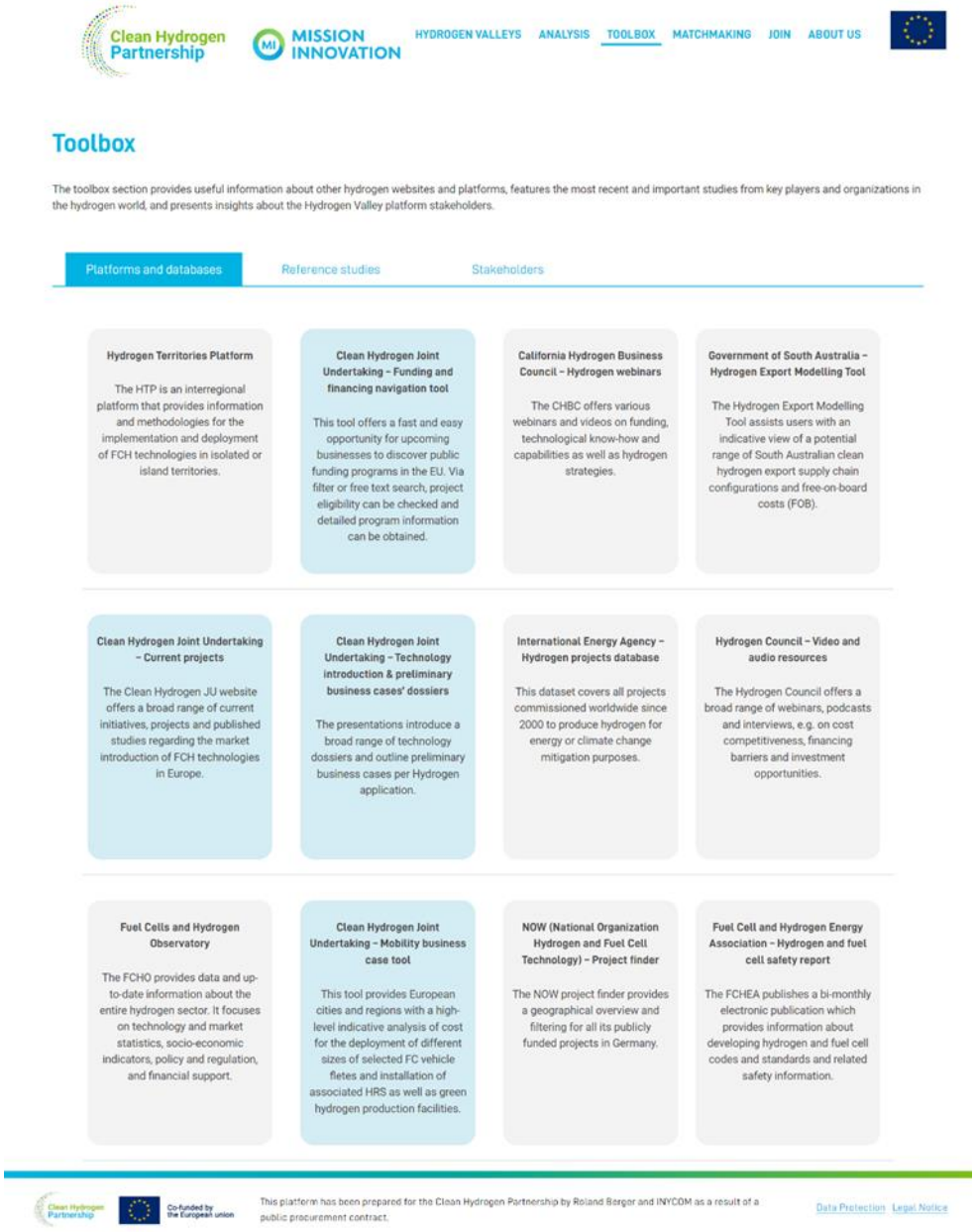
https://www.h2v.eu/toolbox

This menu offers useful links to useful sources of information and tools for other promoters to learn on how to consolidate Hydrogen Valley initiatives. It is divided in three categories:

- **Platforms and databases.** This includes other platforms and tools complementing the H2V 2.0 platform.
- **Reference studies.** This part contains literature related to fuel cells and hydrogen technologies in the context of Hydrogen Valleys (sorted by publication date, showing the newest first).
- **Stakeholders.** This category considers reference entities supporting Hydrogen Valleys deployment worldwide

In these three categories, there are mosaics with some boxes higlighted in a light blue color. This is because those links are all related to the Clean Hydrogen Joint Undertaking.

**Figure 11: 'Toolbox' section.**




### 1.1.10 Matchmaking

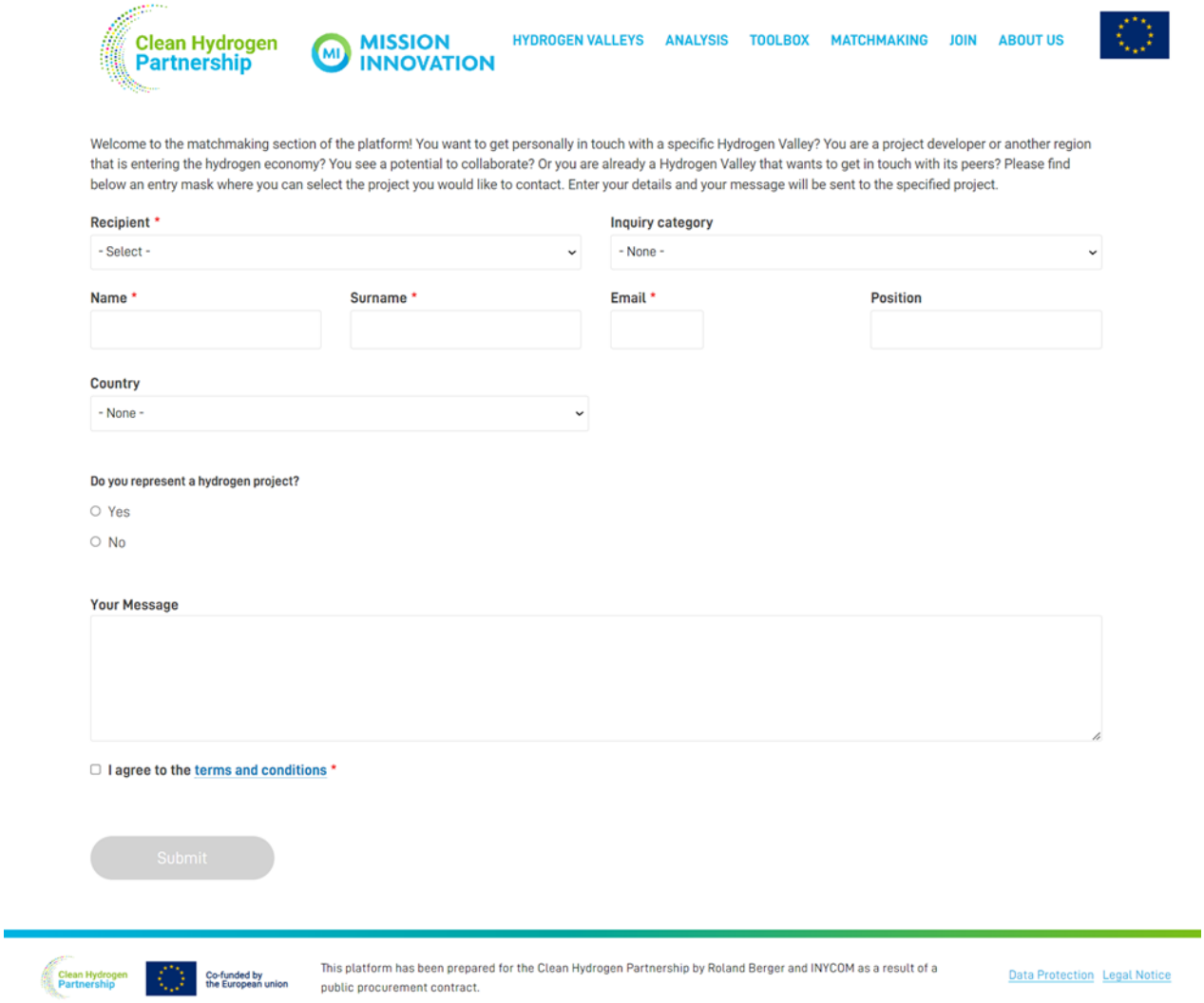
https://www.h2v.eu/matchmaking

This menu offers the user the possibility to contact an appointed representative of each Hydrogen Valley in an anonimized way (protecting the privacy of each initiative) in order to boost cooperation. In this contact form, there are the following information fields:

- **Recipient.** This field contains a list with the current names of the H2Valleys displayed on the portal.
- **Inquiry category.** This is a closed list with the type of inquiry ('General', 'Business' or 'Press inquiry').
- **Personnel data.** This part asks for the name, surname, email and job position of the user.
- **Country.** This standard selector will allow the users to select their country of origin.
- **Hydrogen Valley representative.** If the user is a Hydrogen Valley representative, the name of the project is asked as well as the project location and the project maturity.
- **Message.** This is a free text field for the user to explain its inquiry.

Once the contact form has been completed, by clicking on Submit, an email will be sent to the H2Valley representative chosen in the recipient field. This form includes a 'Honeypot' Drupal module to avoid bots submitting fake or abusive emails.

**Figure 12: 'Matchmaking' section and data fields.**



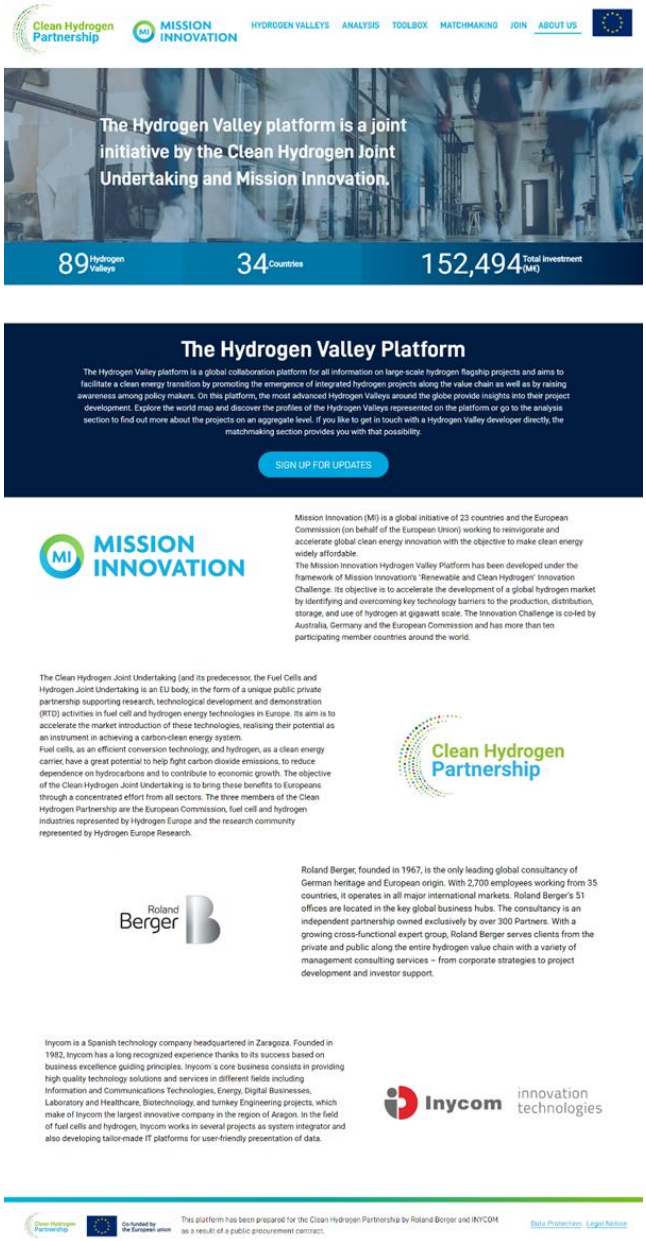
### 1.1.11 About Us

https://www.h2v.eu/about-us

This menu adds information on the portal dimension, purpose and promoters. It is designed with a top-down approach including:

- Engaging banner with a synthetized sentence to make users go down
- Three engaging KPIs on the dimension of the initiative
- Longer core description of the portal with CTA button to 'Sign up for updates' form
- Description and logo of each entity involved in the project

**Figure 13: 'About us' section and layout.**

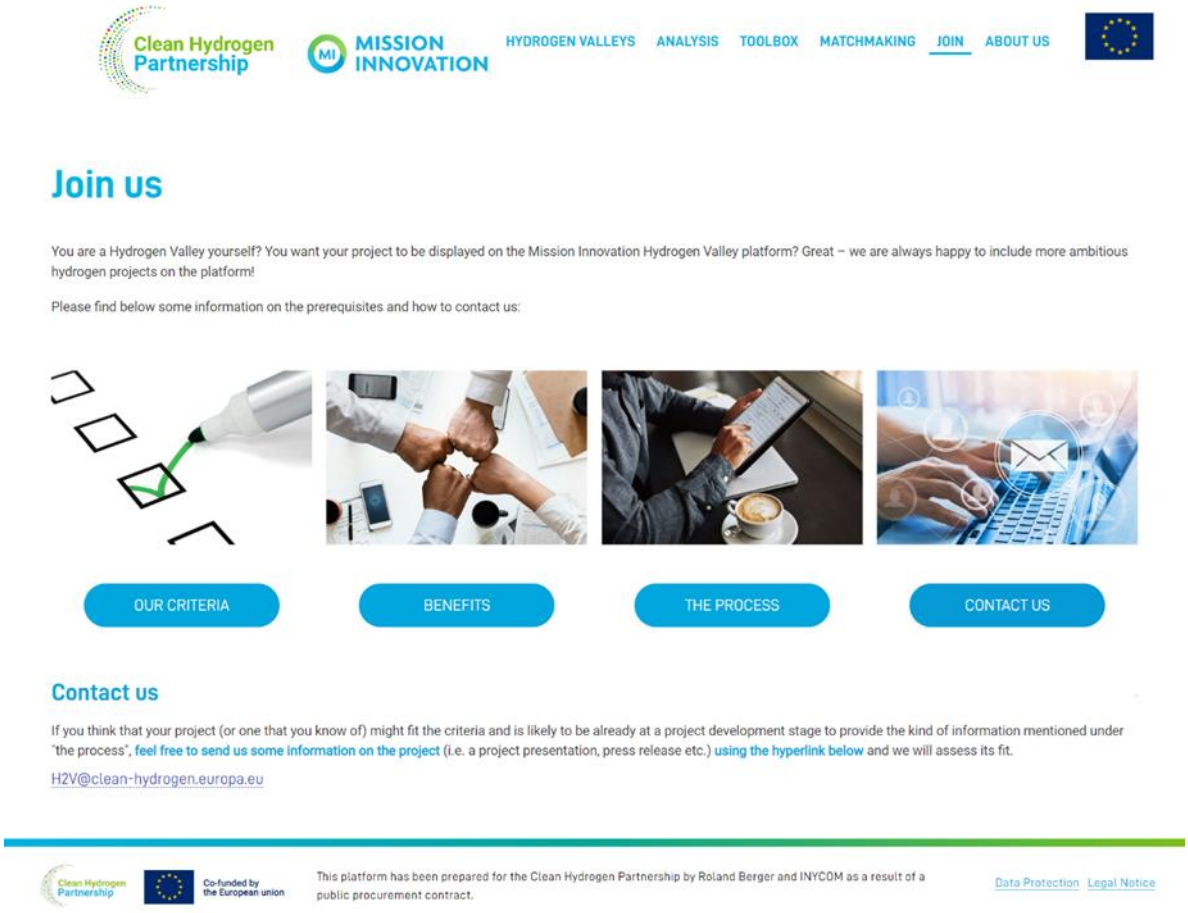


### 1.1.12 Join

https://www.h2v.eu/join-us

This section contains the steps for a Hydrogen Valley initiative to qualify for a project which can appear in the portal. It is structured in four blocks explaining the criteria used, the benefits from joining the initiative, the proccess to join the platform and the contact details linked to the portal. In the latter, the contact point is included as a hyperlink and, by clicking on the Clean Hydrogen JU email address (H2V@clean-hydrogen.europa.eumailto:fch-regions@fch.europa.eu), an email window opens with this email as recipient .

**Figure 14: 'Join us' section**




### 1.1.13 Sign up for updates

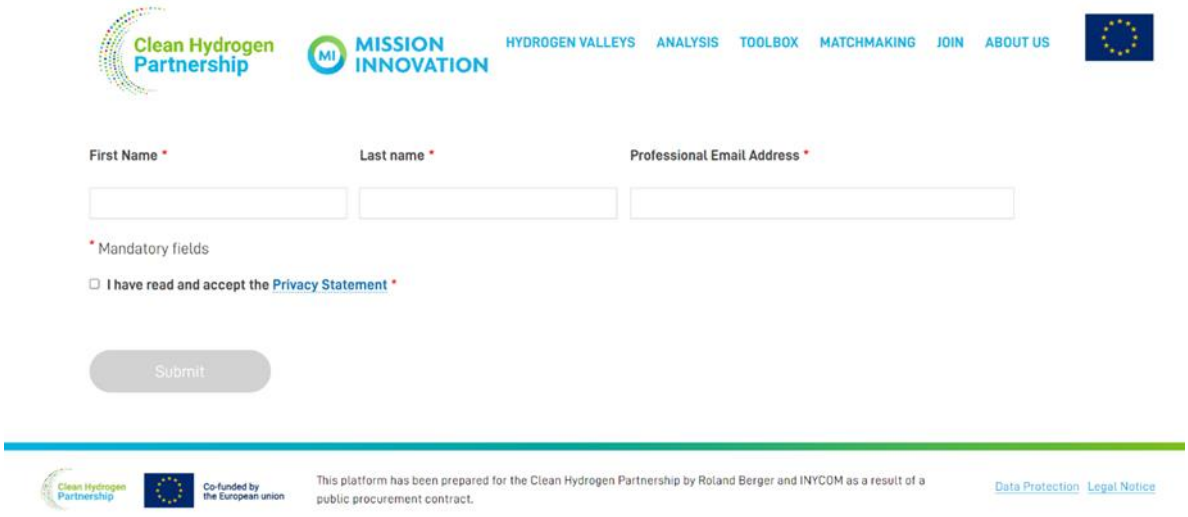
https://www.h2v.eu/sign_up_for_updates

This section can be accessed from two different CTA buttons located in the homepage and in the About us section.

The objective is to create a mass of users aware of project results who will stay tuned to the MI H2V 2.0 platform.

This section is structured as a contact form for users to sign up for updates on the portal. In this section, the name, surname and proffesional email address are requested.

**Figure 15: 'Sign up here for updates' submission form.**




As personal information is collected, this section contains the following privacy statement for this purpose which can be found in the annex of this report. Moreover, the personal data protection information relative to the whole H2V portal can also be found in the Annex I. The text reflects the latest version as approved by Clean Hydrogen JU.

## 1.2 Members area

The members' area is a new functionality that has been generated during this contract.

This intranet that is under development is based on Open Social. Open Social is a Software-as-a-Service (SaaS) online community solution and is available as a public open source distribution. As Open Social itself was developed in Drupal software, it was the most adequate solution to integrate into the platform.

The access to the platform is as follows: there will be 2 tabs, sign up and log in.

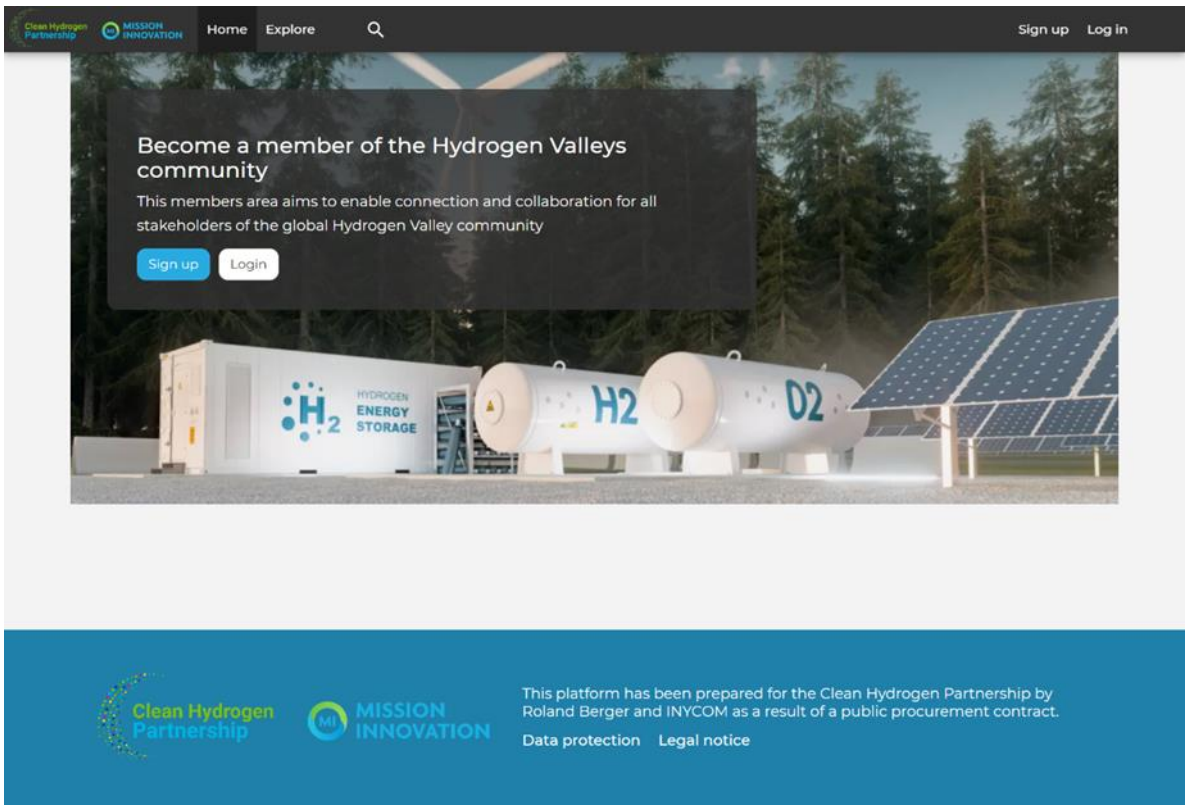
If it is the first time accessing, the user clicks on sign up and a registration form appears on the screen. The registration form has the following fields:

| Name field | Short description | Mandatory | Answer type |
|---|---|---|---|
| Row | Text | Text | |
| First Name | | Mandatory | Text box |
| Last Name | | Mandatory | Text box |
| Email | Professional email (e.g., no gmail, yahoo, …) | Mandatory | Text box |
| Phone | | Not Mandatory | Numerical + country code |
| Job Title | | Mandatory | Text box |
| Company | | Mandatory | Text box |
| Industry | | Mandatory | Drop down |
| City | | Mandatory | Text box |
| Country | | Mandatory | Text box |
| Direct connection to a Hydrogen Valley | | Not Mandatory | Yes or No (if yes, question below: ' Please name the valley' (text box)) |
| Password | | Mandatory | Password |
| Repeat password | | Mandatory | Password |

Once the user has completed the form, an email will be received saying that it is pending for validation. The validation of the users is done by Roland Berger during the contract and by Clean Hydrogen partnership or the new recipient organisation once the contract has ended. The validation process is done through the settings of the members area.

Once the user is validated and confirmed, another email will be received saying that the user can then access the platform. When it is validated, the user will enter the platform clicking on the Log in tab.

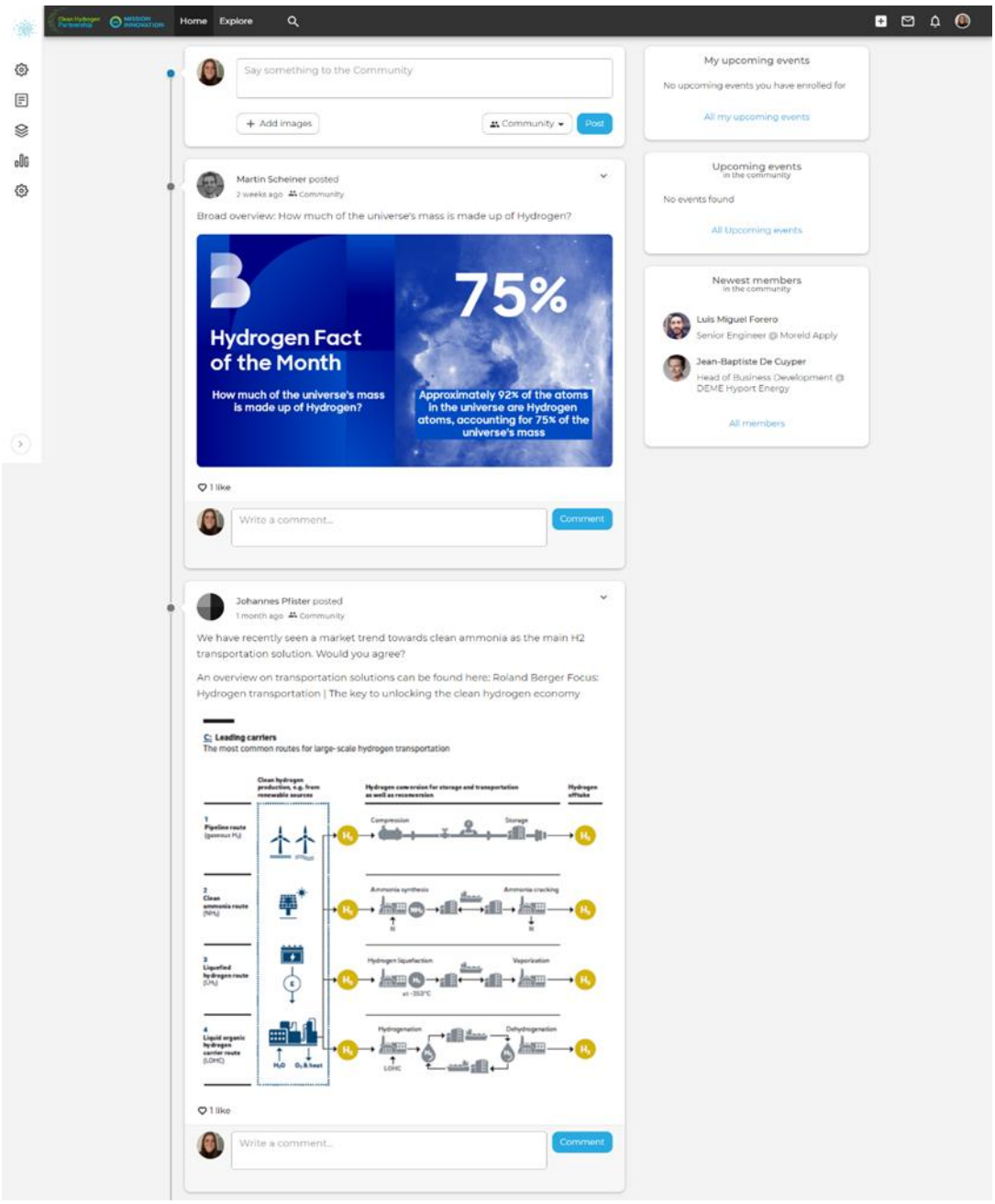
**Figure 16: Members area landing page**




Then, when the user logs in, the different functionalities are ready for use:

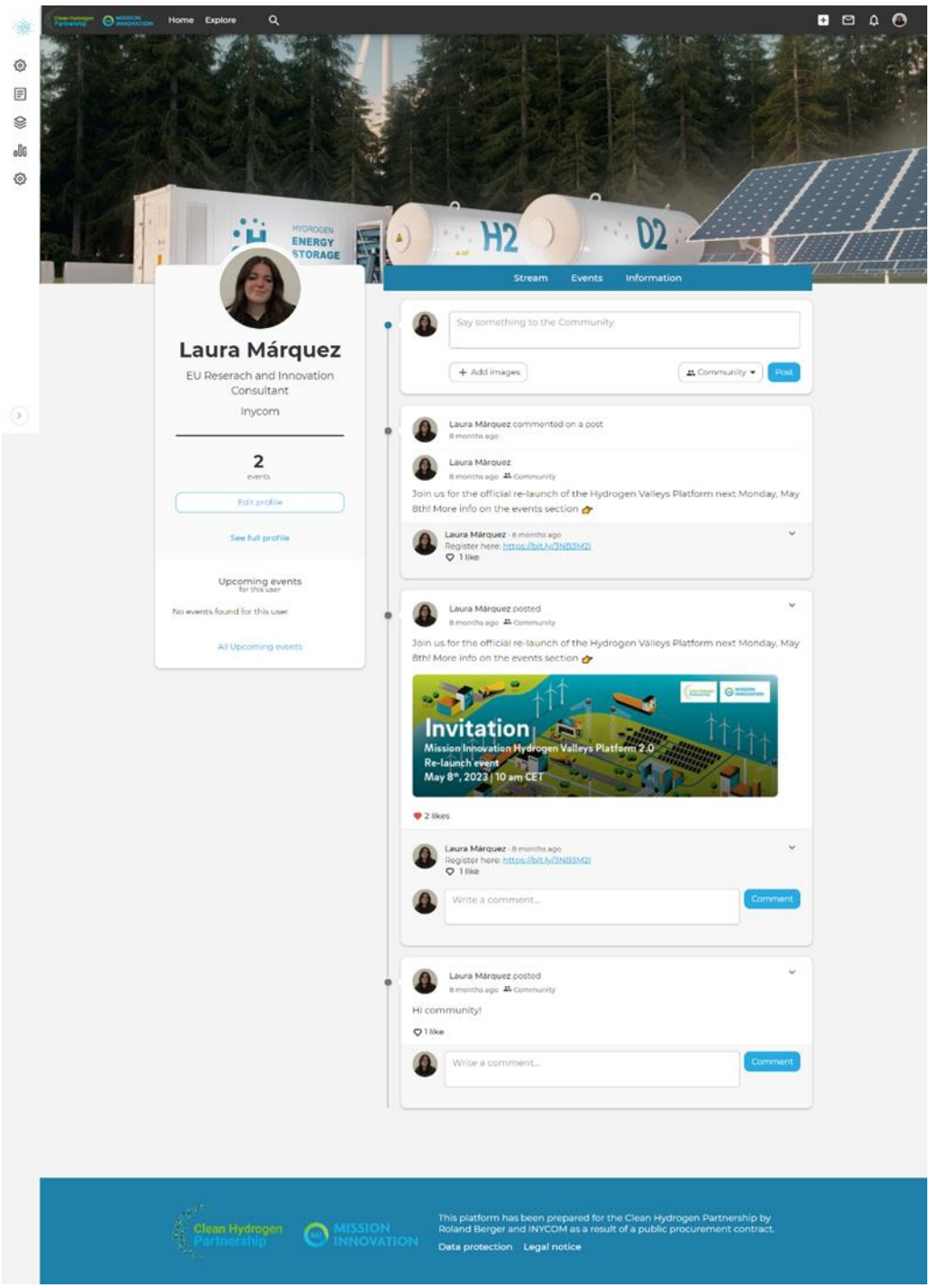
- **Main.** The homepage of this intranet offers a wall format like any other social network where it is possible to publish new posts, see the latest posts published by the community, like them and comment on them. In addition, upcoming events created within the members' area are visualised.

**Figure 17: Homepage of the member's area**




- **Member profile –** In the profiles, it is possible to display the full name and photo as well as a short description of the user. In addition, relevant information about the events they attend is displayed. In the profile it is possible to find all posts that the user has published chronologically as well as comments/posts that other members may have left on their profile. Finally, a tab appears with more information about the member as well as the contact details the user wants to share on the intranet (job position, country, company, etc)

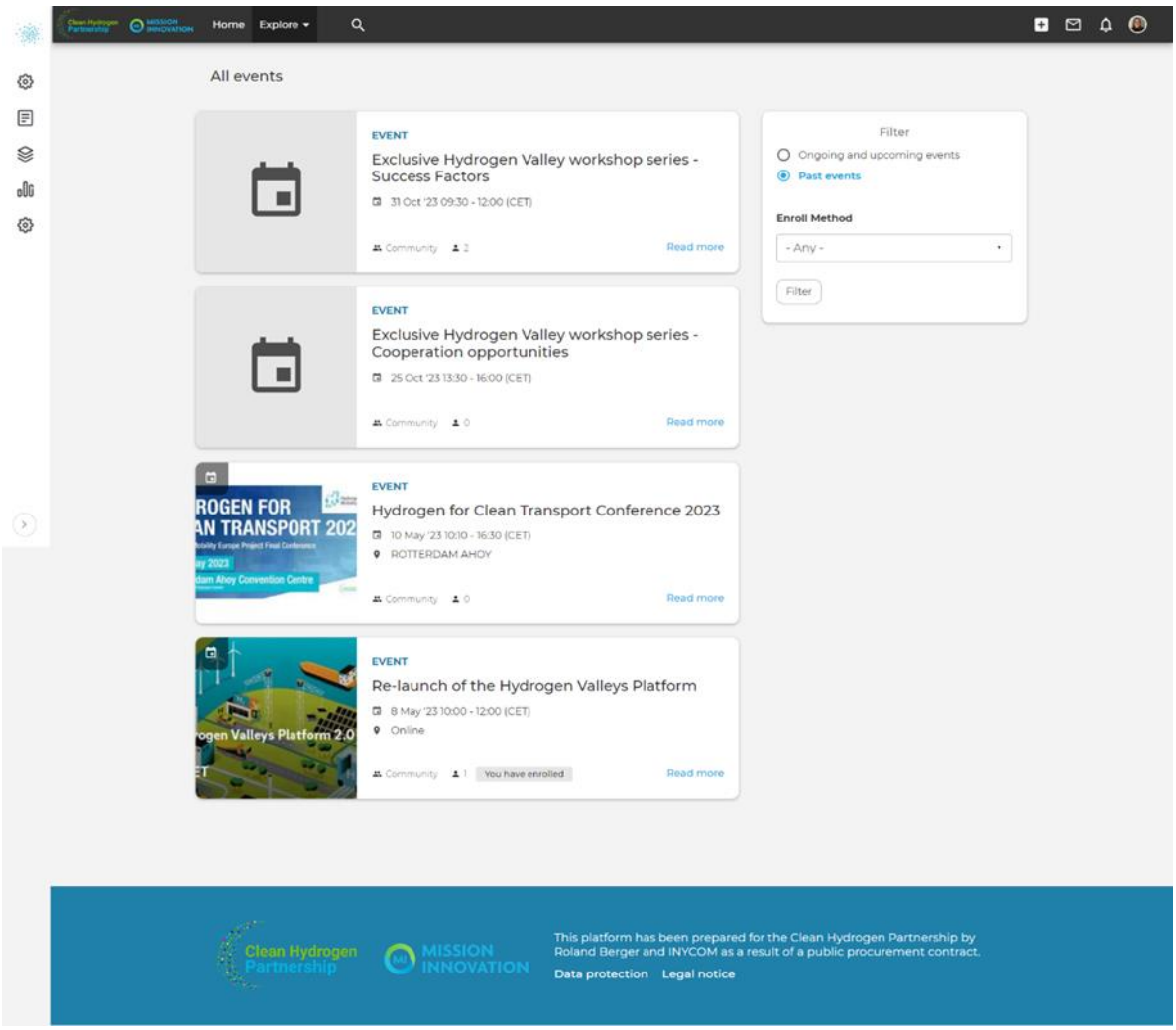
**Figure 18: Example of the member's profile**




- **Events –** Any member of the platform can create events. Each event page displays the key information about the event: date and time, location, description of the event as well as its organisers. It can also be seen the users that have already been enrolled to the event.

For the location of the event, it possible to include the address for the in-person meetings or to include a hyperlink to the virtual event.

**Figure 19: Events page on the member's area**




**Procedure for managing users:**

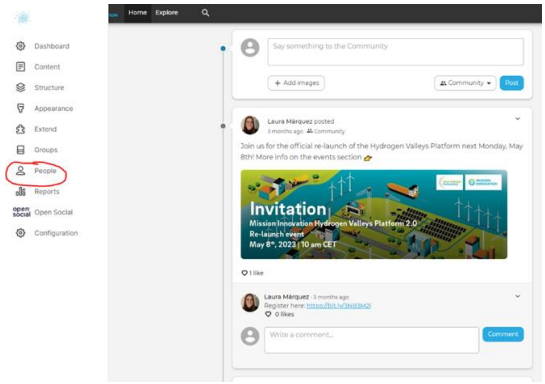
**Note:** In order to activate and block users, you will be signed in as admin. This presents a potential risk: apart from managing the users and roles, it is possible to modify the member's area platform content and modules but you DO NOT have to edit any modules/fuctionalities – this could take down the public portal. This is just out of precaution so there are no issues with this.

**Pre-filling the users:**

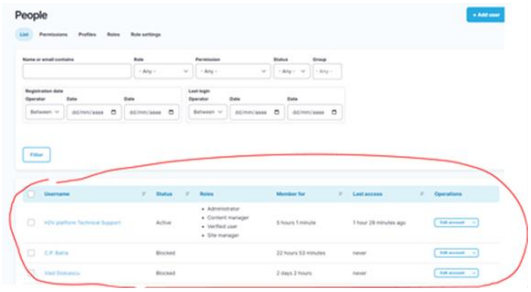
Completing the Sign up form in the member's area landing page

**Activation of users:**

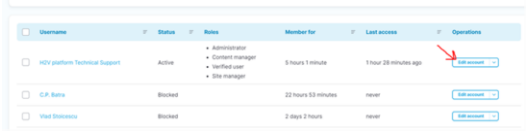
- Log in in the members area (https://membersarea.h2v.eu/).
- Go into the user management menu called 'People':



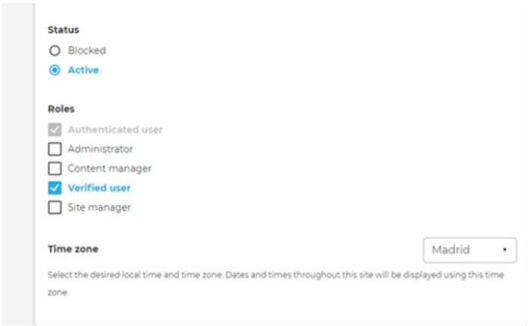

- The list of the signed-up users will appear on the menu:




- Click on the right side on ‘Edit account’




- Once you have clicked on ‘Edit account’, the user management page appears and scrolling down, you have the status and roles:




- For status: Click on ‘Active’ to activate the user.
- For roles: Valley profiles will only be configured as ‘Verified user’.

## 1.3 Analytics on the portal

In order to monitor the H2V 2.0 portal, behaviour of users, origin of visits, etc., the EC portal compliant tool Matomo has been implemented. This tool can be found in the following URL:

https://inycom.matomo.cloud/

### 1.3.1 Monitoring functions

The platform includes many monitoring services and high granularity to supervise the operation of the portal in terms of users behaviour. Below, some capabilities are listed:

- Continent, country and city of the visitors to the portal.
- Evolution of visits over a certain customizable period of time.
- Time that every user spents in each section of the portal.
- Number of visits in a certain period of time for each section in the portal.
- Number of downloads for PDFs or .csv files.
- Origin of visits, describing on whether those come from social media networks, direct search, etc.

**Figure 20: Main Matomo dashboard accessed when entering the platform.**

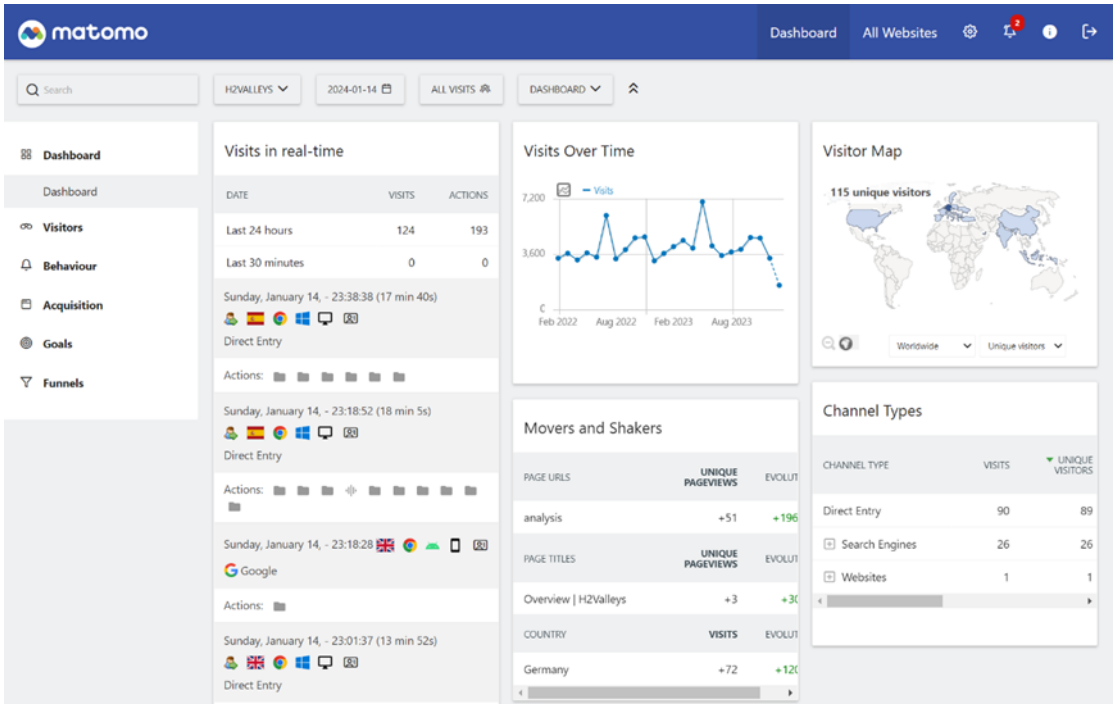
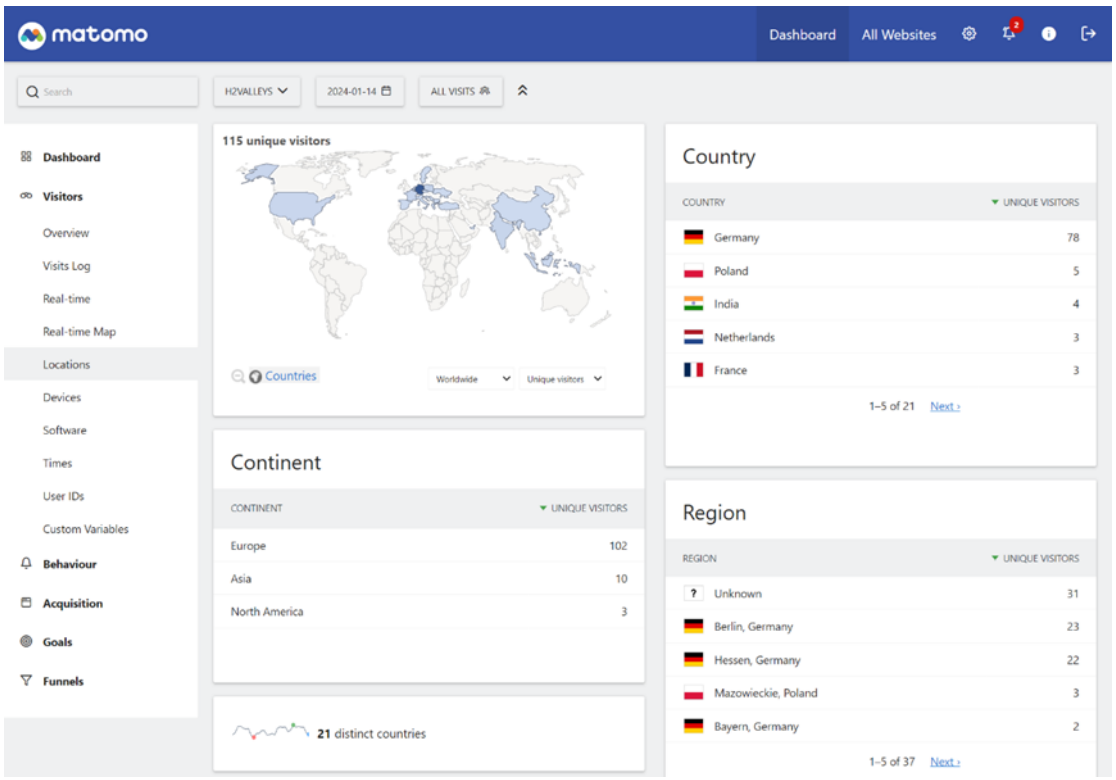


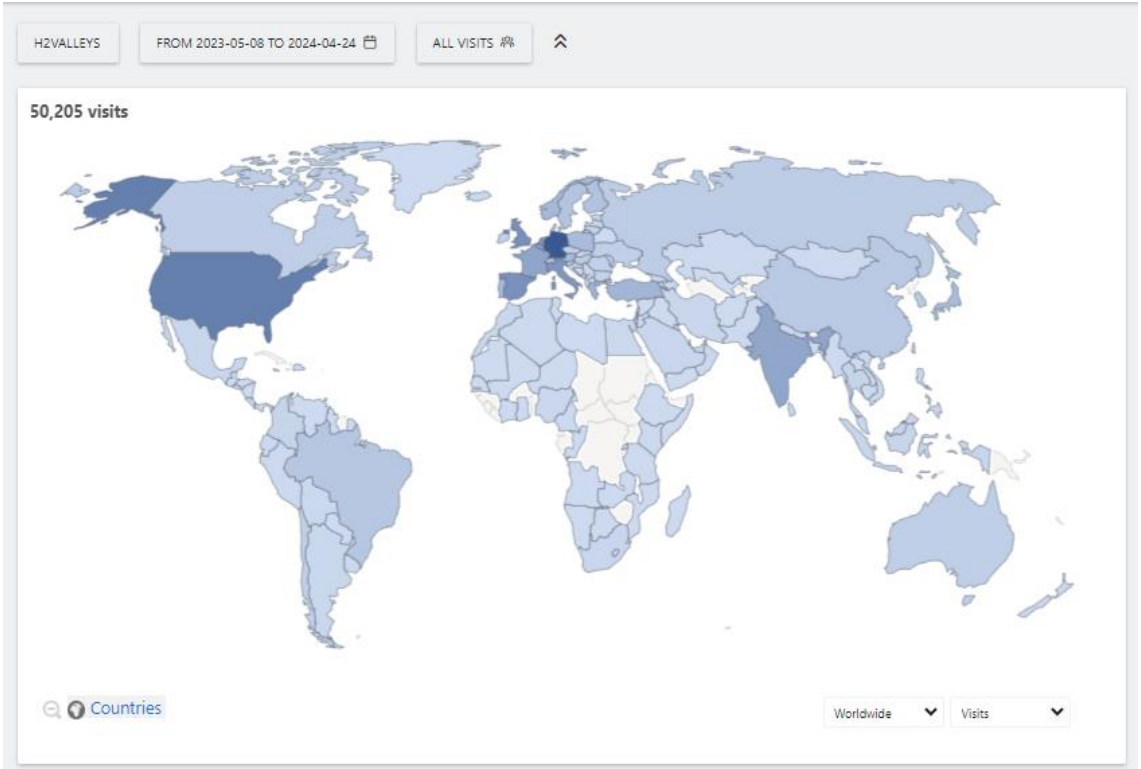
**Figure 21: Matomo dashboard including the origin of visitors.**




### 1.3.2 Platform analytics since relaunch

The platform includes many monitoring services and high granularity to supervise the operation of the portal in terms of users behaviour. In order to inform about the typical site usage by it visitors, we list the statistical highlights of the site traffic since its relaunch on May 8th 2023:

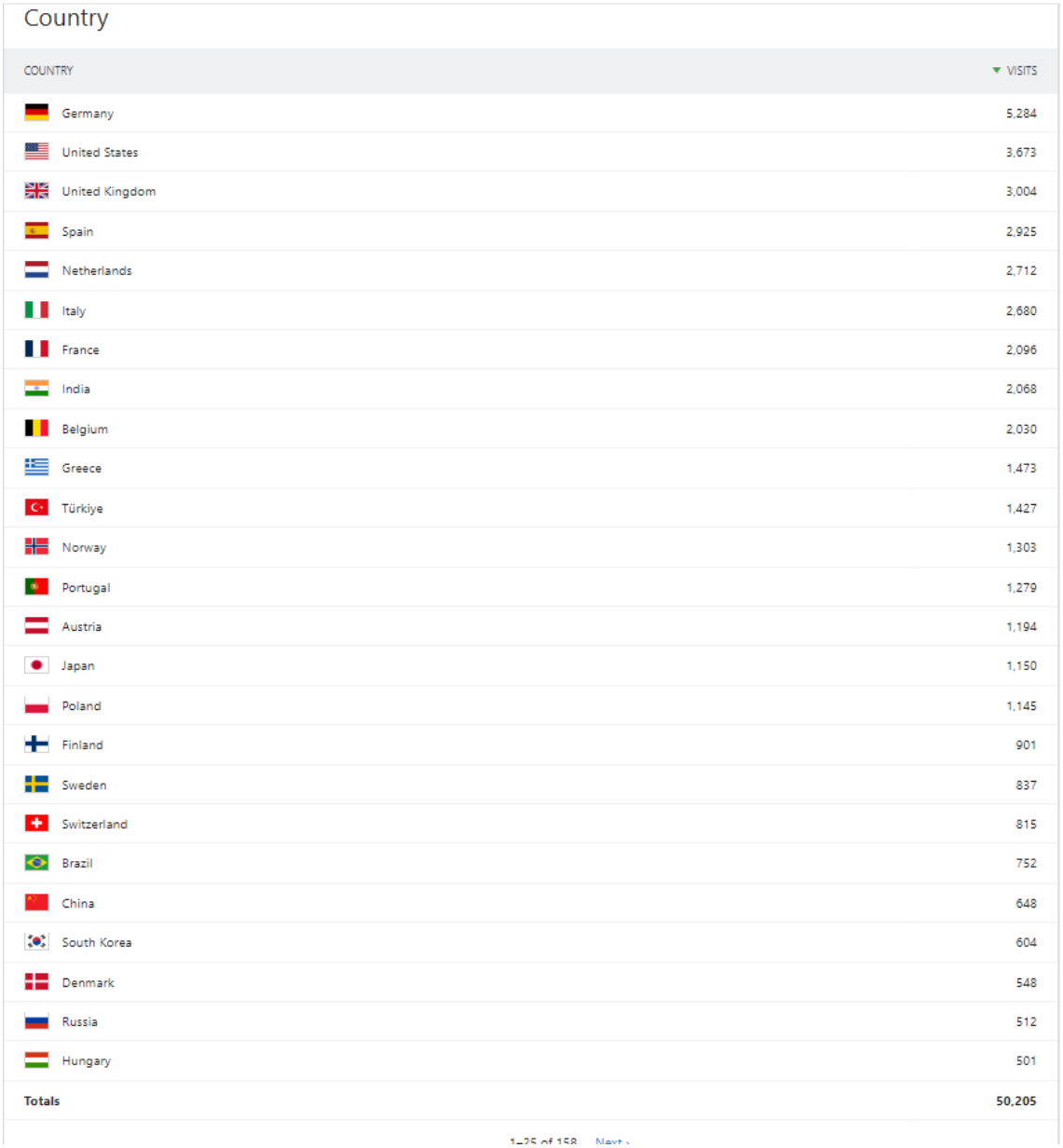
- Continent, country and city of precedence of the visitors to the portal.




## Continent

| CONTINENT | VISITS |
|---|---|
| Europe | 35,985 |
| Asia | 7,175 |
| North America | 4,236 |
| South America | 1,637 |
| Africa | 584 |
| Oceania | 456 |
| Central America | 110 |
| Unknown | 22 |

- The 25 main countries of origin for site visites were:



Country

| COUNTRY | VISITS |
|---|---|
| Germany | 5,284 |
| United States | 3,673 |
| United Kingdom | 3,004 |
| Spain | 2,925 |
| Netherlands | 2,712 |
| Italy | 2,680 |
| France | 2,096 |
| India | 2,068 |
| Belgium | 2,030 |
| Greece | 1,473 |
| Türkiye | 1,427 |
| Norway | 1,303 |
| Portugal | 1,279 |
| Austria | 1,194 |
| Japan | 1,150 |
| Poland | 1,145 |
| Finland | 901 |
| Sweden | 837 |
| Switzerland | 815 |
| Brazil | 752 |
| China | 648 |
| South Korea | 604 |
| Denmark | 548 |
| Russia | 512 |
| Hungary | 501 |
| **Totals** | **50,205** |

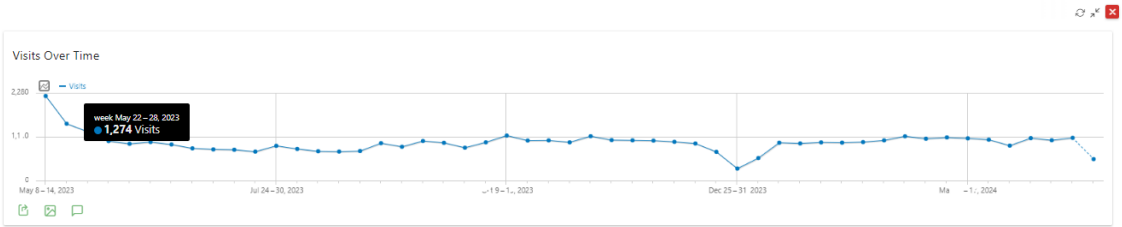
1–25 of 158 Next ›

- The main 25 cities were:

## City

| CITY | VISITS |
|---|---|
| Unknown | 4,711 |
| Brussels, Brussels Hoofdstedelijk Gewest, Belgium | 1,190 |
| Paris, Île-de-France, France | 1,008 |
| Madrid, Madrid, Comunidad de, Spain | 930 |
| Amsterdam, Noord-Holland, Netherlands | 815 |
| Vienna, Wien, Austria | 725 |
| Frankfurt am Main, Hessen, Germany | 691 |
| Berlin, Berlin, Germany | 681 |
| Milan, Lombardia, Italy | 607 |
| Athens, Attikí, Greece | 606 |
| Ashburn, Virginia, United States | 575 |
| London, England, United Kingdom | 569 |
| Helsinki, Uusimaa, Finland | 555 |
| Munich, Bayern, Germany | 527 |
| Istanbul, İstanbul, Türkiye | 523 |
| Tokyo, Tokyo, Japan | 502 |
| Warsaw, Mazowieckie, Poland | 469 |
| Rome, Lazio, Italy | 455 |
| Lisbon, Lisboa, Portugal | 422 |
| Budapest, Budapest, Hungary | 386 |
| Oslo, Oslo, Norway | 370 |
| Zaragoza, Aragón, Spain | 311 |
| Mumbai, Mahārāshtra, India | 270 |
| Kyiv, Kyiv, Ukraine | 260 |
| Delhi, Delhi, India | 236 |

- Evolution of visits since relaunch shows a stable traffic across the timeline:




- There is a differentiated use profile for the visitors, with on average 3 min spent on the platform:

## Visits Overview

**50,205** visits +4.3%

**3 min 1s** average visit duration +2.8%

**59%** visits have bounced (left the website after one page) -4.8%

**2.9** actions (page views, downloads, outlinks and internal site searches) per visit +3.6%

**238** max actions in one visit -95.7%

**142,148** pageviews, **109,511** unique pageviews +5.2%

**3** total searches on your website, **1** unique keywords -76.9%

**31** downloads, **27** unique downloads -42.6%

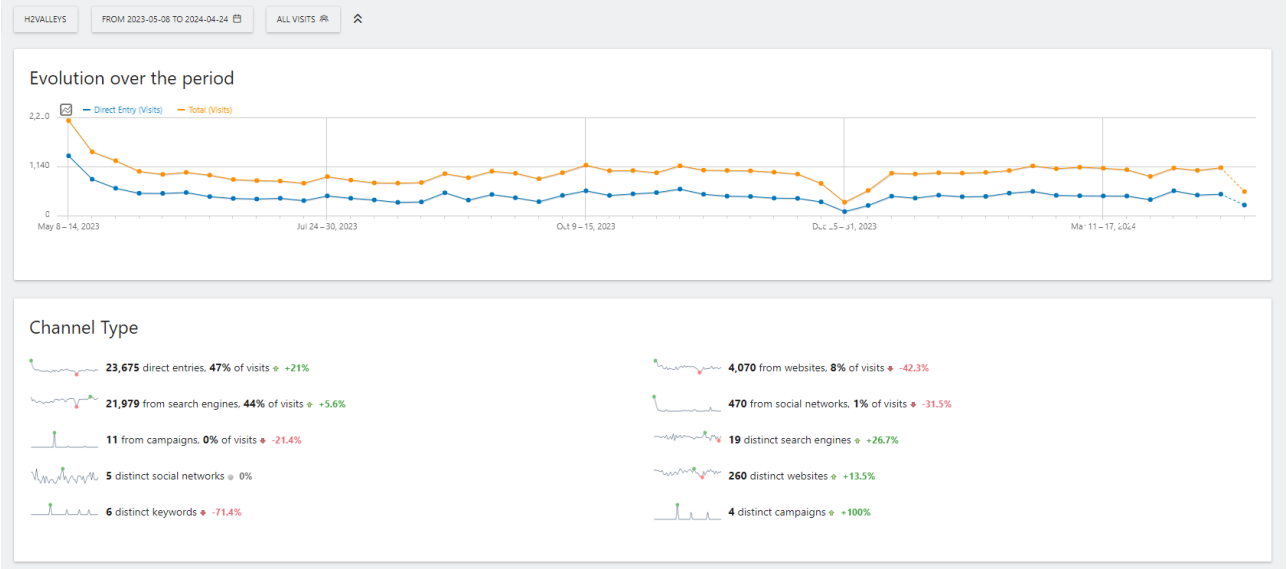
**4,209** outlinks, **3,783** unique outlinks +170.7%

- Number of visits since the relaunch suggests a strong interest in the analytical content that the sire gathers across all involved projects/valleys:

Pages

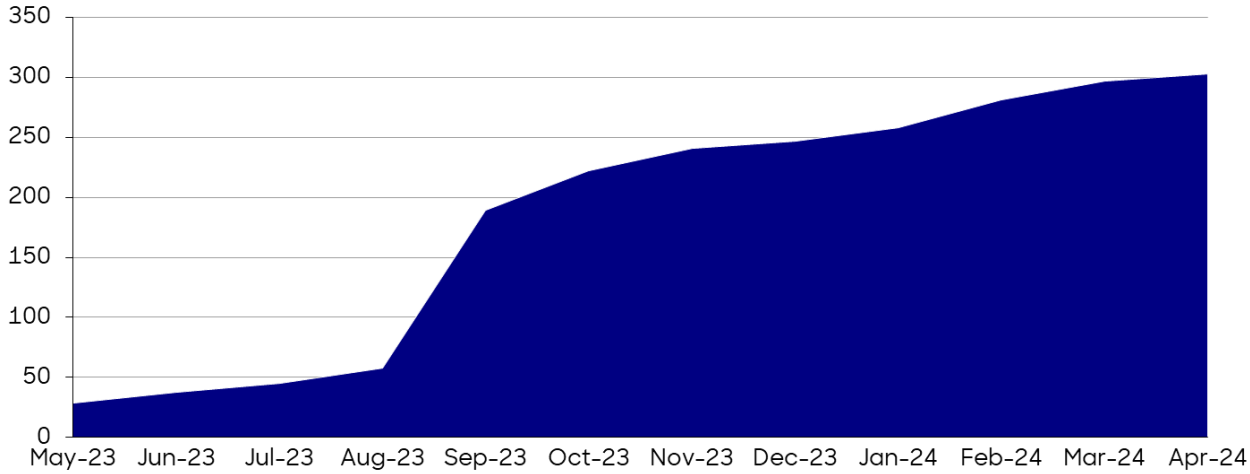
| PAGE URL | PAGEVIEWS | UNIQUE PAGEVIEWS | BOUNCE RATE | AVG. TIME ON PAGE | EXIT RATE | AVG. PAGE LOAD TIME |
|---|---|---|---|---|---|---|
| hydrogen-valleys | 29,517 | 25,069 | 64% | 00:01:34 | 43% | 3.37s |
| analysis | 26,783 | 22,487 | 78% | 00:00:53 | 53% | 3.94s |
| /hydrogen-valleys | 26,602 | 18,232 | 54% | 00:00:55 | 48% | 4.3s |
| /index | 25,544 | 18,524 | 47% | 00:00:49 | 56% | 5.96s |
| /analysis | 4,355 | 3,325 | 42% | 00:00:27 | 13% | 1.32s |
| /about-us | 3,066 | 2,474 | 60% | 00:01:09 | 49% | 2.18s |
| /toolbox | 3,055 | 2,429 | 67% | 00:01:04 | 38% | 2.23s |
| user | 2,655 | 1,186 | 32% | 00:02:57 | 51% | 2.02s |
| /matchmaking2 | 2,444 | 1,798 | 64% | 00:00:47 | 28% | 1.69s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=DE | 1,625 | 1,086 | 67% | 00:01:09 | 45% | 1.57s |
| /join-us | 1,564 | 1,238 | 72% | 00:00:56 | 43% | 1.89s |
| toolbox | 1,238 | 1,049 | 63% | 00:01:00 | 28% | 1.09s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=ES | 845 | 590 | 59% | 00:01:15 | 38% | 0.84s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=NL | 811 | 595 | 50% | 00:01:12 | 34% | 3.07s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=All | 789 | 606 | 68% | 00:01:29 | 51% | 3.24s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=PT | 678 | 482 | 73% | 00:00:59 | 47% | 3.3s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=IT | 646 | 514 | 55% | 00:00:52 | 34% | 1.53s |
| /sign_up_for_updates | 599 | 412 | 40% | 00:00:37 | 13% | 1.24s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=FR | 487 | 375 | 65% | 00:00:46 | 26% | 1.06s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=GR | 474 | 366 | 61% | 00:00:56 | 31% | 1.41s |
| /hydrogen-valleys?populate=&field_ch_1_q_10_value=NO | 448 | 335 | 63% | 00:01:07 | 39% | |

- Origin of visits were mainly direct entries because of the brand recognizable url and direct searches. No strong interlinkage with social media or other websites.




### 1.3.3 Member area analytics

The members area was launched in November 2023 as a new form of collaboration tool (see chapter 1.2). As a subdomain of the h2v.eu url, it is also included in the overall statistics provided by the matomo functions. As traffic on this subdomain is limited, the respective analysis doesn't show in the top results of subdomains for the overall portal. However, the main dynamic on the members area is summarized below:




The number registered users on the members area experienced a significant increase around the launch in autumn 2023. After the initial surge, the growth rate stabilized, with an average of 10-20 new users joining every month. Currently, at the end of April 2024, there are 303 users registered on the members area.

As mentioned in chapter 1.2, the main function is the public board for all registered members to see. So far the Clean Hydrogen Partnership and the Roland Berger project team have posted on nearly 20 occaisons. Reactions to posts have been limited with only few comments by other registered members.

## 1.4 Services Delivery Plan

To ensure a correct service transfer in relation to the operation and maintenance of the MI H2V 2.0 Platform (www.h2v.eu) to the Clean Hydrogen JU or a new service provider, a specific Services Delivery Plan (SDP) document has been developed by Inycom and Roland Berger.

The SDP document includes the methodology aspects, the plan for activities and deliverables (mainly documentation and manuals) as well as the responsibilities and duties of the different actors involved in each phase or stage.

The goal is to reach an adequate transition with the minimal impact on the provision of the services relative to the operation and maintenance of the MI H2V 2.0 Platform and relative activities.

The following sections in this document show the detailed aspects of the plan.

### 1.4.1 Methodology

As it was indicated in the Inception Report, the focus of the SDP is on the complete transfer of knowledge to the new contractor or to the Clean Hydrogen JU. This ensures that the provision of the service won't be interrupted after the execution of the proposed plan. Specifically, the objectives of the plan are:

- To ensure the provision of the transferred services guaranteeing their continuity
- To transfer the knowledge and assist the new provider
- To assign the duties and responsibilities linked to the service to the new provider

The delivery methodology developed and used by Inycom and Roland Berger described in the following subsections manages the whole process, scheduling actions and defining the scope and objectives for the transition of the service while leading this operation so that the new provider gains the required knowledge and control to carry out the tasks.

The Services Delivery Plan includes:

- Definition of teams and plan for the delivery of the service
- Procedures to contact and interact with the teams involved in the delivery
- Reference to supporting documents and procedures, etc.
- Measures to guarantee the correct operation and the continuity in the provision of the service under the same key performance indicators and quality requirements
- Training session for the new service provider, with session on structure of frontend sections, structure and management of backend sections and communications.
- Definition of duties and responsibilities linked to the transfer to ensure a correct delivery, including the monitoring and assistance to the new provider.

### 1.4.2 Phases of the delivery of the services

The delivery of the services is broken down into three phases as described below:

- **Phase 1 - Plan and preparation:** In this period, Inycom and Roland Berger will develop the Services Delivery Plan Document, which details the activities which will take place in phase 2 (execution) and 3 (approval).
- **Phase 2 - Execution of the delivery process:** In this phase, divided in two stages, the initial knowledge transfer will take place, followed by a progressive handover of the service to the new service provider whilst ensuring the required quality standards.
- **Phase 3 - Approval of the delivery process:** In this phase, the contract for the provision of the service will be considered as complete and the new responsible organisation will start to provide the services.

#### 1.4.2.1 Phase 1 - Plan and preparation

In this phase, the overall Services Delivery Plan has been designed, consolidating the Services Delivery Plan Document. This document includes a detailed schedule for the delivery process indicating the roles and corresponding responsibilities. In addition, the organizational and logistics activities have been considered.

**A. Identification of suitable resources for handover in both Services Delivery Team and recipient organization**

To ensure a smooth transition, the following resources have been identified from each side:

From Inycom (INY) & Roland Berger (RB):

- Lead transfer manager (INY):
- Drupal technical expert (INY):
- Project Manager (RB):

From from Clean Hydrogen Partnership (JU):

- Knowledge Management Office (JU):
- Team Coordinator (JU):

**B. Interactions with the recipient organisation team**

The Service Delivery Plan will take place over 3 consecutive weeks with the following interactions:

- First week of the delivery: Inycom will start the communication with the teams involved in the delivery. The procedure will be as follows: Inycom will provide all the documentation prepared by Inycom & Roland Berger at the end of the contract (and previously agreed with Clean Hydrogen JU) to the new service provider. The recipient team will review the files during the first week. Inycom will then schedule a meeting with both teams for the second week of the delivery.
- Second week of the delivery: A dedicated session (1 hour) will be hold between Inycom, RB, Clean Hydrogen and the new service provider (if any) to explain operation of all the menus, back-end structure and its management as well as communications aspects. In this session, the potential questions and doubts that the recipient organisation may have (after reviewing the documentation) will be solved by Inycom and RB team.
- Third week of delivery: Validation phase. This week is meant for the recipient entity to work with the environments and make sure that everything works correctly. Inycom will answer and solve any questions that the recipient organisation team may have regarding the platform – not the servers and environment since it is Real Dolmen domain.

**C. Methods to transfer the Knowledge Management System for the service**

**Procedures**

In relation to the MI H2V 2.0 Platform, the recipient organisation will need total control.

The actual scenario is the following: Inycom is not in possession of the H2V 2.0 platform in their own servers but is instead hosted on the servers of an external company (Real Dolmen) that works with Clean Hydrogen, so no server transfer or code migration will be necessary.

For this, a specific meeting with Real Dolmen might be required. The recipient organisation should also own the necessary documentation from Real Dolmen for them to be able to perform all the IT-related tasks on platform.sh without any issues.

Inycom will support this transfer, but as Inycom is not the server owner, Inycom may not be able to help with all the doubts and questions that may arise.

**Documentation**

The SDT will issue the following documentation at the beginning of week 1 of the delivery:

| Document | Description | Format |
|---|---|---|
| Final Technical report | Document which details the different menus, activities & actions performed within the contract (IT tasks and content-related activities (contact with valleys, emailing, etc)), communications & workshops. | PDF |
| Handover document (Confidential) | Document which explains the structure of the platform and how to use the backend, including all the credentials of the platform | PDF |
| Service Delivery Plan (SDP) document | Document detailing how the H2V 2.0 platform will be transferred to the Clean Hydrogen JU or new service provider in terms of phases and timing | PDF |
| Hydrogen Valleys contact list (Confidential - GDPR) | Contact list of Hydrogen Valleys that were selected for the platform, including survey usernames | XLSX |
| Hydrogen Valleys project database (Confidential - GDPR) | Main database is available in the backend of the platform, however, additional excel will be provided (also downloadable at any time via the platform's backend) | XLSX |
| Onboarding document | Onboarding document for new Hydrogen Valleys that are about to fill out the survey. The document explains the platform, criteria for joining, data handling, key topics of the survey and guidelines. | PDF |
| Draft Email for survey access | Draft to communicate how to access the survey to a new Hydrogen Valley | DOCX |
| "Sign-up results" contact list (Confidential - GDPR) | Available for download in the platform backend | XLSX |

### D. Measures to guarantee the correct operation and the continuity in the provision of the service

To support the correct operation and continuity under the same quality standards reached during the execution of the contract, Inycom and Roland Berger have been following a preventive and corrective maintenance procedure.

In this high level perspective, the preventive maintenance procedure includes:

- Drupal security updates (quarterly)
- Module updates (OpenStreetMaps and d3.js)
- Weekly reviews and check-ups of all the menus

### E. Training program for the new service provider

The training session will consist in a unique dedicated session listed in the previous section of this document. The details of what will be covered at the meeting is set out below:

- Training session
- Led by: Inycom (with RB support)
- Duration: 60 minutes

In this session, Inycom will firstly explain on a high level how the portal is developed for basic menus, which includes Home, About Us, Toolbox, Matchmaking and Join.

Additionally, the analysis section will be explained as it has been developed with the d3.js tool. The methodology to add new charts to the portal will be explained. In addition to this, the Hydrogen Valleys menu will be explained focusing on the OpenStreetMaps module for the existing maps in the portal, as well as the leaflet.js library for maps.

Then, the backend menu will be explained. All the functionalities that this menu implies will be detailed, as well as how the questionnaire and the user access were carried out. The different access levels to the portal will be detailed in this session.

Lastly, Roland Berger will describe the communication strategy followed to raise awareness and reach the target audiences will be explained in first place. They will also explain the validation process for new users to join the members area.

The team will address any questions that the recipient organisation may have after reading the documentation.

Although the contents in this sessions is recommended by the SDT for a successful transfer of the portal, the recipient party is entitled to propose other contents in the sessions which may be relevant to assume the transition of the portal.

Besides, in addition to these sessions, the SDT remains at the entire disposal to answer queries or doubts raised by the recipient party via email or, if needed, dedicated sessions considering the availability of IT specialists in both teams.

#### 1.4.2.2 Phase 2 - Execution (weeks 1 and 2)

The Services Delivery Plan will be executed which includes the training program for the new service provider explained above in week 2.

#### 1.4.2.3 Phase 3 - Approval (week 3)

To ensure a smooth transition, the SDT has planned an additional week to supervise how the platform is managed by the recipient party. During that week, the recipient party will assume the operation of the platform. The SDT will assist the recipient party solving doubts which may arise in the process, which will be done via regular email or, if needed, with dedicated videoconferences.

# 2. Back-end portal

## 2.1 User manual and functionalities of the back-end menu

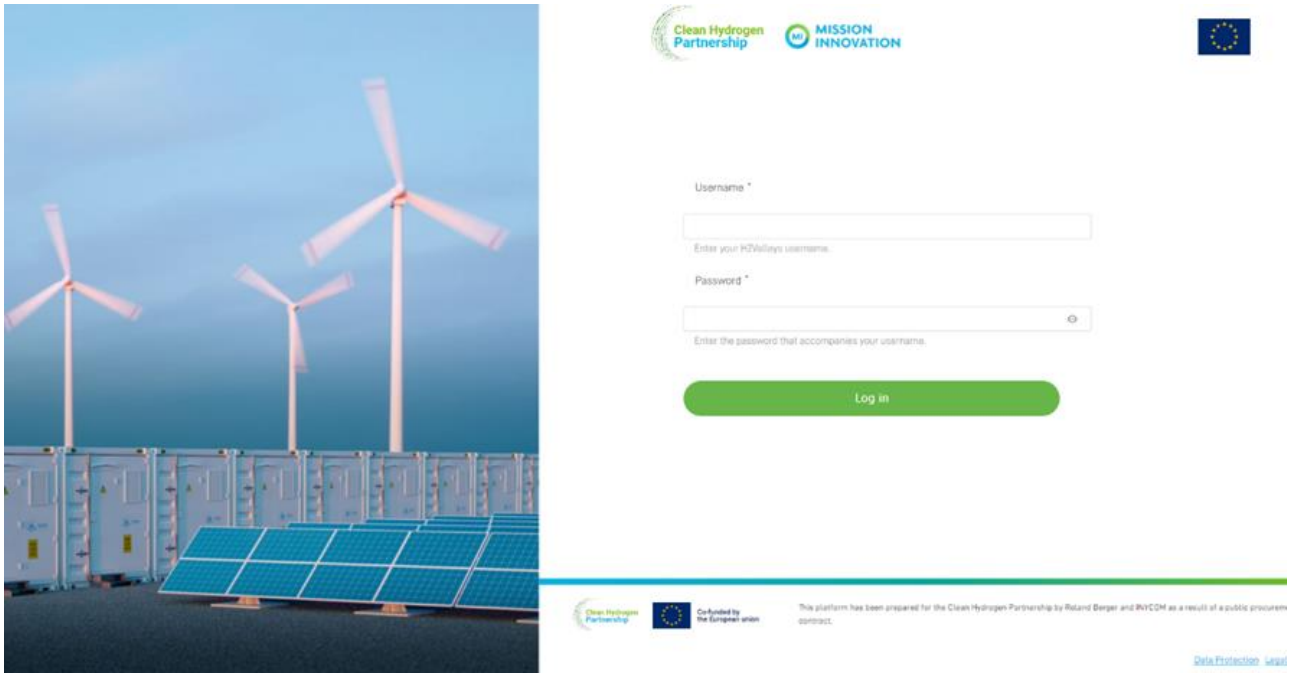
A backend interface has been created for the purpose of collecting and exploiting the data registered by the H2V representatives from the survey process, added by users to the portal (e.g. matchmaking section), or introduced by Roland Berger and Inycom to then appear in the portal.

Besides, the backend allows management functionalities such as enable and disable users and their survey information, add new best practices, add links for the toolbox menu and managing the matchmaking submissions

That is, it allows self-sustainability of the portal in terms of contents updates. To access it, it is necessary to have an enabled user and password. Then, it can be accessed through the following URL: https://www.h2v.eu/user/login.

Once the URL has been accessed, there is a login page where the username and the password is required. For simplicity, this landing page is used by both new H2Valley representatives needing to fill out the questionnaire and technical experts to maintain the proper functioning of the platform (administration users).

**Figure 22: Login page to access the backend of the H2V portal.**

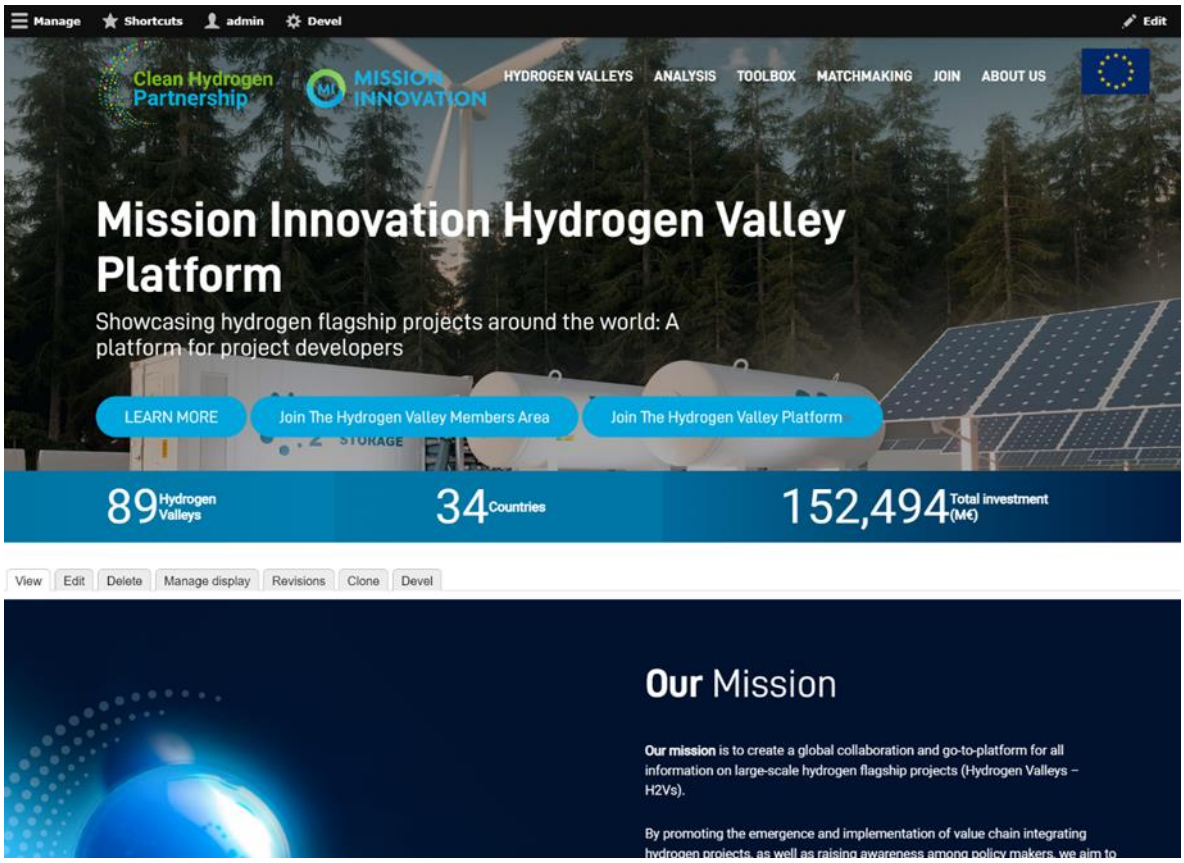



Once contributors to the survey access, they will reach the landing page of their specific questionnaire with accesses to each chapter to then provide answers to the questions. This is, although they use the same access landing page, contributors do not have access to the backend administration menu.

### 2.1.1 Administration access

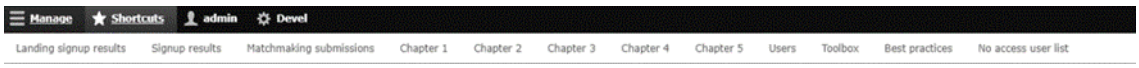
When editors of contents of the portal access with their master credentials, the homepage of the portal will appear as in https://www.h2v.eu but with the difference that on the top there is a bar showing the user name and the shortcuts.

**Figure 23: Aspect of the backend menu's landing page when reached with edition permits.**




The shortcuts contain all the administration menus which serve to modify, add or delete the information displayed on the portal, as displayed in Figure 21:

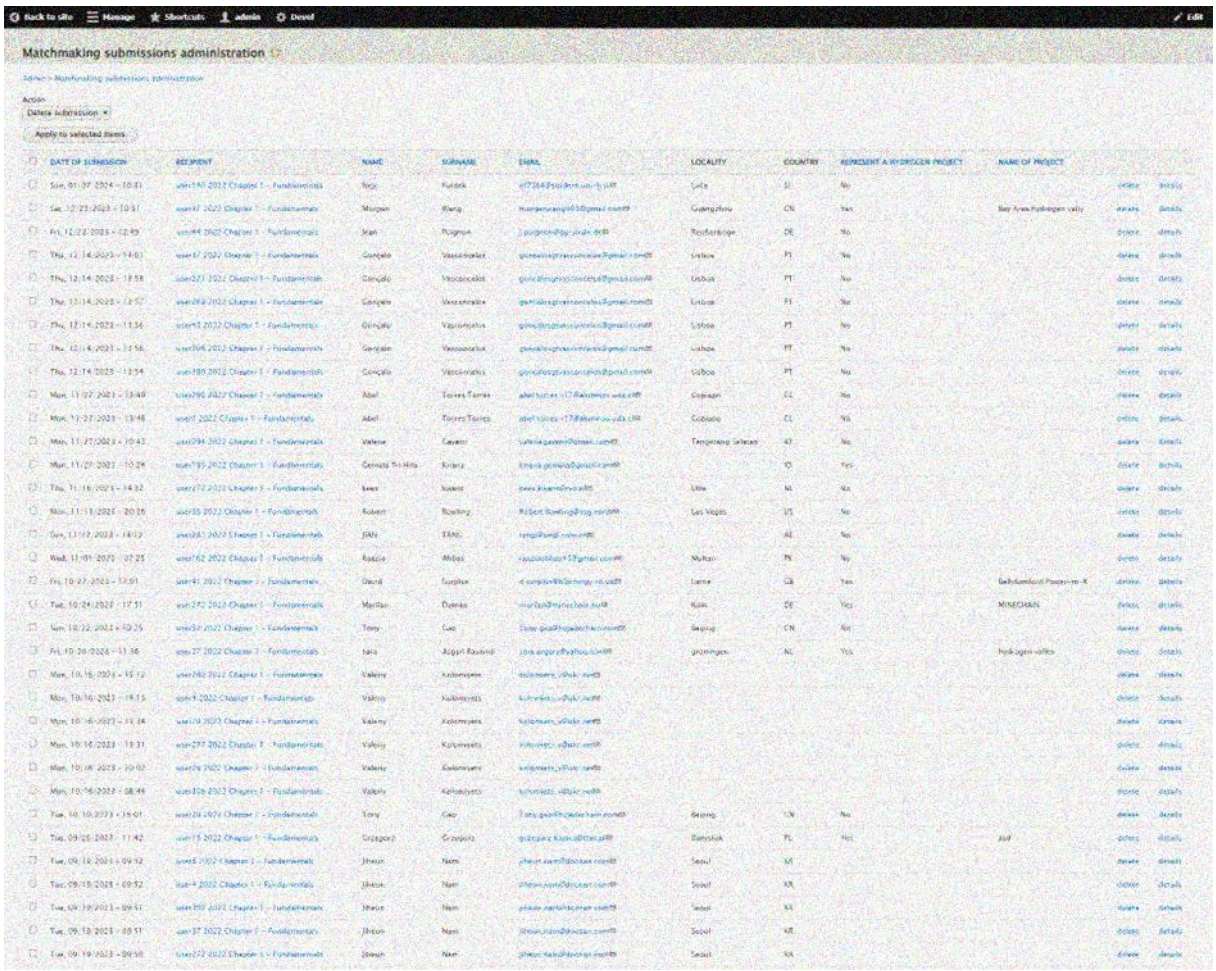
**Figure 24: Shortcuts in the backend menu.**




#### Matchmaking submissions

This menu contains the list with all the messages sent by users to the H2Valleys through the Matchmaking menu of the portal (https://www.h2v.eu/matchmaking).

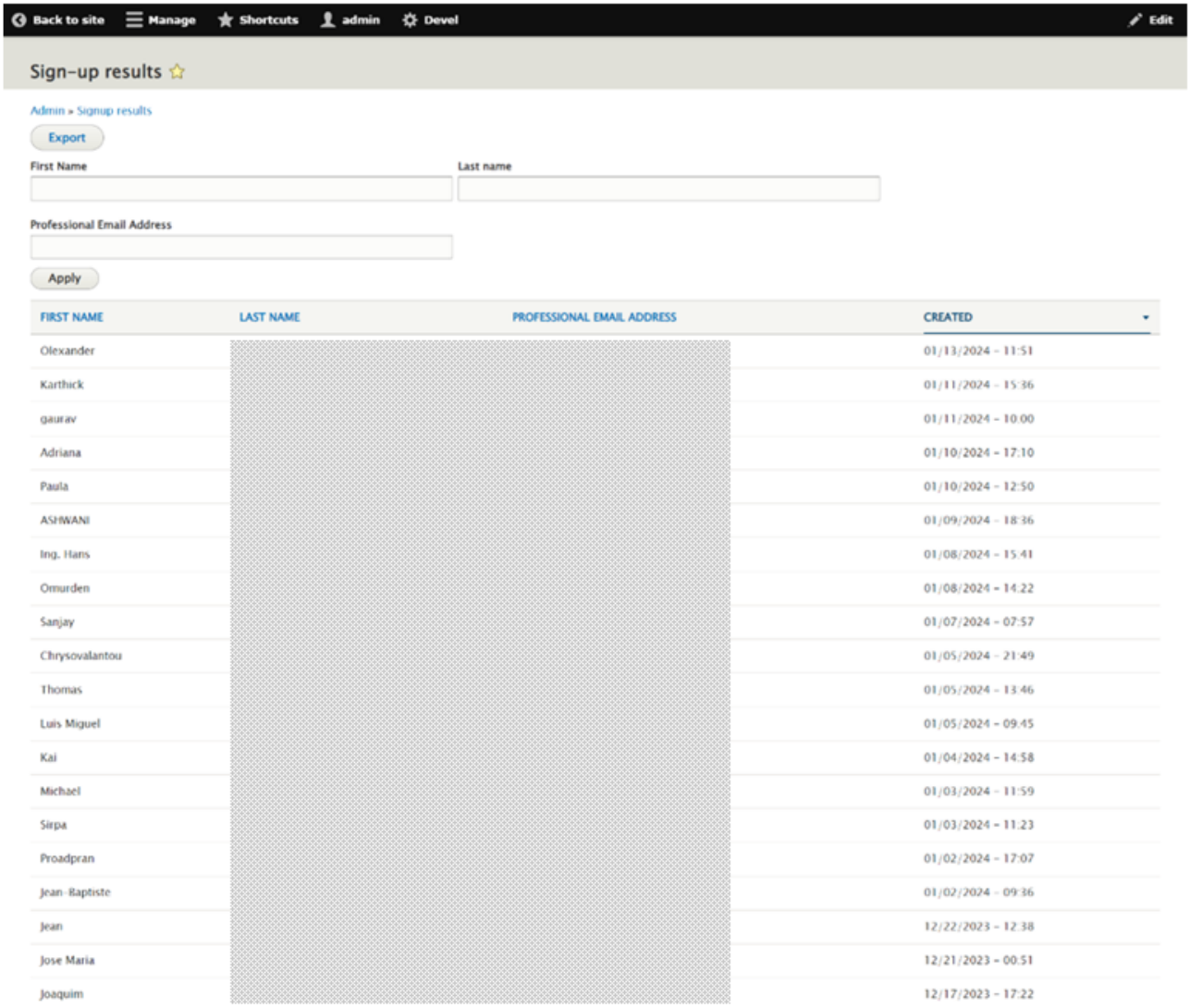
**Figure 25: Monitoring panel in the 'Matchmaking' administration menu.** (GDPR compliant display)




### Sign up results

This menu contains the list of stakeholders subscribing to the 'Sign up here for updates' contact form. This contact form can be found in different sections of the portal in the form of CTA buttons.

**Figure 26: Sign up here for updates' monitoring panel.**



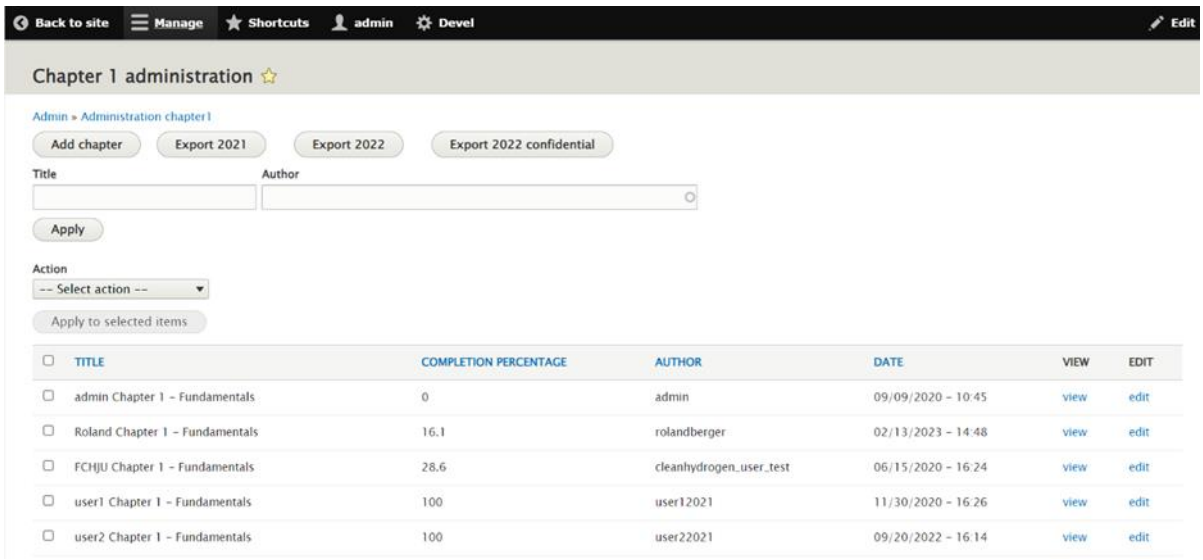

**Chapter N (one menu per chapter)**

These are the master menus to monitor status and access all chapters in the H2V survey with the possibility to edit entries ('edit' button) at the user level and download the results in .csv format ('Export' buttons) with the answers from all users.

For the second phase of the contrcat, different 'export' buttons have been created:

- Export 2021: for exporting the data from the questionnaire done in 2021 (first contract)
- Export 2022 for exporting the data from the new questionnaire
- Export 2022 confidential: same as Export 2022, but without the privacy check fields for a better and clearer understanding of the collected information (requested by Clean Hydrogen JU).

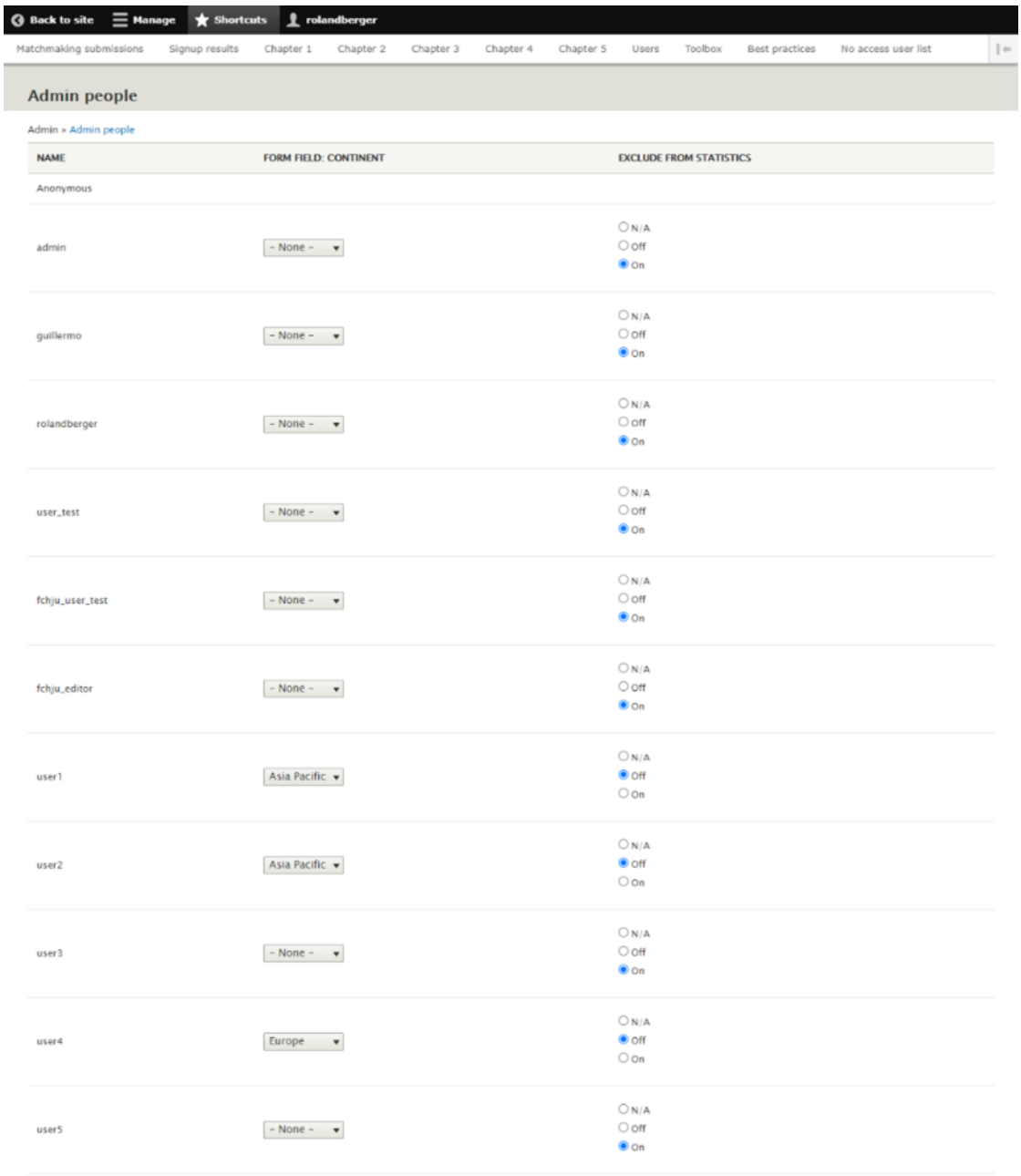
**Figure 27: Monitoring and edition panel in Chapter 1 in H2V survey**




**Users**

This menu consists of the list of H2V Platform users that contributors need to access the portal and fill in the survey. Additionally, administration users are also displayed on top. Administration profiles have the possibility to include and exclude contributors' users in this menu, meaning that their information will be displayed or not in both the 'Hydrogen Valleys' and the 'Analysis' menus (since these ones feed from the survey).

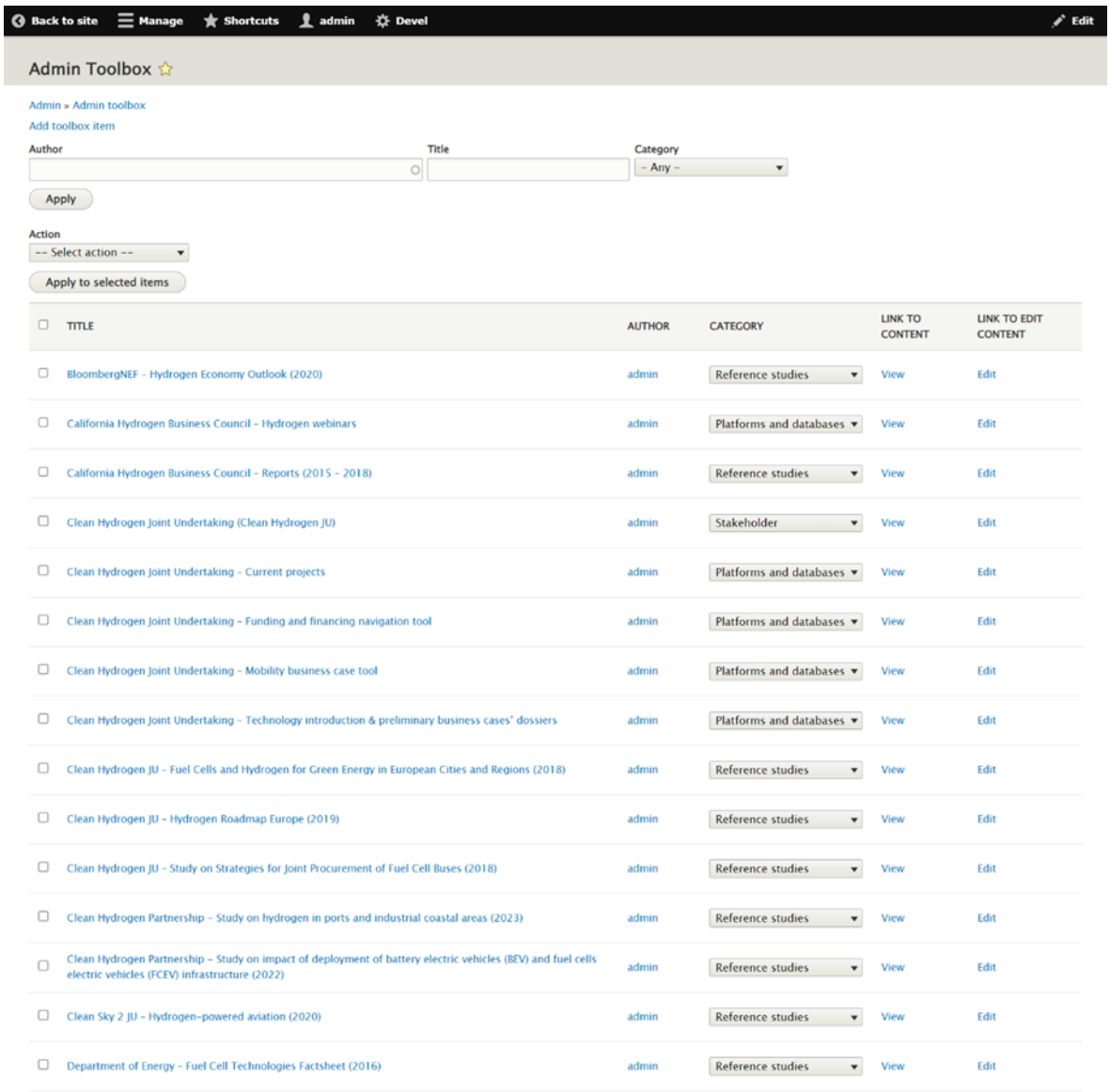
**Figure 28: 'Users' menu in the H2V backend.**




### Toolbox

This menu allows to add a new link to the Toolbox menu and also to indicate its category so that it appears directly on the corresponding tab in the portal.

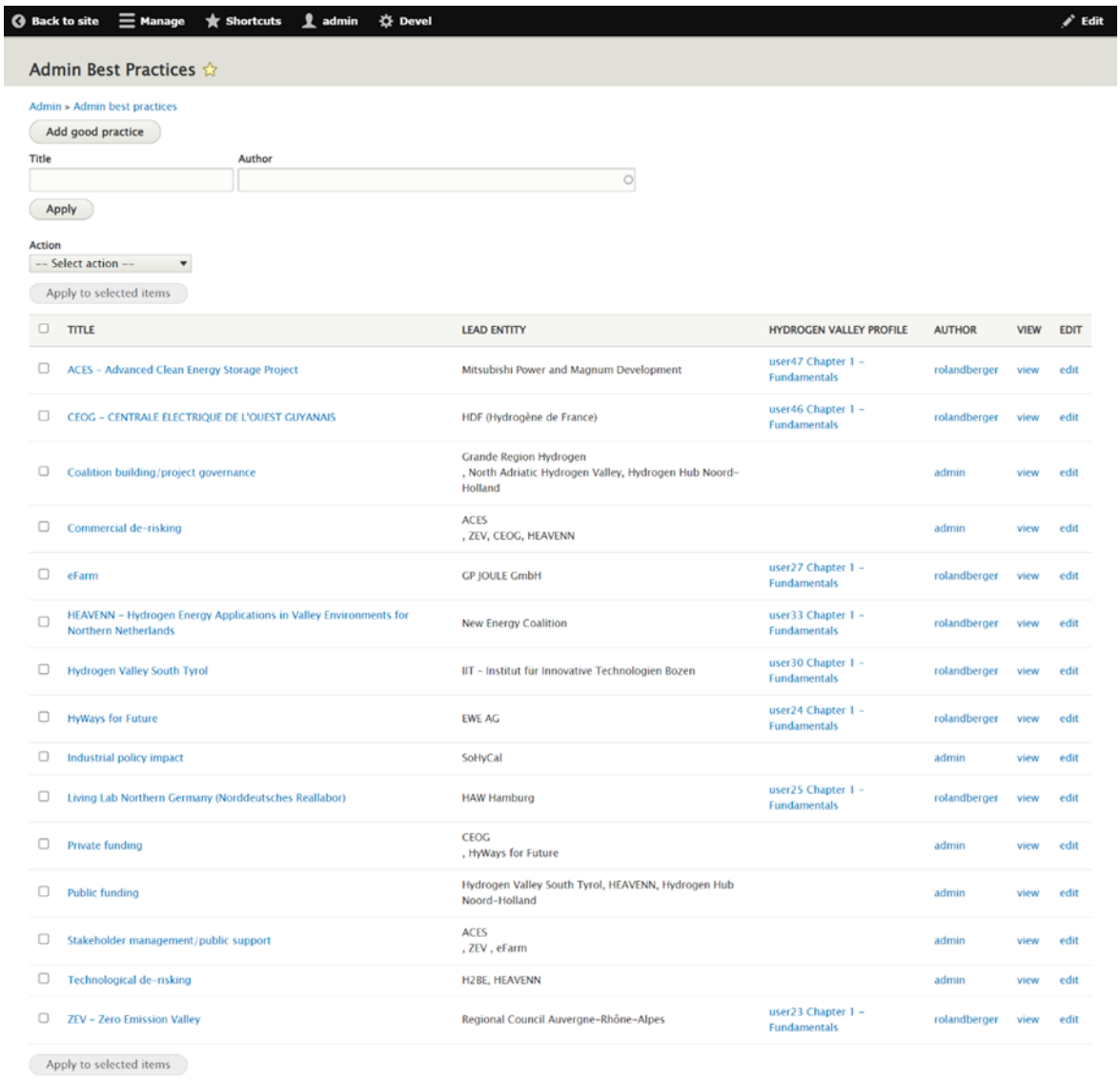
**Figure 29: 'Toolbox' administration menu in the H2V backend.**




### Best practices

This menu allows the user to introduce the results of an interview (images, questions and answers) with valleys to then appear in the 'Best practices' menu as a success story.

**Figure 30: 'Best practices' administration menu in the H2V backend.**




### 2.1.2 Contributors' access

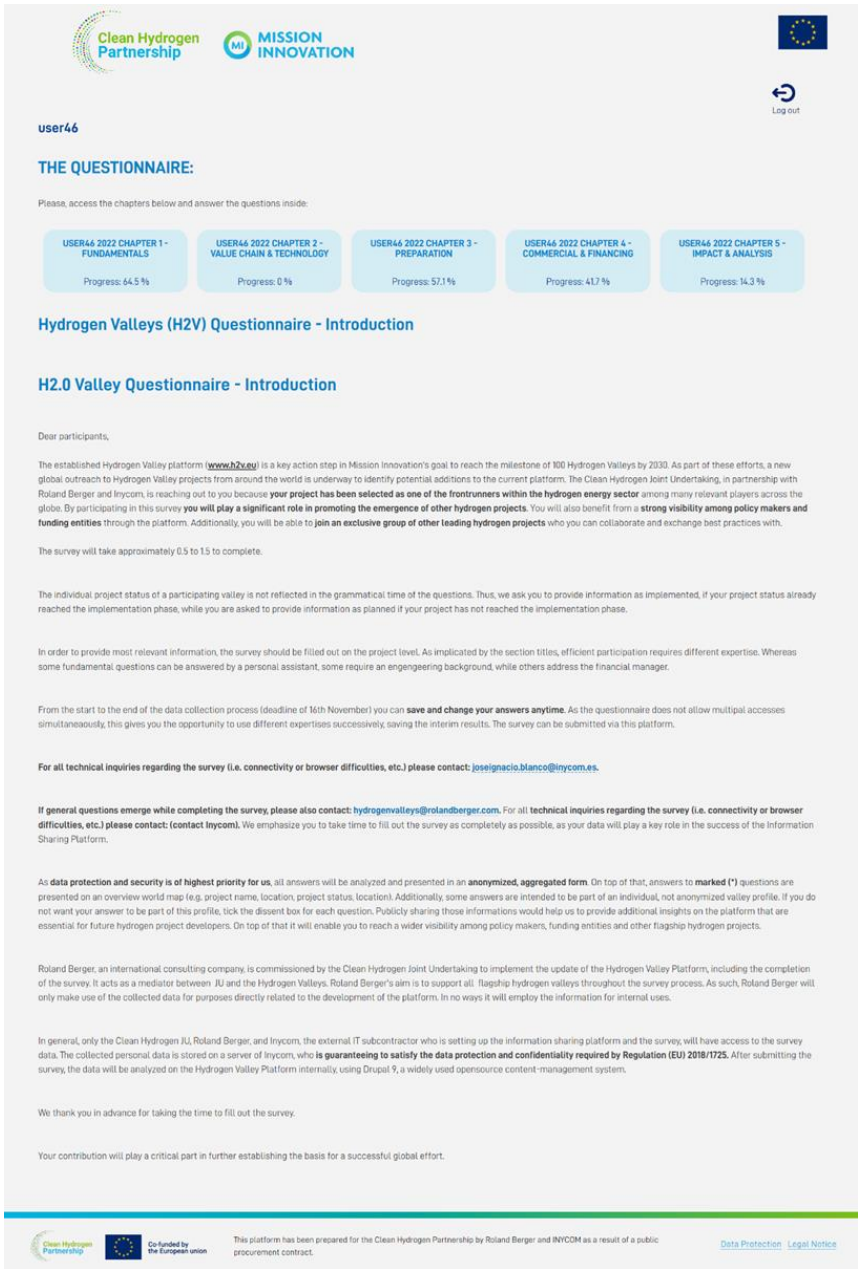
In the case of the Hydrogen Valleys representatives, when logged in, the main menu will appear with the explanatory text about the questionnaire. In this text, the following sections are included:

- 'Introduction', explaining the importance of the H2V platform
- 'Survey guide', providing guidelines and clear instructions on how to complete the survey
- 'About us', including information about the partners in charge of the implementation of the H2V platform as well as the GDPR aspects

The essential part of this main menu is on top of the page which includes the links to each chapter of the questionnaire (Fundamentals, Value chain and technology, Preparation, Commercials and Financing and Impact and Analysis). When clicking on the boxes, the user is redirected to the corresponding chapter of the survey.

The survey has been created in a way that the answers can be saved even if the entire chapter or questionnaire has not been fully completed. This allows the user to log in as many times as necessary to answer the questionnaire. Also, the structure in chapters allows for a fragmentation of the process as well as access of different profiles from the entity completing the survey. For example, the 'Fundamentals' chapter could be completed by a Project Manager, the 'Value chain and Technology' chapter could be filled in by a Technical Manager and the 'Commercial & Financing' chapter could be completed by a Business Developer. Subsequently, once the user clicks on a chapter, the questions will appear. The full questionnaire is transcribed in the Annex II.

**Figure 31: Landing page reached by contributors to then complete each chapter in the survey.**



# 3. IT Actions and activities performed

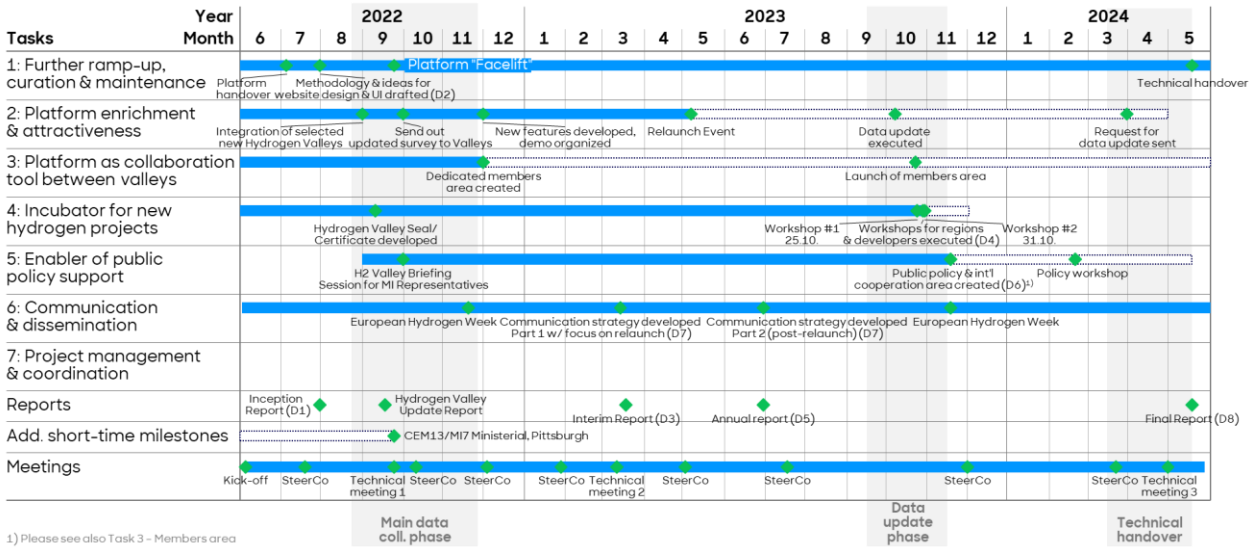
## 3.1 Recap of IT activities

This section indicates at a high level the most relevant technical actions carried out during the contract.

| Action | Date | Short description |
|---|---|---|
| Handover of the platform | June 2022 | Handover of the platform from Clean Hydrogen and Real Dolmen |
| Portal update | July 2022 | Required updates since the platform had not been updated since the end of the first contract (Drupal, php & security updates) |
| Platform facelift | July - September 2022 | Platform facelift requested by Clean Hydrogen for the MI event in Pittsburgh. New platform visual identity (aligned with the new VI of the Clean Hydrogen JU) agreed by the Clean Hydrogen JU. Update of the GDPR documents and links. |
| Questionnaire upgrade | September - November 2022 | The questionnaire from the first contract was upgraded based on the requirements indicated by Roland Berger. The new questionnaire follows the same format as the one from the first contract. Update of the export csv files in the backend |
| Opening of user access to the new questionnaire | November - December 2022 | Creation and opening of the users access to the questionnaire during 1st phase of data collection |
| Development of the members area | January - March 2023 | Development of the members area based on OpenSocial. The different functionalities to be included in the members area were discussed in a specific meeting hold between RB, Inycom and Clean Hydrogen JU. |
| Modification and development of new charts | February - March 2023 | Modification of existing charts and creation of new ones based on the questions form the new survey. Revision of the charts made by RB in pre-production before publication |
| Publication of the H2V 2.0 platform | April - May 2023 | Preparation of the environments to be migrated to platform.sh servers. Migration of the platform and members area following the multi-app approach offered by Real Dolmen. Platform & members area published by May5th as agreed for the May 8th platform relaunch. |
| Change of structure in Best Practices | May 2023 | Change of structure of the form in the backend. From being a one-valley interview (with the title being the name of the valley) to a multi-valley interview focused on a specific topic. |
| Join Us section - adding 4th button | July 2023 | Adding the 'Benefits' button so that the potential valleys joining the platform can see how beneficial it is to be showcased on the platform |
| Changes in the public excel file | December 2023 | Addition of new fields in the public excel file (funding source, value chain coverage & end use sector) - info available on each profile. |
| PDF export of the valley profiles and new filter criteria (tbd - review pending) | By May 2024 | The valley profile will be downloaded in format PDF as is visualized on the website. |
| Handover of the platform to new service provider | April - May 2024 | See handover plan (Annex III) |

## 3.2 Recap of platform activities

The Annual Report (D5) gave an status update on project progress and described all tasks from the first half of the project to summer of 2023 in more detail.




This section indicates at a high level the most relevant non-technical actions carried out during the contract since publication of the Annual Report (D5).

| Action | Date | Short description |
|---|---|---|
| Data update – Autumn 2023 | October 2023 | Hydrogen Valleys indicate their status and timeline to monitor progress. They can easily update this information in case their status/timeline changes and are requested to do so via mail and phone calls. Data on the platform will be updated acordingly after curating and validating submitted data and data analyses |
| Launch of members area | October 2023 | See chapter 1.2 Members Area |
| Workshop series | October 2023 – February 2024 | Three workshops with different target audiences and topics:<br>• Conduction of workshop looking into specific regional collaboration opportunities between identified Hydrogen Valleys<br>• Conduction of workshop looking into success factors of Hydrogen Valleys<br>• Policy maker workshop |
| Data update – Spring 2024 | October 2023 | Hydrogen Valleys indicate their status and timeline to monitor progress. They can easily update this information in case their status/timeline changes and are requested to do so via mail and phone calls. Data on the platform will be updated accordingly after curating and validating submitted data and data analyses |

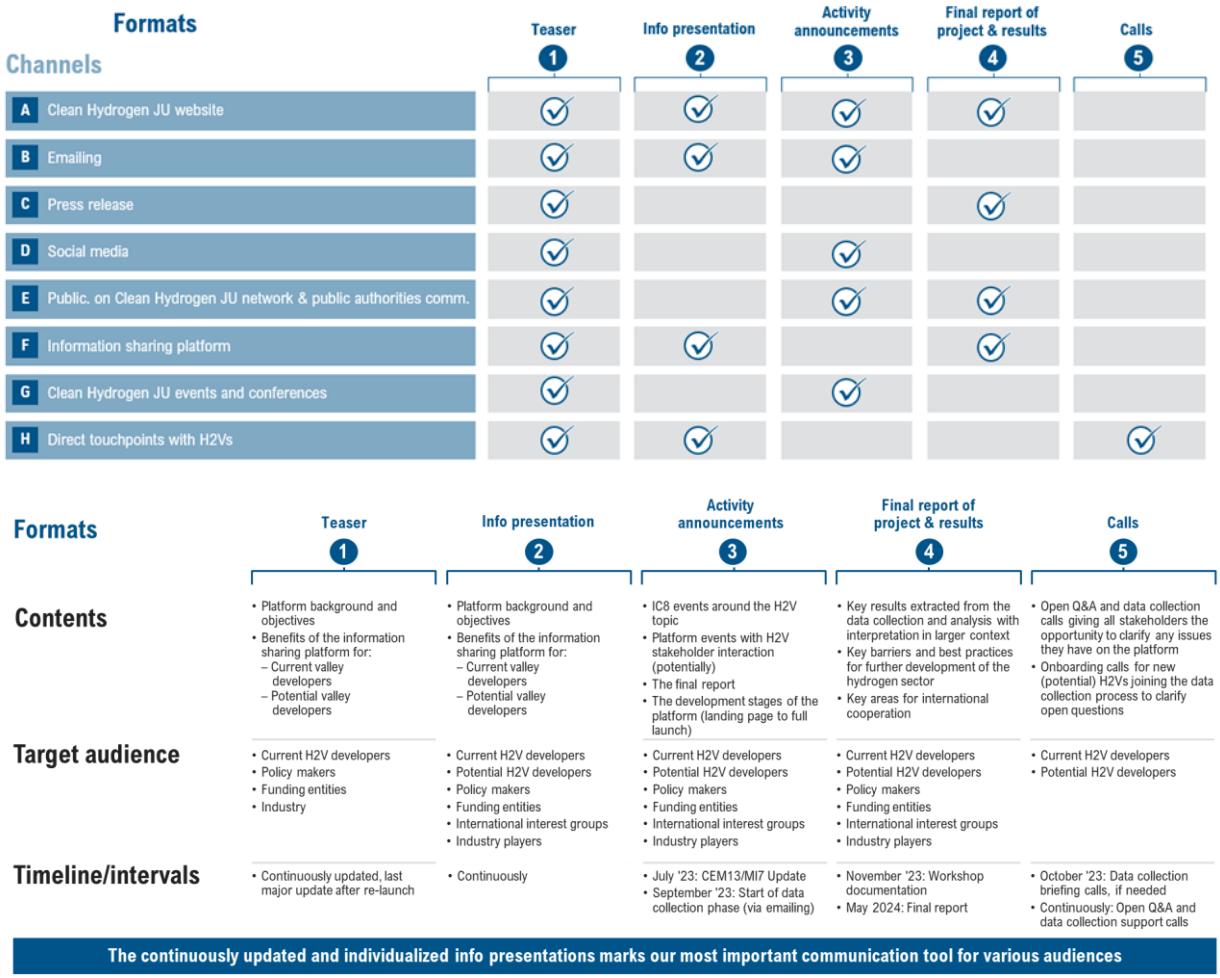
# 4. Communication activities, workshops and materials

## 4.1 Recap of communication activities, formats and channels

Over the course of the project, a dedicated communication strategy ensured efficient communication on a continuous basis between all project stakeholders. It enabled the project developers to efficiently relaunch the platform, contributed to extensive outreach to Hydrogen Valleys and generated substantial interest in the platform.

The following chapter provides an overview of the main communication activities undertaken during the relaunch and continued support of the Mission Innovation Hydrogen Valley platform, the different channels used and the audience groups that were reached to contribute to the successful setup and delivery of the platform.

**Figure 32: Communication channels and formats**




### Steering Committee (SteerCo)

The SteerCo consisted of Mission Innovation representatives, the Clean Hydrogen Partnership and the project team consisting of Roland Berger and Inycom. The SteerCo ensured timely feedback from its members to the project team regarding the progress of the project, decisions regarding the setup of the platform and involvement of Hydrogen Valleys.

**Hydrogen Valleys**

Substantial communication activities surrounded the Hydrogen Valley initiatives themselves. After they had been informed about their selection as a Hydrogen Valley and the subsequent roll-out of the updated survey, continuous support was provided by the project team on an individual needs basis. This proved to be particularly important as the Hydrogen Valleys were not yet able to see the outcome of the project and what the platform was going to offer for them. The calls thus contributed to a better understanding of the project and ensured further commitment and participation from their side.

Moreover, extensive follow-up and individual meetings carried out by the project team took place. Meeting with projects from many countries, including but not limited to Germany, the Netherlands and the United States took place in order to answer questions and provide guidance on the survey. Similarly, after the data collection was completed and data validation took place, the project team reached out to all Hydrogen Valleys to validate their input for the public profiles on the platform and addressed remaining questions regarding survey answers.

In addition to activities related to the survey roll-out, in-depth interviews with selected Hydrogen Valleys were conducted as well. The information gathered during these interviews complemented the aggregated data analyses provided on the platform. Based on the survey, Hydrogen Valleys were selected that appeared to have mastered a particular challenge that other projects identified as major hurdle particularly well during their project development. The synopsis of the interviews where the projects provided insights into their lessons learned and recommendations for other Hydrogen Valleys is publicly available on the Hydrogen Valley platform as well in the best practices section.

**Other user groups**

Besides that, a dedicated communication strategy for other user groups was developed:

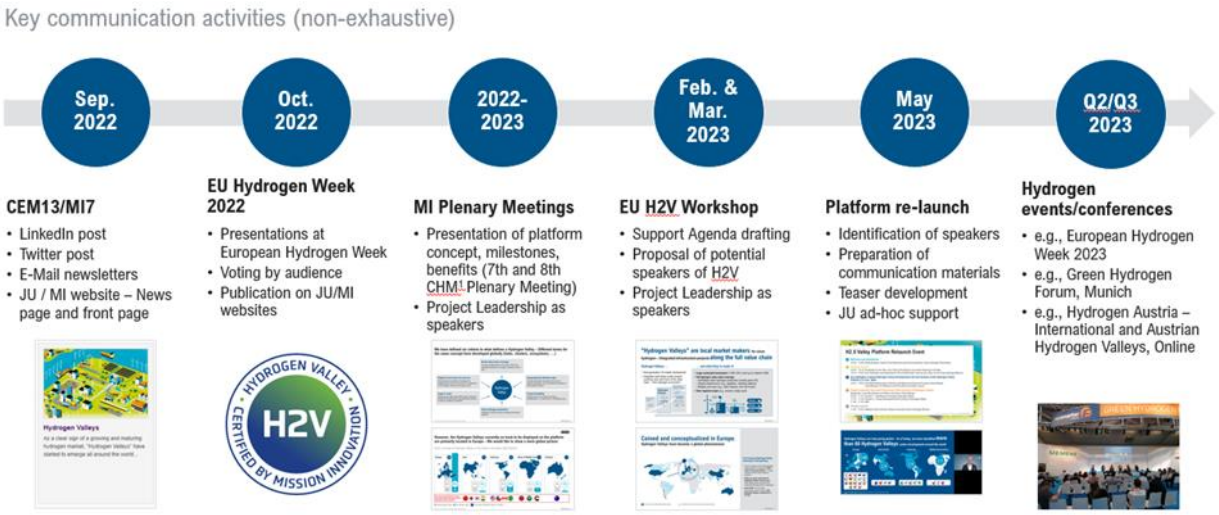
**Figure 33: Communication needs and rationale for audiences**

Communication needs and rationale for audiences

| | User group | Communication needs/expectations | Key objectives |
|---|---|---|---|
| Key user groups | 1 **Current valley developers** – "Leaders" | • Current project development status<br>• Meetings, workshops and events | • Inform about the project progress<br>• Win followers, contributors and supporters |
| | 2 **Potential valley developers** – "Followers" | • Information and best practices on various topics of hydrogen deployment | • Learn on how to deploy hydrogen projects<br>• Examine, whether own deployment is feasible |
| | 3 **Policy makers** (e.g., MI CHM) | • Successful implementation examples from H2.0 Valley platform<br>• Required public participation/support (e.g., incentives) | • Learn how to efficiently support local hydrogen deployment projects in their jurisdiction |
| | 4 **Funding entities** (e.g.,, NOW GmbH) | • Potential participation/support in the space (e.g., subsidies, funding, etc.) and their success | • Support the development of large-scale hydrogen deployment or the creation of enabling ecosystems |
| Peripheral user groups | 5 **Industry players** (e.g., NEL, Linde, Ballard) | • Economic information and analyses on hydrogen deployments and its effect on the industry | • Identify demand from potential customers/target audiences to sell equipment etc. |
| | 6 **International org.** (e.g., IEA, IPHE) | • Information on the latest development in the space and analyses on them | • Inform the public, business, politics and other institutions about hydrogen trends and their effects |
| | 7 **Academia** (e.g., research centers) | • Scientific information and analyses on hydrogen deployment and its impact | • Support scientific research<br>• Evaluate the support of hydrogen deployment from a academic perspective |
| | 8 **Interested general pubic** | • Easily accessible and understandable information on hydrogen and its effect on the general public | • Create awareness and acceptance of clean hydrogen solutions |

As part of the project, there have been numerous communication activities, both on- and offline, increasing the visibility of Hydrogen Valleys globally (see examples below).

**Figure 34: Key communication activities**




## 4.2 Continuity of service and essentials for handover of communication activities

In order to ensure the continuity of service, this chapter provides a synopsis of the main tasks that need to be conducted in order to ensure a minimum level of service for the platform and for the Hydrogen Valleys on it. The tasks can be divided into a) managing requests from existing Hydrogen Valleys on the platform and b) managing requests from projects that want to join the platform. Please note that the following chapters provide the how-to from a communications standpoint.

The mailing list H2V@clean-hydrogen.europa.eu and the account hydrogenvalleys@rolandberger, set up especially for this purpose, were used for communication.

In general, we receive approximately 5 emails per week, which can be categorized into the following types:

1. Technical handling of the platform: This category constitutes the majority of the emails, accounting for approximately 80% of the total. These emails typically involve first-level support answers, often including screenshots, to address technical issues related to the platform (e.g. login credentials, new contact details, etc.)
2. Content requests: Approximately 15% of the emails fall into this category. These emails contain brief details regarding the data on the platform and requests for specific content.
3. H2 related spam: This category accounts for around 5% of the emails received. In normal circumstances, these spam emails are ignored as they are unrelated to the Hydrogen Valleys Platform.

Please note that these figures are based on our typical email distribution during normal times. However, during data updates or workshops, we receive a significantly higher volume of emails. These events require frequent correspondence to ensure smooth coordination, address any technical issues, and provide timely updates to all relevant stakeholders. At all times, it is crucial to respond to emails within 24 hours.

### 4.2.1 Requests from existing Hydrogen Valleys

As the survey has been answered by most Hydrogen Valleys more than six months ago, some Hydrogen Valleys have proactively reached out with requests to change some information that has been provided to the platform. These requests can be handled in two ways: The person handling the request changes the information in the backend in case of minor changes, e.g., changing project names, or the survey gets reopened for the Hydrogen Valley in order to review their entire answers. In the latter case, the public profile can be shut down during the review of the data. Once the Hydrogen Valley has finished updating their data, their profile can be put back on the platform. If needed, a preview of the updated public profile can be provided to the Hydrogen Valley for validation. In both cases, communication via email proved to be the most efficient way, also as a way to document the process.

### 4.2.2 Requests from new projects to join the platform

**First stage: Assessment**

In a first stage, the projects that request to join the platform need to be assessed based on their fit with the selection criteria: a broad value chain coverage, clean hydrogen production, multiple end uses, a geographically defined project scope as well as size (multi-million, two-digit investment). Moreover, the projects ideally need to be at least at the feasibility stage. This was assessed by examining public information from the valleys with regard to the valley criteria and, if necessary, requesting further material such as feasibility studies. For a detailed presentation of the selection criteria, please refer to onboarding document.

Based on the criteria, materials can be requested from the project to assess its fit. Depending on the quality of the material provided, an additional meeting (e.g., via Microsoft Teams) might be necessary to get a better understanding on the current status of the project. Afterwards, the decision is communicated to the project.

**Second stage: Survey roll-out and answering questions**

In case the project gets selected to join the platform, they can be immediately provided with their personalized survey access. Together with a standard description of how to access the survey and the login details, an information document on the survey as well as the platform is sent alongside to answer immediate questions the Hydrogen Valley might have ranging from the information requested from them to how it will be used as well as concerns around data protection. The deck in PDF form as well as the draft email is provided separately alongside the final technical report.

**Third stage: Survey data check and follow up**

Once the Hydrogen Valley has completed the survey, their access gets closed and their answers are reviewed. This includes a spelling check as well as controlling for overall consistency (i.e., do the quantities match, is the investment volume consistent throughout the survey, do percentages add up etc.). Particularly important are the answers that are publicly shared via the Hydrogen Valley profiles on the platform. For this reason, the "view" function in the backend provides the possibility to review the profile before the go-live. It proved to be beneficial in the daily work to reconfirm the content in the profile with the Hydrogen Valley to get their final approval. In addition to that, it also further encourages projects to share the high-level information required when they see that their profile would otherwise appear empty.

**Fourth stage: Go-live on the platform**

After the survey data check and public profile approval, the new Hydrogen Valley can go live on the platform. The Clean Hydrogen Partnership and/or Mission Innovation can decide on whether to regularly communicate via their channels on new joiners of the platform. Possible communication channels directly related to the platform are the Hydrogen Valley Members Area, as well as the public subscription ("sign-up results") email distribution list to which platform visitors can subscribe to.

**6-monthly data update**

In order to stay relevant and continue to deliver up-to-date insights, the Hydrogen Valleys on the platform will be asked every 6 montsh to update key project related data and share their progress (e.g., having taken FID, having started construction). The public profile will be updated accordingly. At the same time new projects will be invited to join the platform.

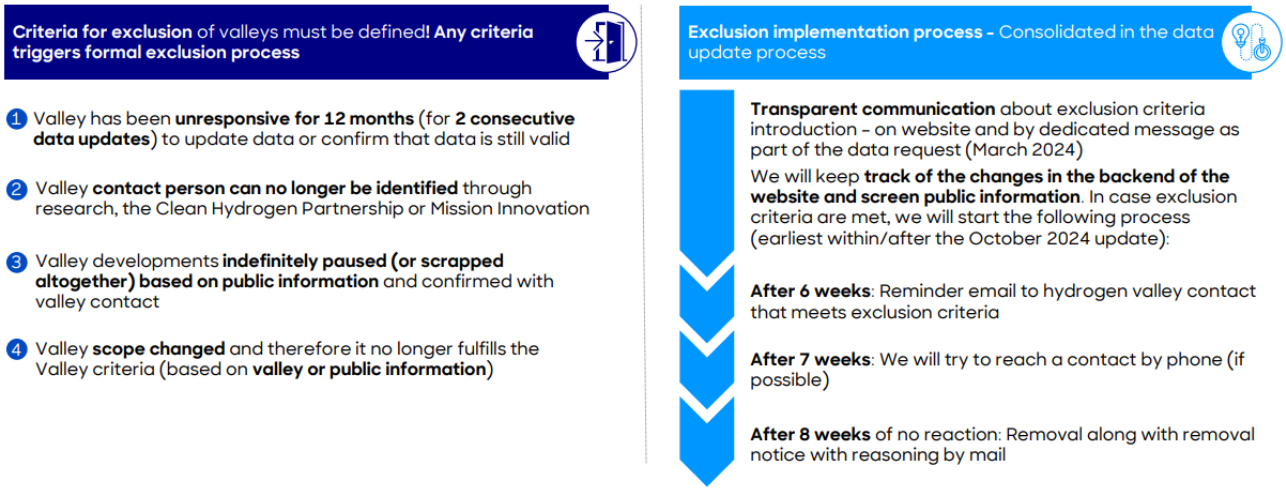
Process:

- Send invitation mail to join the platform to new valleys
- Initial data update mail send to valleys on the platform
- After three weeks: Reminder mail send to potential new valleys
- After three weeks: Personal reminder sent to valleys on platform
- After four weeks: Personal reach out via phone to valleys on platform

**Exclusion**

The hydrogen market development is dynamic and therefore demands more dynamic criteria to reflect hydrogen valley progress. Criteria for exclusion and an exclusion process have been developed:

**Figure 35: Definition of exclusion criteria and implementation process**




## 4.3 Handover documents

In the table below, a list of the documents provided in addition to this report, the platform and the associated database (accessible via the platform's backend, see chapter 2) can be found including a short description and a specification of the respective format. The documents are differentiated by technical handover and community handover. The technical handover is the simple everyday operations and technical maintenance of the platform. The community handover relates to handling and interacting with the hydrogen valley community. While the technical handover will be performed with the knowledge hub contractor, the community handover will be performed with nominated Clean Hydrogen Partnership contacts.

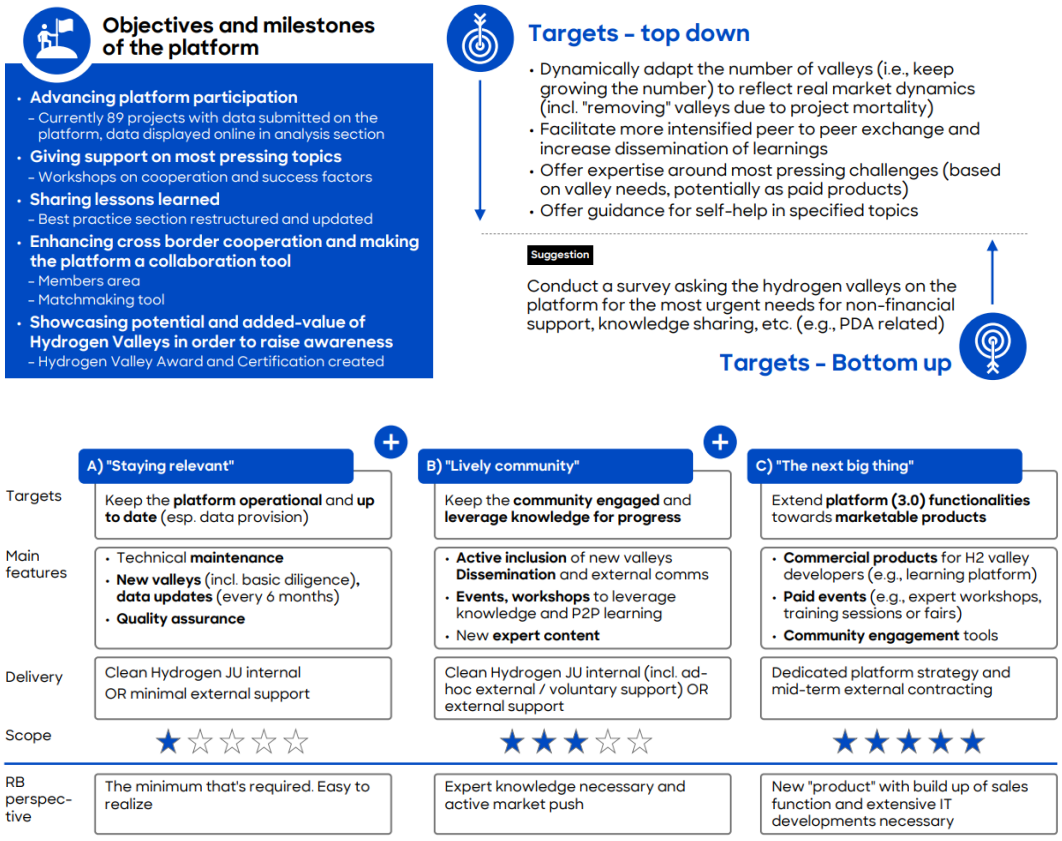
| Document | Description | Handover type | Format |
|---|---|---|---|
| Handover document (Confidential) | Confidential document with all necessary access details | Technical handover | PDF |

| | | | |
|---|---|---|---|
| Service delivery plan | Description of handover processes | Technical handover | PDF |
| Hydrogen Valleys contact list (Confidential - GDPR) | Contact list of Hydrogen Valleys that were selected for the platform, including survey usernames | Community handover | XLSX |
| Hydrogen Valleys project database (Confidential - GDPR) | Main database is available in the backend of the platform, however, additional excel will be provided (also downloadable at any time via the platform's backend) | Community handover | XLSX |
| Onboarding document | Onboarding document for new Hydrogen Valleys that are about to fill out the survey. The document explains the platform, criteria for joining, data handling, key topics of the survey and guidelines. | Community handover | PDF |
| Draft Email for survey access | Draft to communicate how to access the survey to a new Hydrogen Valley | Community handover | DOCX |
| "Sign-up results" contact list (Confidential - GDPR) | Available for download in the platform backend | Community handover | XLSX |

## 4.4 Future of the Hydrogen Valleys platform

For a potential further phase of the platform post-mid-2024, first ideas were developed (see below). The Clean Hydrogen Partnership's Annual Work Programme 2024 has indicated further support to this platform under the planned 'Hydrogen Valley Facility'. It intends to increase the number of Hydrogen Valleys even further.

**Figure 36: Target picture for further progress and modular platform servicing options**



# Annex I: Service Privacy Statements, Data Protection and Legal Notice

***I. Sign up form - Privacy Statement***

***Specific Service Privacy Statement For data collected via online subscriptions for updates about the Mission Innovation Hydrogen Valley Platform Initiative***

*This privacy statement explains how the Clean Hydrogen Joint Undertaking (here after referred to as Clean Hydrogen JU) uses any information you give to us while registering for the updates relative to the Mission Innovation Hydrogen Valley Platform Initiative (hereafter, 'the Initiative') and the way we protect your privacy.*

***1. Context and Controller***

*This specific online service consists of an online electronic registration made available on this web page, offering you the possibility to subscribe in order to receive information about the Initiative and its relevant activities. While registering, your personal data will be collected and further processed for the purposes detailed below under point 2.*

*The relevant processing operation is under the responsibility of the Executive Director of the Clean Hydrogen Joint Undertaking, acting as the Controller.*

*As this online service collects and further processes personal data, "Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC" is applicable.*

***2. What personal information do we collect, for what purpose and through which technical means?***

***Types of personal data***

*The personal data collected and further processed by the Clean Hydrogen JU in relation to the online services are data necessary for the organisation and management of communication activities:*

- *First name**
- *Last name**
- *Professional e-mail address**

*(* Replies to these questions are mandatory since all information requested is necessary for registration. In case of a no reply, the registration to the online service will not be carried out.)*

***Purpose and technical means***

*The purpose of processing personal data for the online service is to send information to you about the initiative and its relevant activities, as well as the creation of a database of subscribers with contact details (e-mail address) for future communications.*

***3. Legal basis***

*The legal basis for the organisation of the subscription process, including its management and the related processing, is Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020).*

*In line with Article 5.1(a) of Regulation (EU)2018/1725 the processing operation is necessary for the performance of tasks carried out in the public interest on the basis of the Treaties or other legal instruments adopted on the basis thereof.*

*The lawfulness of the processing of personal data is also based on Article 13 (1) of the Directive 2002/58/EC whereby the data subject has unambiguously given its consent, which corresponds to the data subject's consent in Article 5.1(d) of Regulation EC 2018/1725. By clicking on the "submit" button in this online service, the applicant will be considered to have given his or her consent to the processing of their data in the context of the Initiative.*

***Lawfulness of the processing operation***

*The data processing is considered lawful because it is necessary:*

- *For the performance of tasks carried out on the basis of Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)*

***4. Who has access to your information and to whom is it disclosed?***

*For the purposes detailed above access to your personal data is given to the following persons:*

- *nternally authorized staff of the Clean Hydrogen JU*

***5. How do we protect and safeguard your information?***

*The personal data and information related to the Platform is stored on the servers of Clean Hydrogen JU, the operation of such servers abides by Clean Hydrogen JU's security decisions and provisions established for this kind of servers and services. This includes the Common IT Security Policy, implemented by the Clean Hydrogen JU applying the security measures described in the Commission Decision (EU Euratom) 2017/46 of 10 January 2017 concerning the security of communication and information systems in the European Commission, Standards on Information Systems Security, Complementary information systems security policy and control measures as applied to specific applications by respective system owners.*

***6. What are your rights regarding your personal data?***

*As a data subject, you have the following rights under the Regulation:*

1. *You have the right of access to your personal data and to relevant information concerning how we use it.*
2. *You have the right to rectify your personal data.*
3. *Under certain conditions, you have the right to ask that we delete your personal data.*
4. *Under certain conditions, you have the right to ask that we restrict the use of your personal data.*
5. *You have the right to object to our processing of your personal data, on grounds relating to your particular situation, at any time.*
6. *You have the right not to be subject to a decision based solely on automated processing of data, including profiling, if such decision has legal effect on you, except for certain situations, such as entering into a contract (as required by Articles 14-16 & 24 of the Regulation).*
7. *You have the right to withdraw your consent at any time by sending your request by email to Data-Protection@clean-hydrogen.europa.eu.*

*Information on actions taken following data subject requests to exercise rights shall be provided without undue delay and in any case within one (1) month of receipt of the request. In case of complex or voluminous requests, this period may be extended by another two (2) months, in which case Clean Hydrogen JU will inform the data subject. In case data subjects wish to exercise their rights, they should send an email to the Clean Hydrogen JU's Data Protection Officer at Data-Protection@clean-hydrogen.europa.eu .*

*Possible restrictions as laid down in Article 25 of the Regulation may apply.*

***7. How long do we keep your data?***

*All personal data will be kept for a general retention period of five years. If you do not agree with this, please contact the Controller by using the contact information below and by explicitly specifying your request.*

***8. Contact information***

*If you have any questions relating to this online service, or on your rights, please contact the support team operating under the responsibility of the Controller, using the following e-mail: regions@clean-hydrogen.europa.eu*

***9. Recourse***

*Should you have any complaint or concern you may contact: the Data Protection Officer Clean Hydrogen JU at Data-Protection@clean-hydrogen.europa.eu In addition, as a data subject, you have a right to recourse to the European Data Protection Supervisor (EDPS) at any time by email to edps@edps.europa.eu or a letter to the EDPS postal address:*

*Rue Wiertz 60 - MO 63*

*B-1047 Bruxelles*

*Belgium*

*Tel: +32 2 283 19 00*

*Fax: +32 2 283 19 50*

*Email: edps@edps.europa.eu*

*For more information on the EDPS, please consult their website: https://www.edps.europa.*

### *II. Platform Cookie policy*

***Cookie Policy within the Mission Innovation Hydrogen Valley Platform Initiative***

*We use cookies on our website. A cookie is a small piece of data that a website stores on the visitor's computer or mobile device.*

***Types of cookies***

*In general, there are three different ways to classify cookies: what purpose they serve, how long they endure, and their provenance.*

***Duration***

***Session cookies -*** *These cookies are temporary and expire once you close your browser (or once your session ends).*

***Persistent cookies –*** *This category encompasses all cookies that remain on your hard drive until you erase them or your browser does, depending on the cookie's expiration date. All persistent cookies have an expiration date written into their code, but their duration can vary.*

***Provenance***

***First-party cookies*** *– First-party cookies are put on your device directly by the website you are visiting.*

***Third-party cookies*** *– These are the cookies that are placed on your device, not by the website you are visiting, but by a third party like an advertiser or an analytic system.*

***Purpose***

***Strictly necessary cookies*** *– These cookies are essential for you to browse the website and use its features, such as accessing secure areas of the site.*

***Preferences cookies*** *– Also known as "functionality cookies," these cookies allow a website to remember choices you have made in the past, like what language you prefer, what region you would like weather reports for, or what your user name and password are so you can automatically log in.*

***Statistics cookies*** *– Also known as "performance cookies," these cookies collect information about how you use a website, like which pages you visited and which links you clicked on. None of this information can be used to identify you. It is all aggregated and, therefore, anonymized. Their sole purpose is to improve website functions.*

***Marketing cookies*** *– These cookies track your online activity to help advertisers deliver more relevant advertising or to limit how many times you see an ad. These cookies can share that information with other organizations or advertisers.*

***How cookies are used***

*H2V uses cookies to ensure the smooth technical functioning of our website and for anonymised user statistics. When you visit the H2V website, you will be prompted to accept or refuse our cookies. You can change your preferences or delete the cookies stored in your browser at any time.*

***What cookies do we use?***

***Strictly necessary cookies:***

*These cookies are necessary to ensure smooth functioning of the H2V website.*

***Statistics cookies:***

*H2V makes use of Matomo (formerly Piwik) analytics to assess how visitors make use of the website. Matomo is an open source web analytics platform. A web analytics platform is used by a website owner in order to measure, collect, analyse and report visitors' data for purposes of understanding and optimizing their website. This platform enables the protection of end-user personal data thanks to features such as IP address de-identification. The information gathered from Matomo analytics is used to improve the functioning of the website for users. All data collected is anonymised.*

***How to control cookies***

*You can control whether or not to accept cookies on most browsers. For the most frequently used browsers, you can find instructions for configuring cookie settings below:*

- *Cookie settings in Internet Explorer*
- *Cookie settings in Firefox*
- *Cookie settings in Chrome*
- *Cookie settings in Safari*

***Contact information***

*Specific questions or requests for further information on H2V cookie policy can be sent to Data-Protection@clean-hydrogen.europa.eu .*

## III. Platform Data Protection

*DATA PROTECTION*

*PRIVACY POLICY*

***1.Personal data protection***

*The Clean Hydrogen JU, like other bodies, agencies and offices that are part of the EU institutions, may process your personal data (also known as personal information) for a number of reasons, from dealing with public requests for information to staff matters, procurement contracts, grant agreements etc.*

*The Clean Hydrogen JU is committed to user privacy. The policy on protection of individuals with regard to the processing of personal data by the Union institutions and bodies is based on Regulation (EU) 2018/1725.*

*Although you can browse through most of the pages of our website without giving any information about yourself, in some cases, personal information is required in order to provide the e-services you request, such as for example registration for participation to annual or ad-hoc events organised by the Clean Hydrogen JU within the Mission Innovation Hydrogen Valley Platform Initiative. The pages that require such information treat it according to the policy described in the regulation above and will always contain, in a dedicated privacy statement, the information about how we make use of your data.*

*In this respect:*

- *for each e-service, the purposes and means of the processing of personal data are specified in their corresponding privacy statement*
- *within the Clean Hydrogen JU, the Data Protection Officer ensures that the provisions of the regulation are applied and advises controllers on fulfilling their obligations*
- *as for all the institutions, the European Data Protection Supervisor will act as an independent supervisory authority*

*The Clean Hydrogen JU's websites may provide links to third-party sites. Since we do not control them, we encourage you to review their privacy policies.*

***2.E-services***

*An e-service on this website is a service or resource made available on the internet in order to provide you with easy and effective access to information and to manage the organisation of events within the Mission Innovation Hydrogen Valley Platform Initiative (hereinafter 'the Platform').*

***3.Information contained in a specific privacy statement***

*A specific privacy policy statement will contain the following information:*

- *The identity and contact details of the controller*
- *The contact details of the data protection officer*
- *What information is collected, for what purpose, the technical means by which the Clean Hydrogen JU collects personal information in order to fulfil a specific purpose, as well as the legal basis*
- *To whom your information is disclosed, if applicable*
- *How you can access your information, verify its accuracy and, if necessary, correct it, delete it, restrict the processing or where applicable, object to processing or to data portability*
- *In specific cases, you will also have the right to withdraw your consent*
- *How long your data is stored*
- *What security measures are taken to safeguard your information against possible misuse or unauthorised access*
- *Whom to contact if you have queries or complaints*

***4.Contacting us***

*Our "Contact" tag includes one contact e-mail address, which activate your email software and open a new email to be addressed to a specific mailbox. When you send such a message, your personal data is collected only in order to reply.*

*If the team responsible for the mailbox is unable to answer your question, it will forward your email to another service. You will be informed, via email, about which service your question has been forwarded to.*

*If you have any questions about the processing of your email and related personal data, do not hesitate to include them in your message.*

***5.Safeguarding information***

*The personal data and information related to the Platform is stored on the servers of Clean Hydrogen JU, the operation of such servers abides by Clean Hydrogen JU's security decisions and provisions established for this kind of servers and services. This includes the Common IT Security Policy, implemented by the Clean Hydrogen JU applying the security measures described in the Commission Decision (EU Euratom) 2017/46 of 10 January 2017 concerning the security of communication and information systems in the European Commission, Standards on Information Systems Security, Complementary information systems security policy and control measures as applied to specific applications by respective system owners.*

***6.Your rights***

*When your personal information is processed by Clean Hydrogen JU, you have the right to request access to your personal data and rectify inaccurate or incomplete personal data. Under certain conditions, you have the right to ask the deletion of your personal data or restrict its use. Where applicable, you have the right to object to our processing of your personal data, on grounds relating to your particular situation, at any time, and the right to data portability. To submit your request you can email the data controller at the following address: Data-Protection@clean-hydrogen.europa.eu . In your email, clearly state your request and include the URL of the webpages your request refers to.*

*In accordance with article 25 Regulation (EU) 2018/1725, the Clean Hydrogen JU may restrict the application of the rights enshrined in Articles 14 to 21, 35 and 36, as well as Article 4 as per Decision of the Governing Board of the Fuel Cells and Hydrogen 2 Joint Undertaking of 26 May 2020 laying down internal rules concerning restrictions of certain rights of data subjects in relation to processing of personal data in the framework of the functioning of the FCH 2 JU.*

*I.* ***Specific Privacy Statements***

*Download here the Specific Service Privacy Statement for data collected via online subscriptions for updates about the Platform.*

*Download here the Specific Service Privacy Statement for data collected via the Matchmaking contact form.*

*Download here the Specific Service Privacy Statement for data collected via the online "H2V Questionnaire".*

## IV. Matchmaking - Privacy Statement

***Specific Service Privacy Statement For data collected via the Matchmaking Contact Form within the Mission Innovation Hydrogen Valley Platform Initiative***

*This privacy statement explains how the Clean Hydrogen Joint Undertaking (here after referred to as Clean Hydrogen JU) uses the information you give to us while registering in the Matchmaking contact form within the Mission Innovation Hydrogen Valley Platform Initiative (hereafter, 'the Initiative') and the way we protect your privacy.*

***1.Context and Controller***

*This specific online service consists of an online contact form made available on the Mission Innovation Hydrogen Valley Platform Initiative website and whose aim is to promote the matchmaking opportunities among stakeholders and Hydrogen Valleys by connecting registered stakeholders with selected Hydrogen Valleys. In this service, the registered party (stakeholder) sends a message including personal information (see section 2 in this document) to a Hydrogen Valley Representative. While registering, your personal data will be collected and further processed for this purpose, which is further detailed below under point 2.*

*The relevant processing operation is under the responsibility of the Executive Director of the Fuel Cells and Hydrogen 2 Joint Undertaking, acting as the Controller.*

*As this online service collects and further processes personal data, "Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC" is applicable.*

***2.What personal information do we collect, for what purpose and through which technical means?***

***Types of personal data***

*The **personal data collected** and further processed by the Clean Hydrogen JU in relation to this online service are data necessary to enable the contact between the registering party (stakeholder) and the Hydrogen Valleys:*

- *First name**
- *Last name**
- *E-mail address**

*(*Replies to these questions are mandatory since all information requested is necessary for enabling the matchmaking service. In case of a no reply, the message cannot be forwarded to the corresponding Hydrogen Valley as no possibility to maintain the contact back will be feasible).*

- *Position (Information on the Position is being collected only if submitted voluntarily)*
- *Country (Information on the Country is being collected only if submitted voluntarily)*
- *Your message (Any personal data included in your message is being collected only if submitted voluntarily)*

***Purpose and technical means***

*The purpose of processing personal data for the online service is to promote the matchmaking opportunities among stakeholders and Hydrogen Valleys by connecting registered stakeholders (data subjects) with selected Hydrogen Valleys within frame of the purpose the Mission Innovation Hydrogen Valley Platform Initiative, which is to unlock the full benefits of the use of hydrogen across the global economy.*

***3.Legal basis***

*The **legal basis** for the organisation of the subscription process, including its management and the related processing, is Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020).*

*In line with Article 5.1(a) of Regulation (EU)2018/1725 the processing operation is necessary for the performance of tasks carried out in the public interest on the basis of the Treaties or other legal instruments adopted on the basis thereof.*

*The lawfulness of the processing of personal data is also based on Article 13 (1) of the Directive 2002/58/EC whereby the data subject has unambiguously given its consent, which corresponds to the data subject's consent in Article 5.1(d) of Regulation EC 2018/1725.*

*By clicking on "send" to this online service, the applicant will be considered to have given his or her consent to the processing of their data in the context of the H2V Matchmaking service.*

***Lawfulness of the processing operation***

*The data processing is considered lawful because it is necessary:*

- *For the performance of tasks carried out on the basis of Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)*

***4.Who has access to your information and to whom is it disclosed?***

*For the purposes detailed above access to your personal data is given to the following persons:*

- *Internally authorized staff of the Clean Hydrogen JU*
- *Authorised staff of the Hydrogen Valley Representative*

***5.How do we protect and safeguard your information?***

*The personal data and information related to the Platform is stored on the servers of Clean Hydrogen JU, the operation of such servers abides by Clean Hydrogen JU's security decisions and provisions established for this kind of servers and services. This includes the Common IT Security Policy, implemented by the Clean Hydrogen JU applying the security measures described in the Commission Decision (EU Euratom) 2017/46 of 10 January 2017 concerning the security of communication and information systems in the European Commission, Standards on Information Systems Security, Complementary information systems security policy and control measures as applied to specific applications by respective system owners.*

***6.What are your rights regarding your personal data?***

*As a data subject, you have the following rights under the Regulation (EU) 2018/1725:*

*1. You have the right of access to your personal data and to relevant information concerning how we use it.*

*2. You have the right to rectify your personal data.*

*3. Under certain conditions, you have the right to ask that we delete your personal data.*

*4. Under certain conditions, you have the right to ask that we restrict the use of your personal data.*

*5. You have the right to object to our processing of your personal data, on grounds relating to your particular situation, at any time.*

*6. You have the right not to be subject to a decision based solely on automated processing of data, including profiling, if such decision has legal effect on you, except for certain situations, such as entering into a contract (as required by Articles 14-16 & 24 of the Regulation).*

*7. You have the right to withdraw your consent at any time by sending your request by email to Data-Protection@clean-hydrogen.europa.eu.*

*Information on actions taken following data subject requests to exercise rights shall be provided without undue delay and in any case within one (1) month of receipt of the request. In case of complex or voluminous requests, this period may be extended by another two (2) months, in which case Clean Hydrogen JU will inform the data subject. In case data subjects wish to exercise their rights, they should send an email to the Clean Hydrogen JU's Data Protection Officer at Data-Protection@clean-hydrogen.europa.eu.*

*Possible restrictions as laid down in Article 25 of the Regulation may apply.*

***7.How long do we keep your data?***

*All personal data will be kept for a general retention period of five years.*

*If you do not agree with this, please contact the Controller by using the contact information below and by explicitly specifying your request.*

***8.Contact information***

*If you have any questions relating to this online service, or on your rights, please contact the support team operating under the responsibility of the Controller, using the following e-mail: regions@clean-hydrogen.europa.eu.*

***9.Recourse***

*Should you have any complaint or concern you may contact: the Data Protection Officer of Clean Hydrogen JU at Data-Protection@clean-hydrogen.europa.eu*

*In addition, as a data subject, you have a right to recourse to the European Data Protection Supervisor (EDPS) at any time by e-mail to edps@edps.europa.eu or a letter to the EDPS postal address:*

*Rue Wiertz 60 - MO 63*

*B-1047 Bruxelles*

*Belgium*

*Tel: +32 2 283 19 00*

*Fax: +32 2 283 19 50*

*Email: edps@edps.europa.eu*

*For more information on the EDPS, please consult their website: https://www.edps.europa.*

## V. H2V Questionnaire - Privacy Statement

***Privacy Statement for data collected via the online "H2V Questionnaire" within the Mission Innovation Hydrogen Valley Platform Initiative***

*This privacy statement explains how the Clean Hydrogen Joint Undertaking (here after referred to as Clean Hydrogen JU) uses any information you give to us while completing the survey in the online "H2V Questionnaire" within the Mission Innovation Hydrogen Valley Platform Initiative (hereafter, 'the Initiative') and the way we protect your privacy.*

***1.Context and controller***

*This privacy statement applies to the information collected via the online survey "H2V Questionnaire". While registering, your personal data will be collected and further processed for the purposes detailed below under point 2.*

*The relevant processing operation is under the responsibility of the Executive Director of the Clean Hydrogen Joint Undertaking, acting as the Controller.*

*As this online service collects and further processes personal data, 'Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC' is applicable.*

***2.What personal information do we collect, for what purpose and through which technical means?***

***Types of personal data***

*The personal data collected and further processed by the Clean Hydrogen JU in relation to the online survey "H2V Questionnaire" are data necessary for the due implementation of the Initiative:*

- *First name**
- *Last name**
- *Professional email address**
- *Professional phone number (including country code)**

*(* Replies to these questions are mandatory since all information requested is necessary for the participation in the "H2V Questionnaire". In case of a no reply, the participation in the "H2V Questionnaire" will not be accepted.)*

***Purpose and technical means***

*The purpose of processing personal data for the participation in the "H2V Questionnaire" is to identify the contact persons in charge of the participating projects in order to be able to communicate with them strictly regarding the Initiative; as well as the creation of a database of experts with contact details for future communications regarding the Initiative.*

***3.Legal basis***

*The **legal basis** for the organisation of the online survey "H2V Questionnaire!, including its management and the related processing, is Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014- 2020).*

*In line with Article 5.1(a) of Regulation (EU)2018/1725 the processing operation is necessary for the performance of tasks carried out in the public interest on the basis of the Treaties or other legal instruments adopted on the basis thereof. The lawfulness of the processing of personal data is also based on Article 13 (1) of the Directive 2002/58/EC whereby the data subject has unambiguously given its consent, which corresponds to the data subject's consent in Article 5.1(d) of Regulation EC 2018/1725. By submitting the survey, the participant will be considered to have given his or her consent to the processing of their data in the context of the online survey "H2V Questionnaire".*

***Lawfulness of the processing operation***

*The data processing is considered lawful because it is necessary:*

- *For the performance of tasks carried out on the basis of Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, in corroboration with Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)*

***4.Who has access to your information and to whom is it disclosed?***

*For the purposes detailed above access to your personal data is given to the following persons:*

- *Internally authorized staff of the Clean Hydrogen JU*

***5.How do we protect and safeguard your information?***

*The personal data and information related to the Platform is stored on the servers of Clean Hydrogen JU, the operation of such servers abides by Clean Hydrogen JU's security decisions and provisions established for this kind of servers and services. This includes the Common IT Security Policy, implemented by the Clean Hydrogen JU applying the security measures described in the Commission Decision (EU Euratom) 2017/46 of 10 January 2017 concerning the security of communication and information systems in the European Commission, Standards on Information Systems Security, Complementary information systems security policy and control measures as applied to specific applications by respective system owners.*

***6.What are your rights regarding your personal data?***

*As a data subject, you have the following rights under the Regulation:*

*1. You have the right of access to your personal data and to relevant information concerning how we use it.*

*2. You have the right to rectify your personal data.*

*3. Under certain conditions, you have the right to ask that we delete your personal data.*

*4. Under certain conditions, you have the right to ask that we restrict the use of your personal data.*

*5. You have the right to object to our processing of your personal data, on grounds relating to your particular situation, at any time.*

*6. You have the right not to be subject to a decision based solely on automated processing of data, including profiling, if such decision has legal effect on you, except for certain situations, such as entering into a contract (as required by Articles 14-16 & 24 of the Regulation).*

*7. You have the right to withdraw your consent at any time by sending your request by email to Data-Protection@clean-hydrogen.europa.eu.*

*Information on actions taken following data subject requests to exercise rights shall be provided without undue delay and in any case within one (1) month of receipt of the request. In case of complex or voluminous requests, this period may be extended by another two (2) months, in which case Clean Hydrogen JU will inform the data subject. In case data subjects wish to exercise their rights, they should send an email to the Clean Hydrogen JU's Data Protection Officer at Data-Protection@clean-hydrogen.europa.eu.*

*Possible restrictions as laid down in Article 25 of the Regulation may apply.*

***7.How long do we keep your data?***

*All personal data will be kept for a general retention period of five years. If you do not agree with this, please contact the Controller by using the contact information below and by explicitly specifying your request.*

***8.Contact information***

*If you have any questions relating to this online service, or on your rights, please contact the support team operating under the responsibility of the Controller, using the following e-mail: regions@clean-hydrogen.europa.eu.*

***9.Recourse***

*Should you have any complaint or concern you may contact: the Data Protection Officer of Clean Hydrogen JU at Data-Protection@clean-hydrogen.europa.eu.*

*In addition, as a data subject, you have a right to recourse to the European Data Protection Supervisor (EDPS) at any time by e-mail to edps@edps.europa.eu or a letter to the EDPS postal address:*

*You have right of recourse at any time to the Data Protection Officer of the Clean Hydrogen JU (Data-Protection@clean-hydrogen.europa.eu). You have the right to submit a complaint at any time directly to the European Data Protection Supervisor:*

*Rue Wiertz 60 - MO 63*

*B-1047 Bruxelles*

*Belgium*

*Tel: +32 2 283 19 00*

*Fax: +32 2 283 19 50*

*Email: edps@edps.europa.eu*

*For more information on the EDPS, please consult their website: https://www.edps.europa*

## VI. Platform Legal Notice

*The information on this site is subject to a disclaimer (external link), a copyright notice (external link) and rules related to personal data protection (external link).*

***1.Disclaimer***

*The Clean Hydrogen Joint Undertaking maintains this website to enhance public access to information about its Mission Innovation Hydrogen Valley Platform Initiative. Our goal is to keep this information timely and accurate. If errors are brought to our attention, we will try to correct them.*

*However the Clean Hydrogen Joint Undertaking accepts no responsibility or liability whatsoever with regard to the information on this site.*

*This information is:*

- *of a general nature only and is not intended to address the specific circumstances of any particular individual or entity*
- *not necessarily comprehensive, complete, accurate or up to date*
- *sometimes linked to external sites over which the Clean Hydrogen Joint Undertaking have no control and for which it assumes no responsibility*
- *not professional or legal advice (if you need specific advice, you should always consult a suitably qualified professional)*

*Please note that it cannot be guaranteed that a document available online exactly reproduces an officially adopted text. Only the European Union legislation published in paper editions of the Official Journal of the European Union is deemed authentic.*

*It is our goal to minimize disruption caused by technical errors. However, some data or information on our site may have been created or structured in files or formats that are not error-free and we cannot guarantee that our service will not be interrupted or otherwise affected by such problems. The Clean Hydrogen Joint Undertaking accepts no responsibility with regard to such problems incurred as a result of using this site or any linked external sites.*

*This disclaimer is not intended to limit the liability of the Clean Hydrogen Joint Undertaking in contravention of any requirements laid down in applicable national law nor to exclude its liability for matters which may not be excluded under that law.*

***2.Copyright notice***

*The Clean Hydrogen Joint Undertaking's reuse policy is implemented by the Commission Decision of 12 December 2011 on the reuse of Commission documents. Unless otherwise indicated (e.g. in individual copyright notices), content owned by the Joint Undertaking on this website is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence. This means that reuse is allowed, provided appropriate credit is given and changes are indicated.*

*You may be required to clear additional rights if a specific content depicts identifiable private individuals or includes third-party works. To use or reproduce content that is not owned by the Joint Undertaking, you may need to seek permission directly from the right holders. Software or documents covered by industrial property rights, such as patents, trademarks, registered designs, logos and names, are excluded from the reuse policy and are not licensed to you.*

***3.The Clean Hydrogen Joint Undertaking logo***

*The Clean Hydrogen Joint Undertaking logo is protected under copyright laws and therefore, any unauthorised registration and use of signs or trademarks containing imitations of the Clean Hydrogen Joint Undertaking's logo is prohibited.*

***4.The Mission Innovation (MI) logo***

*The Mission Innovation (hereinafter MI) logo requires concordance with the Mission Innovation Branding Guidelines.*

***5.Rules of use of Clean Hydrogen Joint Undertaking logo by third parties***

*Rules of use by third parties of the Clean Hydrogen Partnership logo are available here (external link).*

***6.Rules of use of MI logo by third parties***

*The MI logo cannot be used by third parties without the prior explicit authorisation of the MI Secretariat.*

*Requests for authorization can be submitted by email to secretariat@mission-innovation.net.*

*The conditions of use are the following:*

- *there is no likelihood of the user of MI's logo being confused with the JU itself*
- *the logo is not used to imply or suggest unintended endorsement or promotion of the objectives and activities of the user by MI*
- *the logo is not used in connection with objectives or activities which are incompatible with the aims and principles of the Platform*

*Each request to use the logo needs to be examined individually to ascertain whether it satisfies the criteria established here above.*

***7.Personal Data Protection***

*The Clean Hydrogen Joint Undertaking is committed to user privacy. The policy on protection of individuals with regard to the processing of personal data by the Union institutions and bodies is based on Regulation (EU) 2018/1725.*

*Further information is available at our data protection page.*

## VII. Members area Legal Notice

*The information on this site is subject to a disclaimer (external link), a copyright notice (external link) and rules related to personal data protection (external link).*

***1.Disclaimer***

*The Clean Hydrogen Joint Undertaking maintains this website to enhance public access to information about its Mission Innovation Hydrogen Valley Platform Initiative. Our goal is to keep this information timely and accurate. If errors are brought to our attention, we will try to correct them.*

*However the Clean Hydrogen Joint Undertaking accepts no responsibility or liability whatsoever with regard to the information on this site.*

*This information is:*

- *of a general nature only and is not intended to address the specific circumstances of any particular individual or entity*
- *not necessarily comprehensive, complete, accurate or up to date*
- *sometimes linked to external sites over which the Clean Hydrogen Joint Undertaking have no control and for which it assumes no responsibility*
- *not professional or legal advice (if you need specific advice, you should always consult a suitably qualified professional)*

*Please note that it cannot be guaranteed that a document available online exactly reproduces an officially adopted text. Only the European Union legislation published in paper editions of the Official Journal of the European Union is deemed authentic.*

*It is our goal to minimize disruption caused by technical errors. However, some data or information on our site may have been created or structured in files or formats that are not error-free and we cannot guarantee that our service will not be interrupted or otherwise affected by such problems. The Clean Hydrogen Joint Undertaking accepts no responsibility with regard to such problems incurred as a result of using this site or any linked external sites.*

*This disclaimer is not intended to limit the liability of the Clean Hydrogen Joint Undertaking in contravention of any requirements laid down in applicable national law nor to exclude its liability for matters which may not be excluded under that law.*

***2.Copyright notice***

*The Clean Hydrogen Joint Undertaking's reuse policy is implemented by the Commission Decision of 12 December 2011 on the reuse of Commission documents. Unless otherwise indicated (e.g. in individual copyright notices), content owned by the Joint Undertaking on this website is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence. This means that reuse is allowed, provided appropriate credit is given and changes are indicated.*

*You may be required to clear additional rights if a specific content depicts identifiable private individuals or includes third-party works. To use or reproduce content that is not owned by the Joint Undertaking, you may need to seek permission directly from the right holders. Software or documents covered by industrial property rights, such as patents, trademarks, registered designs, logos and names, are excluded from the reuse policy and are not licensed to you.*

***3.The Clean Hydrogen Joint Undertaking logo***

*The Clean Hydrogen Joint Undertaking logo is protected under copyright laws and therefore, any unauthorised registration and use of signs or trademarks containing imitations of the Clean Hydrogen Joint Undertaking's logo is prohibited.*

***4.The Mission Innovation (MI) logo***

*The Mission Innovation (hereinafter MI) logo requires concordance with the Mission Innovation Branding Guidelines.*

***5.Rules of use of Clean Hydrogen Joint Undertaking logo by third parties***

*Rules of use by third parties of the Clean Hydrogen Partnership logo are available here (external link).*

***6.Rules of use of MI logo by third parties***

*The MI logo cannot be used by third parties without the prior explicit authorisation of the MI Secretariat.*

*Requests for authorization can be submitted by email to secretariat@mission-innovation.net.*

*The conditions of use are the following:*

- *there is no likelihood of the user of MI's logo being confused with the JU itself*
- *the logo is not used to imply or suggest unintended endorsement or promotion of the objectives and activities of the user by MI*
- *the logo is not used in connection with objectives or activities which are incompatible with the aims and principles of the Platform*

*Each request to use the logo needs to be examined individually to ascertain whether it satisfies the criteria established here above.*

***7.Personal Data Protection***

*The Clean Hydrogen Joint Undertaking is committed to user privacy. The policy on protection of individuals with regard to the processing of personal data by the Union institutions and bodies is based on Regulation (EU) 2018/1725.*

*Further information is available at our data protection page.*

***8.Responsibility***

*a) Roland Berger and Inycom neither control nor guarantee the absence of viruses or other elements in the Contents that may cause alterations in your computer system or in the electronic documents and files stored in your computer system.*

*b) Roland Berger and Inycom exclude, to the full extent permitted by law, any liability for damages of any kind that may be due to the presence of viruses or the presence of other elements in the contents that may cause alterations in the computer system, electronic documents or user files.*

*c) Roland Berger and Inycom do not guarantee the legality, reliability and usefulness of the contents, and therefore excludes, to the full extent permitted by law, any liability for damages of any kind that may be due to the transmission, dissemination, storage, availability, reception, obtaining or access to the contents, as well as their content.*

*d) Roland Berger and Inycom do not absolutely guarantee the truthfulness, accuracy and completeness of the contents, although it will take the necessary precautions to control these aspects.*

# Annex II: Survey content

## CHAPTER 1. FUNDAMENTALS

**1.1 First name (Primary project contact)**

**1.2 Last name (Primary project contact)**

**1.3 Name of your organization**

**1.4 Website of your organization**

**1.5 Professional email address**

**1.6 Professional phone number (including country code)**

**1.7 Name of the hydrogen valley project (b)**

**1.8 Website of the hydrogen valley project**

**1.9 Short description of the project (max. 500 characters)**

**1.9 Description**

**1.10 In which country is your main project located?(b)-**

**1.11 In which city is your main project located?**

**1.12 What are the google maps coordinates of your primary project location?(b)**
*On your computer, open Google Maps and insert the name or address of your organization. You will see a red pin and a taskbar on the left page. The coordinates are indicated in the middle of the taskbar, symbolized by five blue dots.*

Latitude

Longitude

**1.13 Do you have a second location for your project?**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.14 Does the area of activity of your project go beyond the immediate surroundings of your main location? / Does your project have a greater regional impact (e.g. on an entire region)?(c)**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.15 Is your project a cross-border hydrogen valley?- None -YesNoI don't know**

**1.16 Who is the lead developer entity of your project? (a)(b)**

**1.17 Who are the project partners in the following value chain steps?(c)**

Production

Transportation/Storage/Distribution

End-use

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.18 Are there projects that are in direct connection to your project?**

**1.19 How has your project partnership evolved in the last two years?** Unchanged/Increased/Parties left the consortium

**1.20 Which route describes best the main source of hydrogen supply for your project?(c)**

H2 from electrolysis (electricity from RES or nuclear)

H2 from fossil fuels

H2 from fossil fuels with CCUS

H2 from bio feedstocks

None of the above

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.21 How much H2 is produced within the project per year on average in the following years?(c)**

Average relates to the yearly average H2 production

First full year of operation tonnes/year

Year of maximum built-out tonnes/year

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.22 Who are your main hydrogen offtakers?**

Industry

Mobility

Energy

**1.23 What is the investment volume over the project lifetime?(a)(c) CAPEX (M EUR)**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.24 How many staff members are approx. working on the project development (full-time equivalent personnel) across all partners?(c)**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.25 What are the main drivers of the project?(c)**

Political (industrial / ecological)

Economic

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.26 What was the start date of the project preparation? When was the project initiated?(c)**
*The project preparation phase indicates the identification of all project work and the definition of rough goals and objectives. Additionally, a decision making process for managing further planning and development of the project is being established.*

Date

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.27 What is/was the (planned) date for the FID?**
*The financing closure indicates the securing of all project-related financial resources.*

Date

**1.28 What is/was the (planned) start date of construction?**
The project implementation phase indicates the realization of the project vision and plans.

Date

**1.29 What is/was the (planned) start of operations?** (c)
The project finalization phase indicates the completion of all activities related to the project implementation.

Date

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.30 What is the current status of the project?(c)**
i.e. which phase is the project currently in?

Project concept developed/Feasibility study ongoing/pre-FID (planning, engineering, de-risking, etc.)/post-FID (financing, tendering, etc.)/Under construction/Fully operational

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**1.31 Do you have any plans to expand your project activities beyond the currently envisoned scope?**

**1.32 Who are your project supporters (e.g. political sponsors)?(a)(c)**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**(a)** More detailed questions will follow on this topic.

**(b)** Your answer to this question will be used for a short profile of your project on the platform and will therefore not be anonymized.

**(c)** Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box at the end of this question.

## CHAPTER 2. VALUE CHAIN & TECHNOLOGY

### 2.1 What and how much technology do you use/intend to use along the value chain?(c)

2.1.1 Primary energy sourcing

- Electricity from renewable energy sources
- Electricity from fossil fuels
- Industrial gas
- Natural gas
- Coal
- Oil
- Nuclear
- Other

2.1.2 H2 production

- Total power load of electrolysers installed
- Water electrolysis with PEM electrolyser
- Water electrolysis with ALK electrolyser
- Water electrolysis with high-temp SOE electrolyzer
- SMR
- SMR with CC(U)S
- Partial oxidation
- Coal gasification
- E-fuels
- Byproduct
- External sourcing from outside the H2 valley
- Other

2.1.3 H2 storage / conversion

- Cylinder
- Cavern
- Other

2.1.4 H2 transport / distribution

Pipeline

Trucking

Ship

Other

2.1.5. H2 Distribution

HRS 700 bar (number of stations)

HRS 700 bar total dispension capacity

HRS 350 bar (number of stations)

HRS 350 bar total dispension capacity

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**2.2 Which end-use application does your production have?(c)**

2.2.1 User mobility (hydrogen fuel cell electric or hydrogen combustion or hydrogen hybrid vehicles)

Cars

Buses

Trucks

Forklifts

Trains

Ships

Other

2.2.2 Energy (power, heat)

Stationary fuel cells for distributed generation

Hydrogen supply to gas-fired power plants

Hydrogen supply for injection into gas grid

Other

2.2.3 Industrial use as feedstock

Supply to chemical industry (e.g. fertilizer production) (tons/year)

Supply to refineries (tons/year)

Supply to steel industry (tons/year)

Supply to other industries

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**(a)** More detailed questions will follow on this topic.

**(b)** Your answer to this question will be used for a short profile of your project on the platform and will therefore not be anonymized.

**(c)** Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box at the end of this question.

## CHAPTER 3. PREPARATION

**3.1 How much time did you plan to prepare the project?**

Less than 6 months/6-12 months/12-24 months/24-48 months/More than 48 months

**3.2 How much time did you actually need to prepare the project?**

Less than 6 months/6-12 months/12-24 months/24-48 months/More than 48 months

**3.3 How much time did you plan to obtain your major construction and deployment permits?**

Less than 6 months/6-12 months/12-18 months/18-24 months/More than 24 months/Other

**3.4 Have you already obtained any major construction or deployment permit?**

**3.5 How many stakeholders are involved in preparing the project, i.e. how many parties/entities played a major role in shaping the project concept and getting it off the ground (technically, financially, legally, in terms of project management, etc.), incl. companies, public authorities, research & academia, NGOs/NPOs, etc.?(c)**

Less than 5/5-10/10-20/20-30/More than 30

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**3.6 How many staff members across all stakeholders are involved in preparing the project (full-time equivalent personnel) across all partners?**

Less than 5/5-10/10-20/20-30/More than 30

**3.7 What share of the overall budget are you spending for the preparation phase?**

The share of the overall budget can be related to the CAPEX investment or any other appropriate measure

< 5%/5 - 10%/10 - 15%/15 - 20%/> 20%

**3.8 What is the main funding source for the preparation phase?(c)**

Public/Private/PPP (Public-Private-Partnership)/Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**3.9 What is the name of the lead entity in the preperation phase?**

**What kind of stakeholder is it?**

Public authority/Research and academia/Company - private enterprise/Industrial association/NGO-NPO/Other

**3.10 Do you have major commercial risk sharing mechanisms between the project stakeholders in place?(c)**

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**3.11 Do you have a more or less formal and dedicated governance mechanism in place?**

**3.12 What are key regulatory provisions along the value chain supporting your project (e.g. exemptions from taxes/levies/duties, FIT for H2 injection to gas grid, quotas for sustainable fuels)?(c)**

Political

Economic

Social

Technological

Environmental

Legal

*Your answer in the free text field of this question will be displayed in the analysis section of the platform with no association to your project. If you want to stay anonymous, please make sure that you do not use your project name, location or other identifiers of your project in your answer.*

**3.13 What are the main regulatory hurdles that you have to overcome?(c)**

Missing or inadequate permitting procedures

Lack of H2 experience of permitting authorities

Missing / too strict safety regulation in the context of H2 deployment

Taxes/levies/duties on electricity from RES

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**3.14 Do you have clarity on all required permitting procedures?**

**3.15 Do you have all permitting procedures for your project in place?**

**3.16 What are the main activities in the preparation phase?**

Business model / business case development

Partnering (with technology providers etc.)

Technical feasibility

Permitting processes

Financing preparation

Other

**3.17 What are the main hurdles and barriers in the preparation phase?(c)**

Technological readiness / technological performance (e.g. availability, efficiency, duration/lifetime)

Raw material supply issues

General supply chain issues

Value chain disruptions

Regulatory provisions

Permitting and authorization procedures

Political backing and buy-in

Funding

Experienced staff

Local public acceptance

Project's business case

Stakeholder cooperation

Risk sharing mechanisms between project partners

Project governance model

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**3.18 What are the key success factors for the preparation phase?(c)**

Business model / business case development

Partnering (with technology providers etc.)

Technological readiness / technological performance (e.g. availability, efficiency, duration/lifetime)

Regulatory provisions

Permitting and authorization procedures

Political backing and buy-in

Funding

Experienced staff

Local public acceptance

Project's business case

Stakeholder cooperation

Risk sharing mechanisms between project partners

Project governance model

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**(a)** More detailed questions will follow on this topic.

**(b)** Your answer to this question will be used for a short profile of your project on the platform and will therefore not be anonymized.

**(c)** Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box at the end of this question.

## CHAPTER 4. COMMERCIAL & FINANCING

**4.1 What was the total budget planned? (CAPEX over total project life)** **(c)** [million EUR]

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**4.2 What is the total budget spent to date? (CAPEX over total project life)** [million EUR]

**4.3 What is the overhead share of your project? (% of total CAPEX investment)**
The overhead share of a budget refers to ongoing business expenses not directly attributed to creating a product or service, such as utilities, taxes or accounting fees. [%]

**4.4 What are the main public and private sources for your budget?(c)**

Public budget

Private budget

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**4.5 What funding instruments are you using for CAPEX?(c)**

% of Grants / subsidies

% of Equity

% of Debt

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**4.6 What funding instruments are you using for OPEX?(c)**

% of Grants / subsidies

% of Equity

% of Debt

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**4.7 What is the duration between your first application of grants/funding to actual spending of money?** [months]

**4.8 How many public funding schemes did you apply for?**

Please specify (optional)

**4.9 How many funding schemes do you get funding from?**

Please specify (optional)

**4.10 What is your (anticipated) average cost of electricity?**

< 0.02 EUR / kWh

0.01 - 0.05 EUR / kWh

0.06 - 0.10 EUR / kWh

0.10 - 0.15 EUR / kWh

0.15 - 0.20 EUR / kWh

0.20 - 0.25 EUR / kWh

0.25 - 0.30 EUR / kWh

> 0.30 EUR / kWh

**4.11 What is your (anticipated) average cost of natural gas?**

< 10 EUR / MWhC

10 - 20 EUR / MWh

20 - 30 EUR / MWh

30 - 40 EUR / MWh

40 - 50 EUR / MWh

50 - 60 EUR / MWh

> 60 EUR / MWh

**4.12 What is your (anticipated) average cost of green H2? (If you source externally)**

< 2 EUR / kg

2 - 4 EUR / kg

4 - 6 EUR / kg

6 - 8 EUR / kg

8 - 10 EUR / kg

10 - 12 EUR / kg

12 - 14 EUR / kg

> 14 EUR / kg

**4.13 Do you make use of blue H2 in your production?**

**4.14 Do you make use of fossil fuel-based H2?**

**4.15 What is your sales price of H2?**

< 1 EUR /kg

1-2 EUR /kg

2-3 EUR /kg

3-4 EUR /kg

4-6 EUR /kg

6-8 EUR /kg

8-10 EUR /kg

> 10 EUR /kg

**4.16 What share of hydrogen production volume is already committed to offtakers in year one of operations?** [%]

**4.17 Are there price commitments to offtakers?**

**4.18 How competitive are your remaining products or services to offerings based on conventional technology?**

1 - Considerably more expensive than existing offering

2 - Within close range of existing offering

3 - At par with existing offering

4 - Slightly more competitive than existing offering

5 - Strong competitive offering

**4.19 What are the main activities in the commercials and financing phase?**

Searching for eligible public subsidy / grant schemes

Applying for public subsidy / grant schemes

Negotiating with private investors

Building a financial model

Preparing documentation for a due diligence process

Putting a de-risking framework in place

Other

**4.20 How big was the effort in terms of time and resources per main activity?**

Searching for eligible public subsidy / grant schemes

Applying for public subsidy / grant schemes

Negotiating with private investors

Building a financial model

Preparing documentation for a due diligence process

Putting a de-risking framework in place

**4.21 What are the main hurdles and barriers for the commercials and financing phase?(c)**

Securing public financial support (subsidy / grant)

Securing private investors

Building a financial model

Securing customer commitments to de-risk the financial model

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**4.22 What are the key success factors for the commercials and financing phase?(c)**

Applying for public subsidy / grant schemes

Securing private investors

Securing public financial support (subsidy / grant)

Building a financial model

Preparing documentation for a due diligence process

Putting a de-risking framework in place

Securing customer commitments to de-risk the financial model

Other

*Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box.*

**(a)** More detailed questions will follow on this topic.

**(b)** Your answer to this question will be used for a short profile of your project on the platform and will therefore not be anonymized.

**(c)** Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box at the end of this question.

## CHAPTER 5. IMPACT & ANALYSIS

**5.1 How much CO2 has been reduced by your project? (c)** [tonnes/year]

**5.2 What are the employment benefits of this project? How many jobs are created over the project lifetime?**

During project preparation

During project operation

**5.3 What industrial policy elements, e.g. in terms of local production of equipment and sub-systems (electrolyzers, FCEVs, fuel cells, major components, etc.) are part of your H2 valley?**

**5.4 What are additional project benefits communicated to project stakeholders? (c)**

*Your answer in the free text field of this question will be displayed in the analysis section of the platform with no association to your project. If you want to stay anonymous, please make sure that you do not use your project name, location or other identifiers of your project in your answer.*

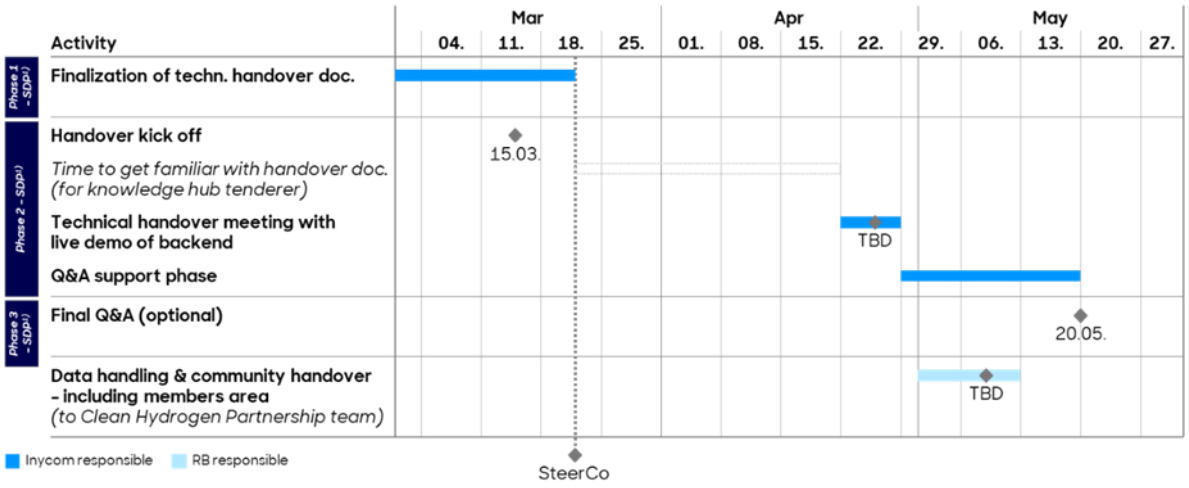
**(a)** More detailed questions will follow on this topic.

**(b)** Your answer to this question will be used for a short profile of your project on the platform and will therefore not be anonymized.

**(c)** Your answer to this question will be used for a detailed profile of your project on the platform and will therefore not be anonymized. If you do not want this information to be public, please tick the box at the end of this question.

# Annex III: Handover plan

**Figure 37: Handover plan**




# Annex IV: Hydrogen Valley award criteria

To transparently select potential winners, a rating of each Valley along six key criteria was developed – Only clean H2 projects from Europe are considered for the award (see criteria and scoring methodology below). The scoring is based on the data provided by the Valleys in the survey.

**Figure 38: Criteria and scoring methodology**

| Criteria | Description | Scoring methodology | Max. points |
|---|---|---|---|
| **Extent of value chain coverage** | • How many parts of the value chain are covered? | • **One point per value chain step** (primary energy, production, storage, transport, distribution) covered | • **5** |
| **Hydrogen production volume** | • What is the (planned) annual hydrogen production volume? | • Highest production volume gets 5 points, lowest production volume gets 1 point<br>• **Relative scale** between all participants | • **5** |
| **Hydrogen end uses variety** | • How many different end-use sectors are covered?<br>• How many different end-uses per sector? | • 3 points for **all 3 end uses**<br>• 2 points for **2 end uses**<br>• 1 points for **1 end use** | • **3** |
| **Project finalization** | • What is the (anticipated) project finalization year? | • Earliest finalization project gets 5 points, latest year gets 1 point<br>• **Relative scale** between all participants | • **5** |
| **Stakeholder landscape** | • How many stakeholders are involved in the project?<br>• Does the stakeholder landscape cover various backgrounds (i.e., public/private, investors, off-takers, etc.)? | • **1-2 points according to subjective assessment** after RB analysis related to strengths and seniority of involved partners<br>• **One point per value chain step** (production, transportation/storage/distribution, end-use) | • **5** |
| **Project innovativeness** | • Does the project support an innovative hydrogen use case? | • **Subjective assessment** after RB analysis | • **5** |

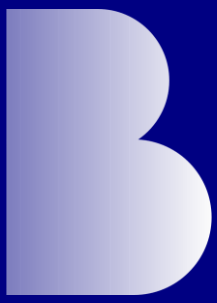
Note: Necessary conditions for all participants: I) Valley is located in Europe II) Valley follows a clean hydrogen production pathway III) Valley is at least pre-FID-stage (planning, engineering, de-risking)

# Annex V: Hydrogen Valley certificate

The «Hydrogen Valley certificate» should further raise the public awareness of the H2.0 Valley platform, but to also honour the project development achievements of the Hydrogen Valleys. In the light of the 13th Clean Energy Ministerial and 7th Mission Innovation (CEM13/MI7) ministerial in Pittsburgh, USA (September 21-23), the Clean Hydrogen Parrtnership and Roland Berger developed a "H2.0 Valley certificate" for Hydrogen Valleys on the platform. The design reflects the colours and style of the Clean Hydrogen JU and the Mission Innovation initiative.

This certificate shall be provided to all existing Hydrogen Valley projects on the current platform as a label of recognition and fulfillment of all key criteria defining a Hydrogen Valley today. All projects displayed on the Hydrogen Valley platform are welcome to use the Mission Innovation Hydrogen Valley certificate in their official communication and project presentations.

**Figure 39: Hydrogen Valley certificate**



**Roland Berger GmbH**
Sederanger 1
80538 München
Germany

www.rolandberger.com