HYGRID

FLEXIBLE HYBRID SEPARATION SYSTEM FOR H2 RECOVERY FROM NG GRIDS

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WP10 – Dissemination and Exploitation

D10.3
Dissemination and Communication Plan updated 3

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	
CON	Confidential, only for members of the Consortium	

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(**) indicate the acronym of the partner that prepared the document

Content

1. EXECUTIVE SUMMARY (3 pages max. all points)

1.1. Description of the deliverable content and purpose

Among the task foreseen in the HyGrid project, dissemination and communication activities play a special role to spread the scientific knowledge and technological developments. This package of activities will increase visibility of both project and partners, and will guarantee its optimal acknowledgement and future exploitation, as they will address the main European forums and platforms on the project's topic.

The aim of this deliverable is to describe the group of actions that has been and will be carried out in the project to disseminate and communicate the goals and results of the HyGrid project and the requirements and collaboration needed to execute them.

In this sense, it does contain the description of the different chosen communication channels and tools to be used to reach different audiences.

It is thought to be updated based on following activities during the project – such as a stakeholder analysis - which will help identifying and keeping contact with a definite set of authoritative stakeholders. For this purpose, the plan will be reviewed based on the project evolution and of the acquired new knowledge that will allow adding new dissemination opportunities.

This plan already includes activities realized so far in the last three years of the project and in the future, it can be a guide to support the consortium to carry out the dissemination activities by using the right material and channels, not deviating from agreed schedules and procedures.

The activities to accomplish the dissemination campaign are also addressed, including a look into the communication materials, both realized and to be realized.

1.2. Brief description of the state of the art and the innovation brought

Dissemination and communication activities are aimed to:

- Widespread the project results among the stakeholders to generate awareness and interest for the proposed solution,
- Obtain valuable feedback on intermediate project results so as to get a comprehensive validation from stakeholders covering all the addressed market sectors (also linked to exploitation strategy),

The dissemination and communication plan was developed to provide an overview on the dissemination strategy and focuses on the following main themes:

- The main results to be disseminated throughout the project,
- The dissemination channels and instruments to be used,
- The major stakeholders and targets groups to focus on,
- The main dissemination actions for each partner,
- The HyGrid scheduled events,
- The templates for the follow up of the dissemination and communication activities.

The project encourages the maximum publicity for its activities and the greatest possible involvement of external actors in its discussions. This plan also presents the first results of the Dissemination Activities. The report, which is third version, will be updated at the end of each project (M48) in the frame of the Period 3 and Final Periodic reports to the FCH JU.

Dissemination in this project has been designed to complete the activities performed in all working groups by fulfilling the following purposes:

- Improving the efficiency of the communication between the project members. This is achieved by organizing the three-month teleconferences, six-month meetings, reporting and monitoring the progress of the main important aspects of the mutual projects between the members and also circulating the newsletter and updating the website. These have been scheduled in the dissemination plan and will be materialized in the course of this project.
- Improving the efficiency of communication between HyGrid consortium and external research and industrial institutes is another main goal of the project. This is achieved by organizing the workshops, attending the conferences, updating the website and sending selected newsletters to the targeted audiences. These will be achieved during the project.
- Ensuring communication with the general public by providing general presentations, newsletters and put them available on the public website. Moreover, the final conference at the end of project will serve this purpose. These will be completed by circulating the newsletters dissemination report at the end of project.

2. Introduction

2.1. Brief description of the project

Project General Objective

The key objective of the HyGrid project is the design, scale-up and demonstration at industrially relevant conditions of a novel membrane-based hybrid technology for the direct separation of hydrogen from natural gas grids. The focus of the project will be on the hydrogen separation through a combination of membranes, electrochemical separation and temperature swing adsorption to be able to decrease the total cost of hydrogen recovery. The project targets a pure hydrogen separation system with power and cost of < 5 kWh/kg_{H2} and < 1.5 $€/kg_{H2}$. A pilot designed for >25 kg/day of hydrogen will be built and tested.

Project Technical Objective

To achieve this, HyGrid aims at developing novel hybrid system integrating three technologies for hydrogen purification integrated in a way that enhances the strengths of each of them: Membrane separation technology is employed for removing H_2 from the "low H_2 content" (e.g. 2-10 %) followed by electrochemical hydrogen separation (EHP) optimal for the "very low H_2 content" (e.g. <2 %) and finally temperature swing adsorption (TSA) technology to purify from humidity produced in both systems upstream (Figure 1). The objective is to give a robust proof of concept and validation of the new technology (TRL 5) by designing, building, operating and validating a prototype system tested at industrial relevant conditions for continuous and transient loads.

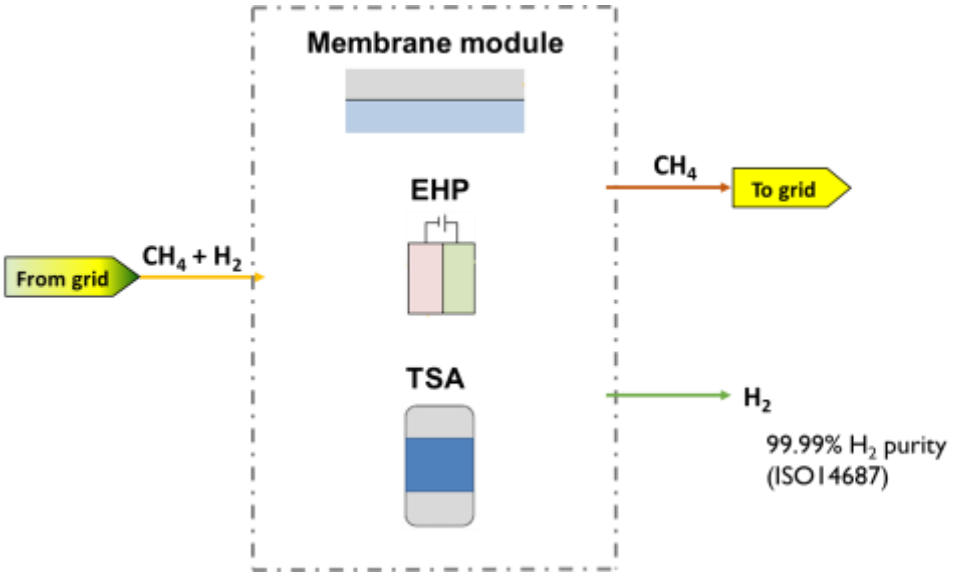

Figure 1. HyGrid concept

The system will describe and evaluate the system performance for the different pressure ranges within 0.03 to 80 bar (distribution to transmission) and test the concept at pilot scale in the 6-10 bar range.

HyGrid will evaluate hydrogen quality production according to ISO 14687 in line not only with fuel cell vehicles (Type I Grade D) but also stationary applications (Type I grade A) and hydrogen fuelled ICE (Type I grade E category 3).

Summarizing, HyGrid will address the following issues:

- Development of a hydrogen separation system capable of targeting low (2-10%) and very low (<2%) H2 blends in natural gas;
- Development of novel stable, high performance and long durability membranes for hydrogen recovery from low hydrogen content streams;
- Development of more stable sealing methods for the membranes at moderate temperatures and reductive atmospheres;
- The further development of EHP for hydrogen recovery from very low concentration streams.
- The further development of TSA for water removal from hydrogen/water streams;
- The integration of the new membranes, TSA and EHP in novel hybrid system to achieve high recoveries with low energy penalties;
- Technical validation of the novel modules at lab scale;
- The complete energy analysis of the new HyGrid technology applied to different scenarios. This includes:
  - recovery of hydrogen from low concentration streams (2% -10%) up to 99.99% H2 purity (ISO14687) in the whole range of pressures of the Natural Gas Network;
  - Different configurations/combinations of the three separation technologies (Membranes, TSA and EHP).
- The validation of the novel hybrid system at prototype scale (TLR 5);
- The environmental LCA of the complete chain;
- The dissemination to stakeholders: the scientific community to share knowledge and the industrial community to support the exploitation of the project results towards market use;
- The exploitation of the results including the definition of a targeted and quantified development roadmap to bring the technology to the market.

Project Benefits

HyGrid will deliver:

- A novel membrane based hybrid technology for the direct recovery of hydrogen from low H_2 concentration streams (2%-10%) in natural gas grids up to 99.99% H_2 purity (ISO14687) in the whole range of pressures of the Natural Gas Network with a reduced energy penalty compared to currently available techniques.
- The hyGrid technology can be used a different scales and conditions. It can be easily integrated along the whole gas network as well as in other gas streams (industrial processes) to recover H_2 with high purity (≥5N).
- An overall decrease in the cost of the technology compared with other available technologies (i.e., tube trailer, Pressure Swing Adsortium, electrochemical hydrogen purification.

The HyGrid technology will provide a route to:

- Increase the value of hydrogen blended into the natural gas grid, improving the economics of central hydrogen production from excess renewable energy couples with natural gas grid injection.
- Reduced cost, and therefore increased use of hydrogen from very dilute hydrogen streams in energy and transport applications.
- Further applications could be found in separating hydrogen from mixtures produced in chemical or biological processes, where it otherwise would be used to generate heat or even be vented.

2.2. Data management, evolution of the dissemination and potential challenges

Evolution through the project

The process of dissemination has started right from the beginning of the project in May 2016 and will cover all the activities until the end of this project and even afterwards. The dissemination of the project is planned in three stages:

- The first initial 12 month includes the elementary internal dissemination and external communication and will focus mostly on the implementation of the dissemination strategy.
- The second stage covers the activities in the second and third year of the project and the main targets in this stage are the internal and external disseminations with special focus on communicating with the external audience: i) internal dissemination between the WPs, ii) creating an effective network between all participants, iii) the update of the website. The public deliverable and presentation of internationals events as well as scientific workshops will be the other highlights of this stage. A key event at this stage is the industrial workshop organized by SAES at M24.
- The Final stage of the dissemination starts on the month 37 and continues until the end of project and the main events in this stage is the final conference and publication of press release and articles, which allow sharing the results of the whole projects with public.

Potential challenges

At a more general level, the following challenges can be faced:

- A common level of confidentiality of the results could not be agreed by all partners, thus the reports for external audiences and even for public could possibly need more time to be finalized than it is expected.
- On the technical side, providing a feedback regarding the challenges and potentials associated with preparation and testing the membranes and their results is a crucial part of the dissemination plan related to the membrane activities. The same is true with regard to the two other technologies (electrochemical hydrogen separation (EHP) and temperature swing adsorption (TSA)).
- For the process scale-up and techno-economic analysis point of view, the hybrid technology proposed in HyGrid is new. Optimal integration strategies should analysed to identify the best configuration to minimize the energy penalty and the cost of the new system and to identify the desirable components properties for each scale of application.

In order to address and overcome the above-mentioned challenges, the HyGrid consortium has already put in place mechanisms to ensure strong communication among leaders of technical activities/WPs and the dissemination and communication of the project in both directions: any adjustment, change or confirmation of the project technical milestones will be duly communicated to the external channels devised in this dissemination plan; while feedbacks from external stakeholders will be taken into account in the technical development of the project.

At the same time, dissemination activities will be strongly linked and aligned to the project exploitation actions, to ensure that relevant stakeholders are approached and engaged for business purposes, e.g. from market requirements, to market segmentation, from willingness to pay to preliminary market validation, but also potential business partnerships or agreements leading to exploitation and replication opportunities. To this end, the Dissemination Manager will work closely to the Exploitation Manager to ensure continuous alignment between the two strategies along the project.

3. Basic Concept and approach

3.1. Dissemination strategy and subject of dissemination

All dissemination activities have to support the above-mentioned objectives, which the HyGrid project aims to fulfil. In order to effectively communicate with the stakeholders, the dissemination strategy is based on the following points:

- **Planning activities** to disseminate project results to target audiences;
- **Involving** the entire **consortium**;
- **Raising Awareness** and interest for the proposed innovative solution;

Already during the first months of the project the main activities of dissemination have been focused on this strategy.

The main planned actions have foreseen and will foresee:

- The design of the HyGrid brand (i.e. logo, visual identity, title and subtitle);
- Stakeholders analysis to improve the dissemination strategy and increase visibility of project results;
- Website: with a public and a private area.
- Dissemination materials such as: brochures, template for project documents and power point presentation, posters, video etc.
- Planning participation in relevant events, exhibitions, workshops, specialized international meetings, etc.;
- A media campaign consisting of public relations, articles in magazines, e-journals, forums, mailing lists, press releases, social networks, etc;
- Examining and establishing synergies with other projects to help extending and replicating the scope of dissemination results to new fields both Nationally and internationally;

One stronghold of the strategy is that dissemination activities are being conducted in order to actively **engage all consortium partners**.

- TECNALIA is the lead partner for dissemination. It is working to ensure proper information dissemination to support the full communication of the project results
- The partners are involved by defining and planning their dissemination efforts in order to provide a structured, dynamic yet controllable approach to the communication aims and results.

HyGrid is employing different channels to spread information. As a requirement, a high level of professional design, production, and distribution/ promotion of dissemination material will be kept (website, brochures, power point presentation, reusable illustrations etc.).

Concerning the distribution two main channels are to be followed:

- Hand-distribution at designated conferences, workshops, or EC events attended by HyGrid partners (and external stakeholders).
- Electronic distribution by email to interested parties and through the accessible project website to all users.

Concerning demonstrations:

Project results are demonstrated by all partners in a variety of ways, including the presentation of HyGrid at relevant events such as: conferences, exhibitions, poster sessions, workshops, communication material distribution opportunities, etc.

The search for relevant international events has started already at the beginning of the project, it is still ongoing, and it will continue until end of project. The events selected for attendance are posted on the project communication website in order to promote an active participation by both partners and contacts.

3.2. Dissemination management

The main target of the dissemination management is to communicate the HyGrid project progress and its achievements to the target audiences. Implementation of the dissemination and communication strategies is the main responsibilities of the Dissemination Manager. He will coordinate the dissemination activities and he is the contact point for the partners for:

- keeping track of the dissemination actions performed by the partners (publications database)
- informing and selecting relevant dissemination events (EU and world conferences) for partners to attend and present project results
- keeping track and selecting most relevant publications journals and reviews for partners (impact factor).

The main actors of dissemination within the project are the TECNALIA as a dissemination manager and TU/e as a coordinator of the whole project. Following are the main actors on the Dissemination and Exploitation Work activities, through all consortium members support the activities according to Grant Agreement:

- TUE
- HYET
- HT&S

They fulfill their tasks from WP10 according to Grant Agreement and are coordinated by TU/e and TECNALIA.

The dissemination leader is working side by side with the exploitation coordinator, who plans the industrial exploitation of HyGrid and whose main tasks consist of:

- identifying the most important stakeholders of the HyGrid solutions and assess their position towards the project's results in order to set up engagement strategies (stakeholder analysis).
- defining a successful exploitation strategy for the results achieved by the project. The development and implementation of the IPR strategy is also a relevant input for the exploitation plan. The main mission of the exploitation strategy has to fulfill is to ensure that partners are free to benefit from their complementarily, roles and synergies but also experience and capabilities to proficiency utilize the project results.
- Updating and informing the FCH JU about the intention and activities of the Consortium to protect the knowledge, know-how and technologies arising from the HyGrid project. This is crucial for ensuring and coordinating the licensing of any technology that the consortium decide to commercialize as an outcome of the project.

3.3. Timing

The process of dissemination has started at the first month of the project in May 2016 and has continued by monitoring and reporting the collaboration of HyGrid partners in terms project planning, approval and sharing the results.

The dissemination of the project is planned in three stages as follow:

The first Initial Stage was implemented until first 12 month and included the elementary internal dissemination and external communication via creating the website and updating of the news. The main target of this stage was the implementation of the dissemination strategy planning.

The Mid Stage of dissemination started on the month 13 and continued until the month 36. In this stage the main targets were the internal and external disseminations with special focus on communicating with the external audience: i) internal dissemination between the WPs, ii) creating an effective network between all participants, iii) the update of the website. The public deliverable and presentation of internationals events as well as scientific workshops were the other highlights of this stage. A key event in this stage was the industrial workshop organized at M24.

The Final stage of the dissemination will start on the month 37 and continues until the end of project and the main events in this stage is the final conference and publication of press release and articles, which allow sharing the results of the whole projects with public.

The dissemination activities according to timing schedule are summarized in the table hereafter.

Table 1. Timing of the HyGrid project.

Month	Subject	Participants
M1-M12	Project communication material, website, e-brochure, flyers, press release on project objectives, creation of the database forum contact, development of dissemination plan.	TUE, TECNALIA, HYET, all partners
M13-M36	Website contents update, communication/presentation at international events, awareness campaign (network), press release on project activities, publication of papers and articles, organization of industrial workshops, stakeholder identification.	TUE, TECNALIA, HYET, all partners
M37-M48	Website updated with public deliverable, presentation at international events, organization the final conference, publication of leaflet, papers and articles, press release for wider public, contact with concerned stakeholders, final dissemination report	TUE, TECNALIA, HYET, all partners

4. Target Audience

4.1. Main categories

This section of the dissemination plan enlists stakeholders, concerned organizations and important multipliers of the process industries and institutions in Europe. The target audience of the HyGrid project subdivides into four main groups:

- ***Internal audience*.** The members of the project need to stay well informed about the progress of the project. Adequate internal dissemination can also ensure that the project has a high profile.

- ***Other project-audience*.** Sharing project results with coordinators and key actors of projects dealing with similar topics, both within the program and in others, will ensure visibility and uptake of results, and provide opportunities to receive feedback, share experiences and discuss joint problems and issues.

- ***External stakeholders:***
  - Persons, who will benefit from the outcomes of the project, as well as "opinion makers" such as teachers, researchers, librarians, publishers, online hosts, etc., can act as catalysts for the dissemination process.
  - Companies, in order to penetrate the market and to satisfy the market needs and demands with HyGrid technology sooner after the end of project.

The stakeholder analysis which will be run by HYET to identify the most important stakeholders of the HyGrid solution(s) and assesses their position towards the project's results in order to set up engagement strategies. The partners will jointly brainstorm about relevant stakeholder groups for HyGrid. All stakeholders will be invited to participate in an online survey, which will be designed to measure stakeholder characteristics, like their interest, attitude, influence and knowledge relevant for the project. Based on the outcome of the survey, more targeted dissemination and exploitation actions can be implemented and relationships can be built with key stakeholders to the project.

- **The community – wide users and policy makers.** Certain elements of the project (such as guidelines, methods, evaluation criteria etc.) can be used by a wider audience than the specific target groups. These elements can be shared with the wider community through articles, conference presentations, case studies, etc. Reaching the policy audience for dissemination activities will include for example national or local stakeholders, which are responsible for many decisions and policies, fostering the creation of new jobs, increasing Europe's independence from imports and providing a fast growing European, more performant industry.

Table 2. Target groups.

Target group	Communication material	Communication channel
Companies	HyGrid website News/newsletter Press release HyGrid electronic brochure HyGrid paper brochure	Exchange of links with related project/websites Industrial Journals/magazines Invitation to HyGrid events Direct link on website of partners involved Hygrid website Partners communication channels
Researchers	Communication in international conferences (oral/written) Posters Scientific papers	International conferences Scientific journals Direct link on the website of partners involved HyGrid website

	News/newsletter HyGrid electronic brochure HyGrid paper brochure	Social network: LinkedIn, twitter Partners communication channel Invitation to HyGrid events
Wide audience and policy makers	News/newsletter HyGrid articles HyGrid brochure	HyGrid Website Popular Journals/magazines Invitation to HyGrid events Social network: LinkedIn, twitter, facebook, ResearchGate

4.2. Dissemination within the HyGrid partners (internal dissemination)

The internal dissemination has a special significance for the progress of the project and coordinates the science and communication activities between HyGrid partners. The classification of the internal dissemination forms is following:

Project presentations and protocols:

The project presentations during the project provide the common material and the partial results of the WP groups. These presentations are intended for the internal use. They are the basis for the final report and presentations of the results.

Meetings:

The periodical physical meeting during the project time and are intended for the project status review and information exchange. They take place each six's month at the different science centers of Europe and organized by project members by turns.

Telephone and Skype conferences scheduled according to the round-inquiry and confirmation.

The telephone conferences take place each third month of the project between all the partners to coordinate the actual work on the WPs.

Mailings:

The important task of the dissemination team is the coordination of the flow of information between the HyGrid partners. In this context, following aspects should optimize an efficient information exchange:

- The mailing list includes all the participants related to the information about each given WP.
- The dissemination manager (TECNALIA) is included in all the important conversations between the partners (in form of "cc")
- The subject of all the letters is conformed to the contents (this is helpful for better classification of emails under the given subjects in the final database)
- The HyGrid coordinator and dissemination manager develop the regular mailings-newsletter to inform the partners about the status of the publication of results, discussion of the each HyGrid partners with external institute and person related to the topics and activities covered in HyGrid project. Some typical questioner can be prepared and the HyGrid partners provide their answers which will be collected and circulated later to inform all partners about the developments and potentials

Data management forum:

The HyGrid partners will discuss the creation of the data management forum as confidential part of the HyGrid website to provide direct communication and continual information exchange between the partners. This confidential part of the HyGrid website should be created by M3.

Recording of the correspondence (database of communications):

All the HyGrid correspondence to which the dissemination manager has access, will be recorded to follow the working process and will be used to prepare the periodical reports as well as the final report.

4.3. Dissemination beyond the HyGrid partners (external dissemination)

An important part of the external dissemination is the stakeholder analysis that directly defines an efficiency of the exploitation of the project results. A systematic and result driven stakeholder analysis is being carried out under the lead of the project partner HYET. The stakeholder analysis will identify the most important stakeholders of the HyGrid solution(s) and assess their position towards the project's results in order to set up engagement strategies. The partners have jointly brainstorm about relevant stakeholder groups for HyGrid. All stakeholders are being invited to participate in an online survey, which will be designed to measure stakeholder characteristics, like their interest, attitude, influence and knowledge relevant for the project. The different stakeholders will be grouped in four different groups based on the importance they have for the project and their interest in the outcomes of HyGrid (Figure 2). The main target is the effective and efficient involvement of the wider stakeholder groups for targeting dissemination and communication actions as well as exploitation strategy development.

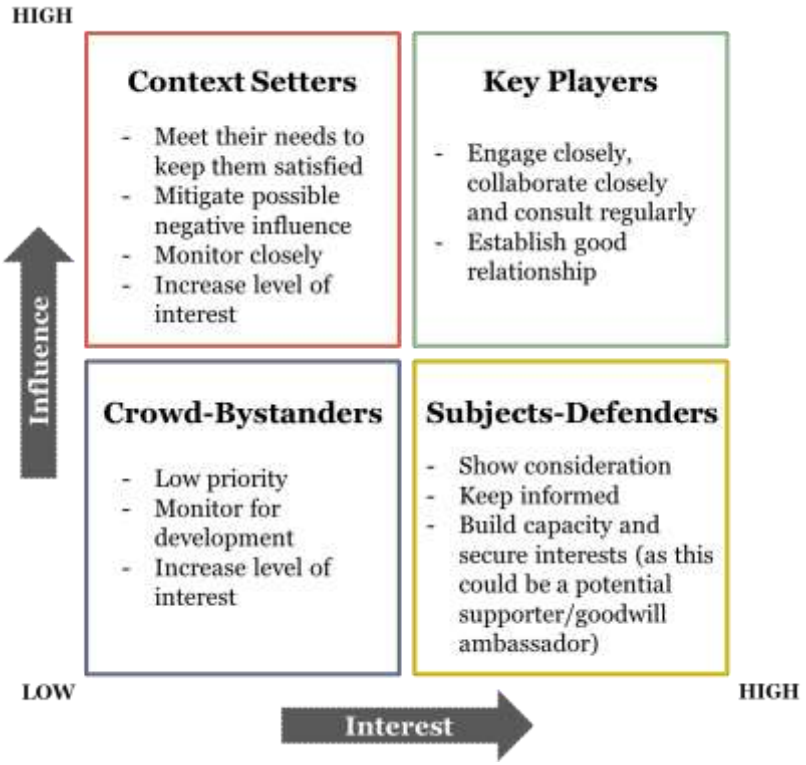

Figure 2. Stakeholder analysis grid based on influence and interest

Different dissemination activities will be set-up and implemented to address the above-illustrated target groups, according to their level of interest and influence on project results, using appropriate channels and language, in order to maximize impact.

The main part of the external dissemination will be the international conferences, congresses and other events (fairs), which will be attended from all partners in order to ensure a wider dissemination of the outcomes and create awareness about the project.

Two dissemination workshops have been planned during the project. They will permit an exhaustive acquaintance with the achievements of the project. First workshop was organized by SAES and took place in Lainate (near Milan) on May 17th, 2018 (see https://www.hygrid-h2.eu/content/publications). A HyGrid final conference/workshop will be organized at M48 at HYGEAR.

On the other side, the foreground developed at HyGrid will be updated after each consortium meeting (i.e. newsletter).

The use and dissemination of the foreground is an important deliverable of the WP10 related to spreading the information for the potential stakeholders. The deliverable will be update continuously during the project. The listed target groups and organizations interested organizations and consortia will be addressed particularly in order to optimize the joint efforts towards collaboration and communication as well as dissemination and exploitation in specific areas of interest, namely fields related to membrane separator for H_2 recovery and direct separation of hydrogen recovery from natural gas grids.

These target groups will include in particular:

- European Energy Research Alliance (**EERA**), Partners of HyGrid are also partners of EERA and this will help the dissemination of HyGrid's results within EERA.
- **European Technology Platforms, Joint Technology Initiatives and Public-Private Partnerships**: ETPs, JTIs and PPP are considered important platforms where results of HyGrid will be advertised to the industry. Key PPP is the **Sustainable Process Industry through Resource and Energy Efficiency** (SPIRE). TECNALIA is founding member of the A.SPIRE, the association representing the private sector, while HYG and TUE are members of the same Association. Key JTI is the **FCH JU**. HyGrid participant HYG and HYET are members of the NEW Industry Grouping and TECNALIA is member of N.ERGHY.
- **Other associations, research groups & networks:** Partners of HyGrid are partners of other target groups. Some target groups have already demonstrated interest in HyGrid and have shown their willingness to disseminate the results, i.e.:
  - **European Membrane Society** (EMS) which is dealing with membrane science and technology in Europe.
  - **The European Gas Research Group** (GERG) promoting the development of innovative solutions that place the gas infrastructure at the heart of the energy system. Letter of Support is attached. EDP, as vice-president of GERG will perform dissemination to National and International natural gas suppliers.
  - **The EC Network of Excellence for H_2 Safety** "HySafe", contributes to the safe transition to more sustainable development in EU by enabling the introduction of H_2 technologies and applications. Tecnalia is member. Letter of Support attached.
- **Other industrial and research networks/sectors** in which H_2 is used or generated and/or membrane reactors could profit of the HyGrid results. Partners of HyGrid have strong links to different industrial sector (i.e. glass, metallurgy, etc.).

5. Communication and dissemination of the project results

The communication strategy is based on the prioritization of certain stakeholder groups. The consortium, based on their joint competences, can decide what external stakeholders and at which stage are really needed to be communicated about what aspect of the project. The stakeholder analysis will complement this prioritization by gathering information from all relevant stakeholders, among others by assessing their interest, potential contribution and influence on the project. In the beginning of the project, there will be generic news to share. The communication will be mainly focused on making stakeholders aware of HyGrid and its potential role in advancing the sustainability and resource efficiency in the implementation of the hydrogen econimy. The website and periodic newsletters containing generic information about the project are among the main communication measures to be deployed in this stage of the HyGrid project.

As HyGrid progresses, project results become available and more insights are obtained in, which stakeholder will be more closely involved in the project. The information, which becomes available, provides the opportunity to involve external stakeholders into the project by changing their perceived interest and attitude in the project with targeted information. The dissemination measures to be deployed thus depend on the position a stakeholder has towards the project, following the scheme given in Figure 2 above.

5.1. Branding: graphical templates and branding elements

A set of the branding elements like graphical templates will be created and designed in order to ensure a professional level of communication and presentation of the project. The logo has been already created in the first month of the project. The main target of the HyGrid branding is to accentuate the scientific and industrial potential of the project and to reach its recognition in the target audience. The below listed branding elements have already been provided or will be provided in the course of the project.

- HyGrid logo
- HyGrid flyers
- HyGrid posters
- HyGrid non-confidential PowerPoint presentation
- HyGrid newsletter
- HyGrid templates

The flyers, posters, non-confidential presentations and the newsletters will be uploaded in the Hygrid public website already released in July 2016 (www.hygrid-h2.eu).

In order to fully consider the requirements of the FCH JU funded projects, the logotype of the HyGrid project and the logotypes of the FCH JU and H2020 will be included in every relevant publication (e.g. conference posters and presentations) and relevant visibility will be ensured for the FCH JU funding in dissemination materials. Various dissemination tools have been already created or are under preparation in this stage of the project.

5.2. Website and social networks

The HyGrid project activities will be distributed through external website to improve communication. The HyGrid website is considered to be the main communication tool for the project and its outcomes. It has been designed and structured to inform the target audience and stakeholders in a simple yet effective way. The website is online since mid-July 2016 and it will be regularly updated.

The website has two different parts. The public part (http://www.hygrid-h2.eu/) and the private part. Both are hosted and maintained by TECNALIA (Dissemination Manager). The goal of the HyGrid Websites is to promote and disseminate all project activities and results (public section) and to satisfy partners' needs and internal communication (reserved area). The website now has been fully developed.

The above-mentioned public area of the website is devoted to the dissemination purposes. Results will be described in a language accessible to non-expert readers and will host links both to the scientific information sites as well as to the relevant organization and the supporting group websites (incl. links to the partners' websites). The website will give evidence to the project abstracts, main results (incl. public deliverables) and news, which will also be sent via email newsletters to the registered users.

The social media like Facebook, LinkedIn, Twitter, ResearchGate have proven to be valuable distribution and communication channels for the science and industrial projects. News, press releases, article announcements and photos can be posted on a regular basis to LinkedIn groups such as Gas separation membranes (https://www.linkedin.com/groups/5155910) and Membrane reactors: (https://www.linkedin.com/groups/8513530) administrated by TUE and/or TECNALIA. Other specific groups (i.e. "Chemical Engineering Magazine", "The Process Engineer", "The Chemical Engineer") will be also considered.

The social media dissemination can also give a good opportunity to receive a feedback from the science and industrial society in a short space of time.

The most important time for the start and active work of these accounts will be the time period that publishable project results are available.

All the project partners will provide information about the results and activities they want to be posted in the social networks. The HyGrid partners will join the LinkedIn and/or Facebook groups if not yet done and invite members from their network to join the groups, follow the news and spread the information about the project.

The main targets of the dissemination via website and social networks are as follow:

- to gather the required information and feedbacks to optimize the rest of project work-flow
- to connect the consortium with market as well as potential industrial partners for communicating the aspects needed to assess the potential of exploitation
- to identify the cross-sectorial opportunities and address the obstacles to maximize the project impact
- to promote dissemination of the project outcomes
- to identify the additional exploitation opportunities of the project results

5.3. Press and media

To ensure the transparency of the project within the stakeholder communities and other target audiences, the list of relevant online and print media will be sourced as potential channels for distribution of idea and results of the project. To provide an attention to the expected project outcomes, the pool of the relevant media will be spanned from research and technology channels like specialized journals to business and industry information platforms.

All project partners will exploit their own press offices and contacts in order to ensure a publicity of the project outcomes. The group leaders are responsible for establishing media contacts and partnerships, especially in the role of newsmaker for interested journalists. Dissemination of the project via press and

media occurs using of press releases, events, announcement in the journals and professional groups in the social media. The e-newsletter will be set every 6 months to approx. 200 contacts.

The list of potential relevant scientific, industrial and trade journals as well as popular channels will be created and updated with the assistance of all partners using their professional networks and publications database (see also Chap. 6 and annexes). Press releases and external newsletters describing the latest results will be extended as soon as intermediate project results appear and could be presented. These announcements are important to illustrate milestones of the project.

6. Dissemination of the project results

HyGrid pays attention to ensure achieving a significant impact through the project's results. In so doing, a wide set of dissemination and exploitation activities has been planned, considering the connection between the two activities, to increase the potential impact of the project. Exploitation and dissemination activities will therefore be proceeding in parallel right from the beginning of the project.

In order to design an effective dissemination and properly begin with the exploitation phase, specific actions will be tailored during the project time, for instance adapting the materials from relevant partners to be further developed in this project and thus expand the possibility to be connected with new audiences and partners and create new potentials or participation in the events according to the specific development stage of the project. Concerning the exploitation, the partnership has already a clear idea of how to commercially exploit the project results, and during the project this exploitation strategy will be fine- tuned and adapted according to the users' feedback, in order to arrive at a final exploitation plan covering the commercial agreements.

The industry associations play a big role for the dissemination of the HyGrid project results. The project management will contact the relevant European and world-wide industrial associations and inform the interested associations about the HyGrid activities.

The list of the potential industrial associations will be updated from all the HyGrid partners. The following list enumerates the initial main important associations to contact:

Table 3. Initial list of potential industrial associations.

Organization	Web address
EERA – European Energy Research Alliance	http://www.eera-set.eu/
EMS – European Membrane Society	http://www.emsoc.eu
Fuel Cell and Hydrogen Joint Undertaking	http://www.fch.europa.eu/
GERG - European Gas Research Group	http://www.gerg.eu/
HySafe - EC Network of Excellence for Hydrogen Safety	http://www.hysafe.org/
Industry Grouping Hydrogen Europe (former NEW-IG)	http://hydrogeneurope.eu/
N.ERGHY – New European Research Grouping on Fuel Cells and Hydrogen.	http://www.nerghy.eu/
SPIRE – Sustainable Process Industry through Resource and Energy Efficiency	http://www.spire2030.eu/
European Gas Industries	
Other industrial and research networks/sectors in which H2 is used or generated and/or membrane reactors could profit of the HyGrid results	

The general public will be informed about the HyGrid project and its results via various print and online media inclusive scientific journals and magazines, external newsletters, leaflets and press releases, flyers and website, which transmit information about HyGrid and create awareness about the project. The external conference and presentations as traditional dissemination methods and verbal ways to promote the project will be organized. Furthermore, the other way to transmit the information will be workshops and online discussions to reach the higher level of the engagement from stakeholders.

Subsequently the following activities are foreseen:

- Increase of link exchange with other relevant projects
- Promotional material for the HyGrid tools (fact sheets, ppts, etc.)

Reaching out to the industrial partners are very important for this project. Therefore, specific effort will be made to communicate the project results to the industrial sphere (SMEs and Large Enterprises), so as to foster the commitment from these stakeholders towards a real uptake of related technologies, innovations and services in Europe and worldwide. To this end, the Consortium will put in place an strategy with specific dissemination activities dedicated to Industry, including: publication of dissemination materials with main project results, a dedicated industrial dissemination workshop (mentioned above), etc.

6.1. Publications and work with the scientific and industrial community

HyGrid will follow an open and active publication policy through publications in scientific journals. The publications will be made available via Open Access platforms according to the Green and the Golden Routes. As for the Green route, the publications will be made available through the institutional repositories of each partner of the consortium and on the website of HyGrid. As for the Golden route, the publications will be made available Open Access directly at the Publisher. A publication fee is required in this case (for most of the Publishers) and this will be covered by the Author Institutions.

The Dissemination Manager will maintain a list of publications issued by participants. List of potential journals for publications includes, e.g. J. Power Sources; International Journal of Energy Research; International Journal of Natural and Applied Science; Chemical Engineering Journal; Angewandte Chemie, International Edition; Nature Materials.

A series of Publications are foreseen during the project, such as:

- scientific publications (peer reviewed articles on scientific journals, including open access ones);
- conference contributions (invited, oral and posters);
- leaflets/brochures that will be distributed at topical events;
- newsletters targeted both at experts and potential customers with the projects results update;
- mailing lists (and press releases) for journalists and trade associations to stimulate article editing on newspapers;
- general audience articles will be submitted to magazines and others (e.g. CORDIS news, EurActiv.com).

Scientific publications: the most interesting and important results from a scientific and technological point of view will be submitted to the high ranked peer reviewed journals for publication. Review papers will be also prepared on specific topics and submitted for publication to suitable international reviews. These will be selected based on the article topic to be checked with the scope of the conventional peer reviewed journals and Open Access publications. Publishing on Open Access will provide the additional benefit of strengthening the reputation of these journals. Still concerning scientific publications, in selecting international conferences for presenting HyGrid results, priority will be given to those organized and hosted by EU countries whose proceeding are published in international peer reviewed journals.

For effective knowledge sharing before dissemination, the pre-prints of all publications will be made available to the project partners in a reserved area of the project website. In preparing the publications and selecting the journals and conferences, in particular the content of the Communication strategies will be kept as the base so as to produce targeted information and to convey clear, simple and straightforward messages in order to ensure the dissemination of the results efficiently accomplished at local, national and European level.

A list of relevant scientific journals is detailed in Annex 1. This list will be provided and updated by the project partners. It builds the basis to contact and acquire partners for media cooperation.

6.2. Leaflet and promotional materials

The leaflet with HyGrid results and describing of the progress of the project will be published and presented on the final conference. The leaflet will be designed with the recognizable HyGrid branding elements and will be an important part of the final report.

Additionally, the flyers and invitations will be printed and sent to the events and also will be included in the conference bags and/or presented on the publication desks. The flyers can be also distributed by the external project partners or cooperating projects. These activities ensure that the target audience will be informed in full measure and on time.

Another promotional material are commercial posters, banners, roll-ups and conference posters that should present the project results and display this information clearly visible at HyGrid events. It is probably also reasonable to use the invitations for the events as promotional materials for this purpose, which visualize the results of the dissemination strategy and consider a successful outcome.

Also, the newsletter and press releases belong to the dissemination materials, which promote the project and engage target audiences. The project newsletter will provide a flexible structure with short key messages with interactive links to more detailed information. It will use a pdf format that allows to place and download it on the website and is suited for direct mailing to the stakeholders. Regular newsletter ensures that project partners stay involved in the content development. The content of the newsletter is provided by the project partners. Its first draft with the proposed topics and news will be sent to all partners for their feedback with comments and suggestions. The final version of each newsletter should be sent to all partners, which will provide this information to their networks in due time.

The content of newsletters includes three main topics:

- Information about intermediate results of the project and their potential industrial exploitation;
- Information about upcoming events and their target audience to make the stakeholders interested to participate in;
- Announce about scientific publication from / about HyGrid project with links to the media / scientific journal.

6.3. Events. Final conference and scientific impact

Internal and external events are the major part of project dissemination and information strategy.

Two thematic workshops have been foreseen, where a comprehensive overview on the achievements of the project will be offered to interested stakeholders and users at various academia, industry and public levels. First workshop was organised by SAES in Lainate (Milan) on May 17th, 2018. will organize a HyGrid industrial workshop in Italy (Rome or Milan) at M24, with the aim of spreading the results of the project to relevant industrial stakeholders at different level. The Final Project Conference will be

organised by HYGEAR in Arnhem (The Netherlands) at M48 to present final project results, as well as involve and mobilize all relevant stakeholders.

External National as well international conferences, congresses, workshops, seminars and other events (i.e. FCH JU Programme Review Days, fairs) have been and will be attended from all partners to ensure a wider dissemination of the outcomes. Conferences to be attended will include regular events conducted in the frame of the above-mentioned target groups and conferences organized or sponsored by organizations such as the EERA on CCS, European Gas Research Group or European BioGas Association among others.

Also, industry fairs, to be determined as part of HyGrid's dissemination plan, will be attended by consortium participants, e.g. Hannover Fair, Carbon Expo, CO2 Expo, etc. Some of the academic international conferences will also be selected to disseminate the research findings. Important conferences (see Annex 2) will be targeted for presentation. It is expected that project results will be presented to about 7 international events over the entire duration. Moreover, the Consortium will seek links with other on-going EU projects on similar topics.

The initial list of the external conferences and symposiums interesting for the HyGrid Consortium to participate in and present the HyGrid results (with the permission of project officer) is detailed in Annex 2.

Partner dissemination
Partners are requested to maintain an active participation within the dissemination strategy.
Proactive and balanced levels of participation will have profound effects throughout the whole project and will guarantee that the dissemination techniques are applied.

Dissemination Tables have been distributed to each partner in order to collect and monitor dissemination progress. Each table summarizes the dissemination activities that have been attended the first months of the project or foreseen by each partner within the coming months. The templates for collecting the contribution from each partner are presented in Annex 3.

7. ANNEXES

7.1. Annex 1: Relevant media list

List of relevant media. The list could be updated along the project.

Media	Website
Applied Energy	http://www.journals.elsevier.com/applied-energy/
Chemical Engineering and Processing: Process Intensification.	http://www.journals.elsevier.com/chemical-engineering-and-processing-process-intensification/
Chemical Engineering Communications	www.researchgate.net/journal/0098-6445_Chemical_Engineering_Communications
Chemical Engineering Journal	http://www.sciencedirect.com/science/journal/13858947
Chemical Engineering Science	www.journals.elsevier.com/chemical-engineering-science
Chemistry Letters	http://www.journal.csj.jp/chem-lett
Energy	http://www.journals.elsevier.com/energy/
Fuel	http://www.journals.elsevier.com/fuel/
Fuel Cells Bulletin	http://www.journals.elsevier.com/fuel-cells-bulletin/
Fuel Processing Technology	http://www.journals.elsevier.com/fuel-processing-technology
Industrial & Engineering Chemistry Research	http://pubs.acs.org/journal/iecred
International Journal of Hydrogen Energy	http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/
Journal of Industrial and Engineering Chemistry	http://www.journals.elsevier.com/journal-of-industrial-and-engineering-chemistry/
J. Nat. Gas Sci. Eng.	
Journal of membrane Science	http://www.sciencedirect.com/science/journal/03767388
Membrane Technology	http://www.journals.elsevier.com/membrane-technology/
Molecules	http://www.mdpi.com/journal/molecules
Natural Gas Industry B	http://www.journals.elsevier.com/natural-gas-industry-b/
Physical Chemistry Chemical Physics	http://www.rsc.org/journals-books-databases/about-journals/PCCP/
Renewable Energy	http://www.journals.elsevier.com/renewable-energy/
Renewable & Sustainable Energy Reviews	http://www.journals.elsevier.com/renewable-and-sustainable-energy-reviews
Research Gate	www.researchgate.net
RSC Advances	http://pubs.rsc.org/en/journals/journalissues/ra
Sealing Technology	http://www.journals.elsevier.com/sealing-technology/
Separation and Purification Technology	http://www.journals.elsevier.com/separation-and-purification-technology
Sustainable Materials and Technologies	http://www.journals.elsevier.com/sustainable-materials-and-technologies/

7.2. Annex2: Relevant events list

List of relevant scientific conferences and symposiums (see the HyGrid website).

Date	Event	Venue	Website
June 13-16, 2016	21st World Hydrogen Energy Conference 2016	Zaragoza (Spain)	http://www.whec2016.com/
June 27-29, 2016	Workshop on Ion Exchange Membranes for Energy Applications – EMEA2016	Bad Zwischenahn, Germany	
July 10-13, 2016	14th International Conference on Inorganic Membranes, ICIM2016	Atlanta (USA)	http://www.icimconference2016.com/
March 9-10, 2017	Third European Workshop on Membrane reactors: Membrane Reactors for Process Intensification (MR4PI2017)	Villafranca di Verona, Italy	http://www.fluidcell.eu/content/workshops
May 24-26, 2017	International Gas Union Research Conference 2017 (IGRC2017)	Rio de Janeiro, Brazil	http://www.igrc2017.com.br/
July 10-13, 2017	13th International Conference on Catalysis in Membrane Reactors ((ICCMR13).	Houston (USA)	http://iccmr.tamu.edu/
July 9-12, 2017	7th World Hydrogen Technology Convention	Prague (Czech Republic)	http://www.whtcprague2017.cz/
June 18–22, 2018	15th International Conference on Inorganic Membranes	Dresden (Germany)	http://www.icim2018.com/index.php?id=2
July 9-13, 2018	Euromembrane 2018	Valencia, Spain	http://www.euromembrane2018.org/
2018	PERMEA	-	
2018	22nd World Hydrogen Energy Conference 2018	Rio de Janeiro (Brazil)	
Nov. 2018	FCH JU Programme Review Days 2018	Brussels, Belgium	
December 4th, 2018	PROMECA workshop 2018: Membranes and Membrane Reactors	Eindhoven (The Netherlands).	http://promecaproject.com/
April 24 – 26, 2019	14th HYdrogen - POwer THeoretical and Engineering Solutions International Symposium (HYPOTHESIS XIV),	Foz do Iguaçu (Brazil)	http://www.hypothesis.ws/
June 2 –	8th World Hydrogen	Tokyo, Japan	http://whtc2019.jp/

7, 2019	Technology Convention (WHTC 2019)		
July 8-11, 2019	14th International Conference on Catalysis in Membrane Reactors,	Eindhoven (The Netherlands).	https://www.iccmr14.com/
June 22 – 25, 2020	23rd World Hydrogen Energy Conference (WHEC 2020)	Copenhagen (Denmark)	

7.3. Annex3: HyGrid dissemination follow up

The tables below are intended to report and keep track of all the dissemination initiatives at partners' level to be updated each six months. The dissemination activities carried out along the project are detailed at the project public website (https://www.hygrid-h2.eu/content/dissemination).

Dissemination and communication activities:

Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
Organisation of a Conference] [Organisation of a workshop] [Press release] [Non-scientific and non-peer reviewed publications (popularised publications)] [Exhibition] [Flyers training] [Social media] [Web-site] [Communication campaign (e.g radio, TV)] [Participation to a conference] [Participation to a workshop] [Participation to an event other than a conference or workshop] [Video/film] [Brokerage event] [Pitch event] [Trade fair] [Participation in activities organised jointly with other H2020 project(s)] [Other]					Scientific Community (higher education, Research)] [Industry] [Civil Society] [General Public] [Policy makers] [Medias] [Investors] [Customers] [Other]		

Scientific publications (This field is only for peer reviewed articles)

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Publisher	Place of publication	Year of publication	Relevant pages	Public & private participation	Peer-review	Is/Will open access provided to this publication
*[*Article in journal*]* *[*Publication in conference proceeding/workshop*]* *[*Books/Monographs*]* *[*Chapters in books*]* *[*Thesis/dissertation*]*	[insert title of the publication]	[insert DOI reference]	[insert ISSN or eSSN number]	[insert authors' name(s)]	[insert title of the journal]	[insert number of the journal] [insert month of the publication] [insert year of the publication]	[insert name of the publisher]	[insert place of publication]	[insert year of the publication]	[insert first page of the publication] - [insert last page of the publication]	*[YES]* *[NO]*	*[YES]* *[NO]*	*[*Yes - Green OA [insert the length of embargo if any]*]* *[*Yes - Gold OA [insert the amount of processing charges in EUR if any]*]* *[NO]*