



elyntegration

Grid Integrated Multi Megawatt High Pressure Alkaline
Electrolysers for Energy Applications

Dissemination and awareness plan

DELIVERABLE 6.2

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PUBLIC





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Nomenclature

CA	Consortium Agreement
GA	Grant Agreement
DOA	Description of Action
CDAP	Communication, dissemination and awareness plan
PSC	Project Steering Committee



1 EXECUTIVE SUMMARY

The dissemination and awareness plan (CDAP) defines the communication tools to be developed and used towards a successful dissemination of the Project and its results. The project Grant Agreement, through the Description of Action, contained the draft of this plan as part of the measures to maximise the Project's impact. The CDAP describes the dissemination goals, target audience and appropriate channels to provide a regular flow of information. The CDAP will be updated twice during the Project duration, followed by a final report on dissemination activities and materials by the end of the Project.



2 OBJECTIVES

The objective of Deliverable 6.2 is to describe the planning for dissemination, communication and awareness activities and tools to be carried out so that ELYNTEGRATION can achieve an adequate level of visibility and impact in Europe and abroad at the desired dissemination levels.

The report describes through the sections the approach to dissemination, procedures, means and methodologies for internal communication between partners, reviewing also the procedure to present the project to a further audience outside the project consortium.

The document aims at defining the general communication tools that will be used to disseminate the project and also the method to follow by the Project partners to ensure the impact of the project through media and press releases and information distribution to stakeholders.

The dissemination and awareness plan is an important set of tools that has to be complementary to other project developments, having the common goal of maximising the impact. It is important to remark that, given that the intention is that the project results are also market oriented, an exploitation strategy and business plan will be also developed throughout the project. Therefore, the plan definition and the following updates have to be also dedicated to maximise the impact to the interested stakeholders according to the studies on assessment of market potential and the strategic plans for commercial exploitation of the results.

Then, it can be considered that the main objective of the plan hereby documented has to be to describe the schedule, audience, methods and tools to maximise the impact of the Project and its results.



3 DESCRIPTION

The CDAP is one of the first documents of the Project and its WP6, aimed to ensure the impact of the project, at every level and with different focus of interest of the project results. Once the plan for communication, awareness and dissemination is developed, it will be periodically updated according to the Plan and Description of Action of the Project. The document as first CDAP includes a description of the project communication methodology, target groups and communication tools defined to reach the selected audience.

3.1 Communication management methodology

The dissemination and communication of ELYNTEGRATION to stakeholders and audiences outside the project is managed by the partners within the Work Package 6 of the Project. Besides, all the external communication activities are monitored by the Project Coordinator (FHA), to ensure that the communication activities and methodology are in compliance with the provisions of the agreements. As a general rule, the Grant Agreement will apply, but some specific provisions are agreed in the Consortium Agreement.

About the dissemination of own results, the partners are committed to inform the consortium about planned publications with enough time to ensure that the results to be published are not in conflict with potential commercial exploitation activities, confidentiality and legitimate interests of the partners. In any case, the objection to any communication activity related to publication, has to be clearly justified and followed by necessary modifications to allow and not block, if possible, the publication and dissemination of results.

Besides, the Consortium is committed to cooperate in the submission, preliminary evaluation and publication of any dissertation or Master thesis related to the project, subject to the provisions of the CA.

The tasks related to communication and dissemination in the project involve all the members of the Consortium, so all the partners should work and contribute to dissemination tasks according to the agreements and the DOA. Nevertheless, FHA, as project coordinator, is the final element in charge of the dissemination, being invested in elaborating and contributing the dissemination plan, promoting the collaboration of all the partners and finally monitoring and compiling the dissemination and communication activities of the project.

The tracking and monitoring of communication and dissemination activities is in order thanks to the internal management tools and system used in the project. The partners can at any time submit to the internal documents manager drafts, abstracts and proposed publications with the proper access rights settled for these documents. Furthermore, the coordinator is automatically notified of any changes and uploads to the documents' manager, so a complete follow up of the versions and comments to the proposed publications is possible. On the other hand, the partners are invited to include the publications and dissemination activities in the internal management tool, being under review approximately every three months during online meetings of the project steering committee (PSC).



3.2 Target groups

The following section includes the total amount of the target audiences that are expected to be influenced by the results of the development of the project. For each of them it has been specified a series of key messages that will have to be successfully addressed during the development of the project, always based on the rules of the GA and CA.

Policy makers, regulators, public bodies

The evaluation of potential markets, along with the analysis of the European standards and national regulations will be the main input for these organisms. In the same way, this will be accompanied by an analysis of the potential of water electrolysis to enable a successful introduction of RE resources at low costs.

Technology providers, manufacturers, fuel cell and hydrogen stakeholders

Once the consortium has approved which information and results are susceptible to be public regarding new components and systems improvements, market potential and framework to successfully deploy electrolyzers as grid service, they will be shared in selected forums with FCH stakeholders. Besides, sharing public information of the main achievements of the project would be one of the main ways to increase the exploitation impact of the project.

Renewable energy stakeholders, distribution and transmission system operators

For the main stakeholders on the renewable energy industrial sector, as well as TSOs and DSOs, the key messages to be transmitted involve the benefits that the MW HP AWE technology can introduce to new business models related to the RE sector. Additionally, demonstration tests' results will be shared among these groups in order to prove the feasibility of the connection of electrolyzers to the grid, and performance specifications for grid-connected electrolyzers will be validated with grid operators to ensure their adequacy.

General public

The communication efforts towards the general public will be focused in showing the benefits of RE introduction with hydrogen to reduce environmental impacts, employment generation, increasing European competitiveness and reducing external dependency. The additional goal at this point is to reduce the existing resistance to these new technologies and motivating early adopters.

Results from additional tasks of the project, related to the assessment of the market potential and identification and analysis of business cases will serve as additional input to detect new target groups or stakeholders or to focus better the dissemination efforts to reach the target groups.

Furthermore, the information obtained through the continuous monitoring of the external projects will also serve as feedback to define specific stakeholders from the different groups-

The participation in the communication events and activities promoted by the FCH 2 JU will be of key importance to reach these stakeholders.



3.3 Communication tools

The following section describes the necessary tools to develop an efficient communication from the project's consortium towards the target groups established before. These tools involve all the graphic material that will be used for the several congress and fairs that are planned to be attended (as well as for the workshops to be celebrated) and also the digital material, understood as the website and the communications performed through social networks.

3.3.1 Project website

The project website (www.elyntegration.eu) aims to become the central place for the diffusion of all the information related to the project. The website has been designed to provide a general impression of the project's mission through the main page (Figure 1), by showing in three different paragraphs a brief description of its main topic, applications for the finished project and funding by the European Commission.



Figure 1. Elyntegration's website homepage

For a more detailed view at the characteristics of the project, a number of sections have been implemented to provide the information in an organized way. The 'Project' section (Figure 2) continues with the development of the project description briefly introduced at the main page, now introducing all the necessary specifications for a complete understanding of its goals and procedures.

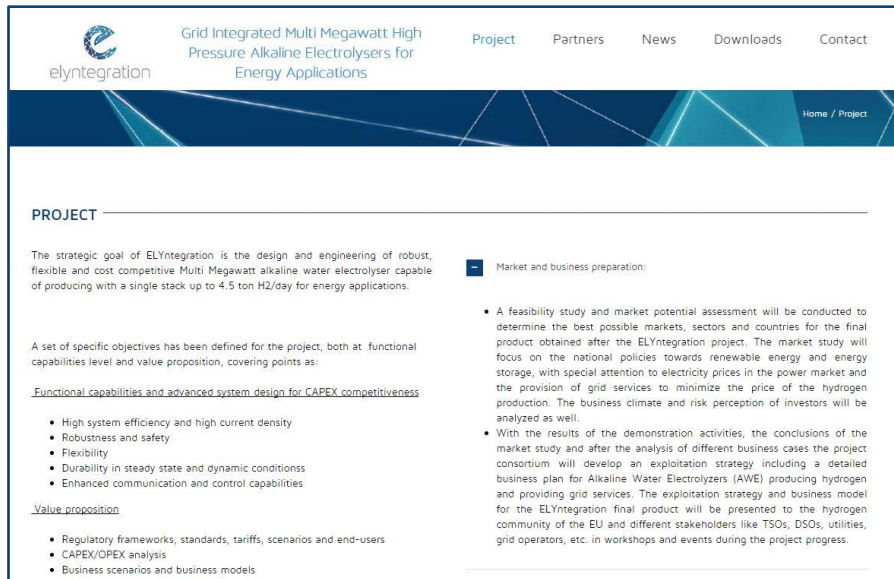


Figure 2. Elyntegration website, 'Project' section snapshot

The 'Partners' section (Figure 3) provides a complete description and background of all the companies, research centres and universities involved, including also links to their websites.

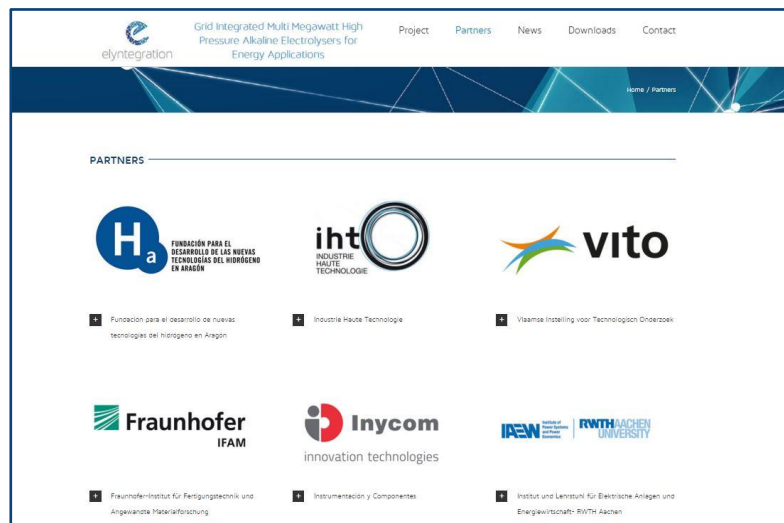


Figure 3. 'Partners' section snapshot

The website is completed with the sections 'News' and 'Downloads'. The first of these sections will include all the press notes and main events related to the project information, as well as important announcements. The 'Download' section (Figure 4), in the other hand, will serve as the main hosting page for all the public content generated by the project, i.e. deliverables, presentations, reports, publications, etc. as well as flyers, press kits and other corporate documents.

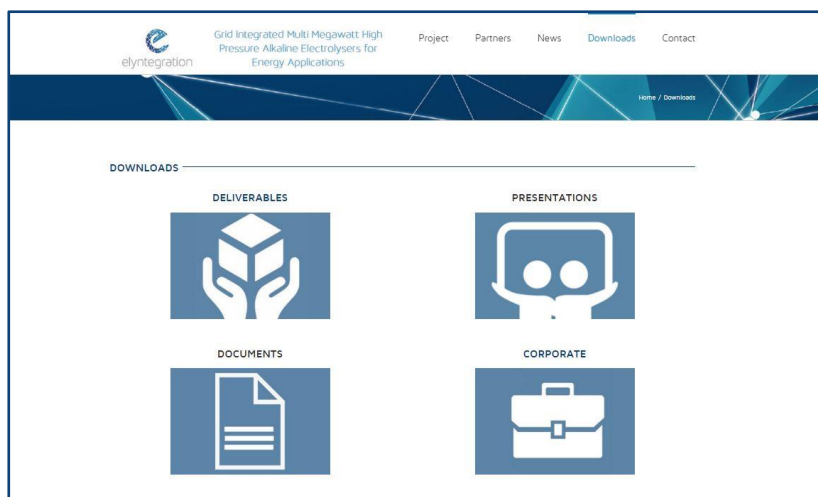


Figure 4. 'Downloads' section snapshot

Finally, a 'Contact' section has also been implemented to make it as easy as possible the exchange of information between the user and the project partners. Said section includes a contact form that once fulfilled automatically sends an email to the project coordinator (FHA), as well as main contact information of the coordinator, like address, telephone number and main webpage.

3.3.2 Graphic material

The graphic material of the project will be developed according to the identity manual of the project. The corporative colour of Elyntegration is blue [Pantone 5415C; R12/G66/B118]. The logo uses another colour for the gradient [Blue Pantone 7454 C; R102/G141/B177]. The font that has been selected for corporative graphic material is Maven Pro Light 300, while the font to be used in documents is Calibri

Logo

The chosen logo establishes the basic lines for the project's documents visual appearance. At the same time, a Corporate Identity Manual has been developed, which is meant to define how the logo is used within Elyntegration official documents (such as reports, letters, cards, etc.) and that will be distributed among the partners of the project.

The logo selected by the consortium is composed by the 'e' letter, modified in order to get an innovative and original form, accompanied by the name of the project 'Elyntegration'. The chosen colour, as well as the connected dots that compose the logo, are meant to transmit a feeling of dynamism and integrated technology.

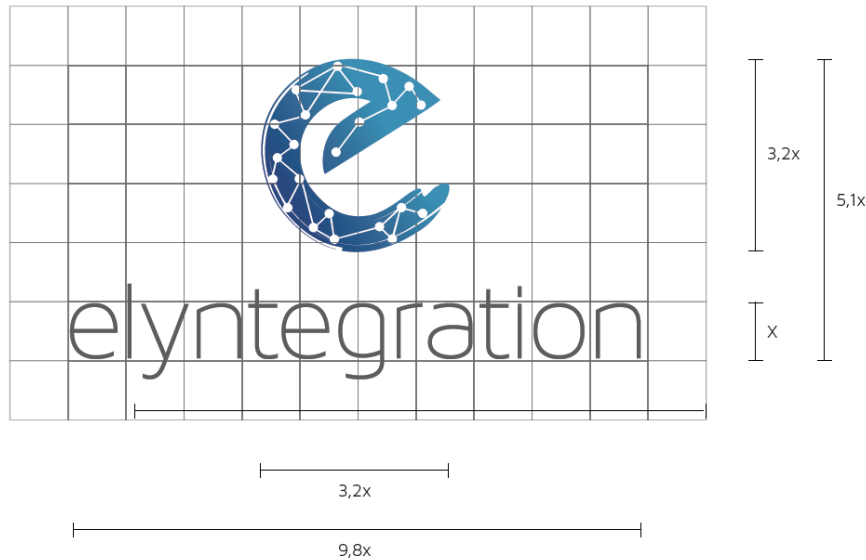


Figure 5. Elyntegration logo, dimension

Leaflet

As a way to promote the project at selected events, a set of graphic materials will have to be developed to provide general information to both technical and non-technical public. A leaflet will be the first of these graphic dissemination materials. Its main target will be to serve as a support document for fairs, congresses and forums, but it will be available for download to any visitor of the Elyntegration website as well. Additionally, the leaflet is included in the Annex 1 of this document.

Poster

The poster will constitute the second of the planned graphic materials to be developed soon in the project timeline. In the same way as the leaflet, the poster will serve as support material for special events where Elyntegration will be introduced. However, the poster will have the specific goal to serve as the main support material for the short-oral presentations that are common in these events. The poster developed is included in the Annex 2 of this document as well.

Press kit

In order to help partners in the elaboration of their press releases, a press kit will be developed and distributed among them. By this it will be possible to homogenize all the communications made into the same style, thus promoting the chosen project image.

Video

At the time of finalization of the project, a video will be released including the main public results and impact of Elyntegration. This video will be shared through press release and it will be posted at the project's main website. The aim of the video will be to serve as the global final message of the project, and to provide a general view of the work performed.



3.3.3 Social and professional networks

The use of social media and social and professional networks will be also a key communication tool to disseminate information about the project, events and project results. Partners will use their own accounts in the social/professional networks to contribute to the project dissemination and to create open debates and detect future industrial investors from other cities in Europe. The main social networks considered for the dissemination of the project communications and recommendations on how to use each of them according to their unique characteristics are detailed below:

LinkedIn: A template of the project will be created and shared with all the partners. Each participant on the project of every partner will be able to post said template, under the 'Project' section available on their profiles, linking it to the other members of their teams.

Twitter: The partners will echo the project events and press releases through a brief message or tweetable fact in the account holder language and also in English, redirecting to the main press release, linking to the new or event published in the project website.

Facebook: The partners will echo the project achievements in the same way as in the twitter case, although the platform characteristics will allow posting a more detailed message for each communication.

YouTube: The channels of the partners involved in the project will be useful to make a better diffusion of the promotional videos made during the development of the project (like the final video regarding the results obtained) as well as of any appearances of the partners on television.



3.4 Communication activities

3.4.1 Identification of ongoing projects for project cooperation

Possible paths of collaboration in public workshops and seminar will be explored by the Consortium when it is considered suitable and of interest for the project and the partners. Although, the assessment of the collaboration will be studied case by case taking into account the goals of the project and partners involved, following there is a preliminary list of ongoing European projects that could be assessed.

HELMETH (2014-2017)

The objective of the HELMETH project is the proof of concept of a highly efficient Power-to-Gas (P2G) technology with methane as a chemical storage and by thermally integrating high temperature electrolysis (SOEC technology) with methanation. This thermal integration balancing the exothermal and endothermal processes is an innovation with a high potential for a most energy-efficient storage solution for renewable electricity, without any practical capacity and duration limitation, since it provides SNG (Substitute Natural Gas) as a product, which is fully compatible with the existing pipeline network and storage infrastructure. The realisation of the P2G technology as proposed within HELMETH needs several development steps and HELMETH focuses on two main technical and socio-economic objectives, which have to be met in order to show the feasibility of the technology

ELECTRA (2014-2017)

Existing HTEs utilise the high packing density of planar stacks, but the hot seal and vulnerability to single cell breakdown give high stack rejection rate and questionable durability and lifetime economy. ELECTRA uses instead tubular segmented cells, mounted in a novel module with cold seals that allows monitoring and replacement of individual tubes from the cold side. The tubes are developed along 3 design generations with increasing efforts and rewards towards electrochemical performance and sustainable mass scale production. Electrodes and electrolyte are applied using spraying/dipping and a novel solid state reactive sintering approach, facilitating sintering of BZY materials. ELECTRA emphasises development of H₂O-O₂ anode and its current collection. It will show a kW-size multi-tube module producing 250 L/h H₂ and CO₂ to syngas co-electrolysis with DME production. Partners excel in ceramic proton conductors, industry-scale ceramics, tubular electrochemical cells, and integration of these in renewable energy schemes including geothermal, wind and solar power. The project counts 7 partners (4 SMEs/industry), is coordinated by University of Oslo, and runs for 3 years.

CERTIFHY (2014-2016)

The development of hydrogen as an energy carrier will be dependent upon the capacity of the market to offer low-carbon or carbon-free hydrogen to end-users and consumers. However, the production of green hydrogen and its consumption will most likely be unbundled in order to optimize its transportation and distribution, while enabling cost adequate pricing for green hydrogen. This implies that a robust system of Guarantee of Origin for green hydrogen will be needed, in order for final customers to buy low-carbon hydrogen in full transparency. The objectives of the CertifHy project are to assess the necessary market and regulatory conditions, develop the complete design and initiate a unique European framework for green hydrogen guarantees of origin. The project will be carried out in consultation with a



broad range of relevant stakeholders from all over Europe, including hydrogen producers, traders and customers. Ultimately the CertifHy guarantee of origin scheme will facilitate the penetration of green hydrogen throughout Europe.

HYSEA (2015-2018)

The aim of the HySEA project is to conduct pre-normative research on vented deflagrations in enclosures and containers for hydrogen energy applications. The ambition is to facilitate the safe and successful introduction of hydrogen energy systems by introducing harmonized standard vent sizing requirements. The partners in the HySEA consortium have extensive experience from experimental and numerical investigations of hydrogen explosions. The experimental program features full-scale vented deflagration experiments in standard ISO containers, and includes the effect of obstacles simulating levels of congestion representative of industrial systems. The project also entails the development of a hierarchy of predictive models, ranging from empirical engineering models to sophisticated computational fluid dynamics (CFD) and finite element (FE) tools.

3.4.2 Publications

Scientific papers

The target set for this project is to publish a minimum of 4 papers in scientific journals during the time of its development. For all participants on the Horizon 2020 program, it is necessary to meet a number of requirements related to the diffusion of any result of the project. These include ensuring open access to all peer-reviewed scientific publications, and trying to provide open access to other types of publications, such as monographs, books, reports, etc.

For this reason, in the case of any participant that wants to publish a paper under a scientific journal, the procedure to follow will be as explained below:

- The corresponding authors will be in charge of the selection of the scientific journal to publish their work. This journal will necessarily have to offer an Open Access option for the publication of selected articles.
- The publication of the work will preferably be made under a 'Green Open Access' policy, which will allow any user to access the work after the embargo period of the journal has ended. Embargo periods are different depending on the journals, but this period won't be able to exceed 6 months for any publication. It is the responsibility of the author to find a journal that fulfils these characteristics.
- In the case of an article being published in a journal with longer embargo periods, the partners involved shall cover the 'Gold Open Access' fee to the publication.



Magazines

At the same time as the papers published in scientific journals, a minimum number of 10 publications will be published in regular magazines, informing about the development of the project and the milestones achieved.

Press releases

During the development of the project, it is planned to produce a number of press releases, covering the most important milestones, as well as events being attended by Elyntegration partners. The project coordinator will be the partner in charge of the main dissemination of the press notes.

3.4.3 Identification of Conference, Events and Fairs

World Hydrogen Energy Conference, WHEC - Biennial-

Being considered the world's most well-known conference in the field of hydrogen energy and fuel cells applications of the International Association for Hydrogen Energy (IAHE), WHEC (World Hydrogen Energy Conference) was first held in Miami, Florida in 1976. Since then, it has been held every two years at different locations around the world corresponding this year to Zaragoza, from 13 to 16 June, the celebration of its 21st edition.

Apart from the high quality conferences, WHEC 2016 will include a Trade Fair and host more than 1,000 attendees from more than 60 countries and the organization provides participants, exhibitors, and sponsors numerous opportunities to share and exchange scientific information with global leaders in businesses, governments, and scientific communities.

World of energy solutions (DE) –Yearly -

World of energy solutions is an international trade fair, conference and networking platform focused on fuel cell and hydrogen technology, battery and other energy storage devices and new solutions for mobility with a promising eco character.

Taking place in Stuttgart (from 10 to 12 of October, in its 2016 edition), the conference will count with more than 130 international experts' presentations which will report about current developments on all these matters as well as what will they become in a near future.

IRES/ Energy Storage Europe Conference and Exhibition/ Power to Gas Conference (DE) - Yearly -

Energy Storage Europe is the trade fair with the world's largest conference programme on energy storage. In its 2016 edition, the conference consists of the 5th Energy Storage Conference (ESE) and the 10th International Renewable Energy Storage Conference (IRES 2016). The focuses will be economy and finance as well as science and social policy. The 5th OTTI-Conference Power-to-Gas and 9th Storage Day side events takes place at the same time at the exhibition centre in Düsseldorf.

It is the place for various companies and research institutes to have the chance to present their latest products and research findings while visitors can learn more about the state-of-the-art techniques and can conclude concrete business deals.



With a total of 140 exhibitors and 3,000 participants from more than 45 countries, it corresponds to an increase of around 50 per cent in comparison with the previous year.

Group Exhibit Hydrogen + Fuel Cells + Batteries Hannover Messe (DE) – Yearly -

The Group Exhibit Hydrogen + Fuel Cells + Batteries is Europe's largest and most important H₂+FC+BAT exhibition dating back to 1995. It will take place from 25 to 29 of April 2016 in the Energy trade fair of HANNOVER MESSE setting the participants at the centre of the world's largest event for industrial technology.

Through 150 exhibitors from 25 countries (e.g.: International corporations, SMEs and research institutions), it showcases the full spectrum of hydrogen and fuel cell-related technology and batteries, becoming the primary location for finding top manufacturers, distributors, consultants, developers and suppliers.

Hydrogen and its complete chain of production-consumption is the main topic of this event but it will also show a synergy with other energy topics as wind, solar, hydro and geothermal power, energy storage and power plant efficiency.

HyVolution (FR) –Yearly-

Highlighting the importance of this energy source, which does not give off CO₂ emissions, the HyVolution congress is organised under the patronage of The President of the French Republic by GL events Exhibitions in partnership with the French Association for Hydrogen and Fuel Cells (AFHYPAC) (2016 edition). Furthermore, governments and public authorities are actively promoting development projects to build hydrogen filling stations and deploy fleets of hydrogen-powered vehicles which act as a credible option for reducing global warming.

Over the course of two days devoted to conferences that review the overall state of European (first day) and French (second day) market, visitors had the opportunity to discover the latest innovations in terms of mobility and energy storage in a dedicated exhibition area.

Iberconappice (ES) –Biennial-

Under the name of Iberoamerican Congress on Hydrogen and Fuel Cells (Iberconappice), the Spanish Fuel Cells Association organizes a series of conferences with the aim of facilitating dissemination of the progress made in Hydrogen and Fuel Cell technology from different areas (e.g. university, research centres, technology centres, companies and governments).

Despite its original national character, it has been an increase in the participation at international level, providing the opportunity to establish valuable partnerships beyond Spain and its borders.

During this year edition, from 20 to 22 of April 2016 (Málaga), Iberconappice 2016 will offer the possibility to be a showcase of scientific and technological development through the discussion of new ideas, the presentation of prototypes and innovative power generation systems... related to hydrogen and fuel cells.

International Conference on the European Energy Market, EEM (international)–Yearly-

As long as EEM Conferences have been growing along the years, they have become a strong tradition in Europe and in the world in terms of building a forum to exchange ideas and



to discuss a wide range of issues related with energy markets, not only associated with different types of mathematical formulations and solution approaches, but also directed to market design, regulatory policies, climate change as well as foresee and debate changes and challenges that this sector will most likely go through in the near and longer terms.

EEM 2016 is organized by INESC TEC, a private research centre that works closely with University of Porto that also collaborates in the organization. The 13th European Energy Market Conference, EEM 2016, will take place in Porto from 6 to 9 of June 2016.

International Renewable Energy and Environment Conference, IREEC -yearly-

The International Renewable Energy and Environment Conference (IREEC) sponsored by Word Academy of Research and Publications (WARP), is the leading forum of World's Science and Engineering Community for the presentation of new advances and research results in the fields of Energy and Environment.

Its 5th edition, to be held in Madrid from 11 to 13 of July 2016, will aim to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Chemical and Environmental Engineering.

International Conference on Electricity Distribution, CIRED –biennial-

CIRED, the leading forum where the Electricity Distribution Community meets, is the international Association responsible of holding the International Electricity Conference & Exhibition as long as different workshops, both characterised for being organised alternatively every two years in different venues in Europe with a worldwide perspective and participation.

Their future editions will be the 24th International Conference and Exhibition on Electricity Distribution that will take place in Glasgow from 12 to 15 of June 2016 and the Electrical Networks for the Society and People workshop in Helsinki from 14 to 15 of June 2016.

Conferences of different topics will be opened to participation by and contributions from experts from all over the world and may include an exhibition by manufacturing and other companies supplying the electricity distribution industry while on the other side, the 2016 workshop will give members of the electrical community the opportunity to come together to share their wealth of knowledge and network with prestigious international businesses.

InnoGrid2020+ -yearly- (BE)

InnoGrid2020+ is the European research, development and demonstration (RD&D) conference for transmission and distribution grids. It provides key stakeholders from across the policy and value chain a unique opportunity to take stock of the direction of EU-funded RD&D, to hear about the latest developments coming from your European added-value projects and to address some of the challenges to be faced in the immediate future.

The European Network of Transmission System Operators for Electricity (ENTSO-E) and the European Distribution System Operators for Smart Grids (EDSO), co-ordinators of the event, will focus the 2016 edition on “Digital Energy” has been scheduled on 27 June (afternoon) and 28 June (full day) at the Center for Fine Arts in Brussels.



This year's conference will address the innovation paradigm behind the distribution and transmission interface as well as the question of how regulation could facilitate innovation in the new power system.

International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies –Yearly-

Organized by IARIA (IARIA International academy of research and industry association), ENERGY 2016 continues the event considering Green approaches for Smart Grids and IT-aware technologies. It addresses fundamentals, technologies, hardware and software needed support, and applications and challenges. Smart Grid technologies promote ways to enhance efficiency and reliability of the electric grid, while addressing increasing demand and incorporating more renewable and distributed electricity generation. The adoption of data centres, penetration of new energy resources, large dissemination of smart sensing and control devices, including smart home, and new vehicular energy approaches demand a new position for distributed communications, energy storage, and integration of varied sources of energy.

3.4.4 Workshops

At the beginning of the project development, a number of 3 workshops are planned to be carried out. The target groups and audience for each of them will be defined taking into account the progress and timeline of the project. The workshops are scheduled for the months 22, 29 and 36 of the timeline of the project, and the planned content of them is showed below:

- **M22:** general workshop directed to scientific/research/technical community. It could be co-organized together other FCH2-JU projects, conferences, events, etc.
- **M29:** technical workshop directed exclusively to end-user/customers (TSO/DSO, utilities, grid operators, etc). The goal will be to explain the progress, main results and try to attract them for the last months of the project which are crucial for the success of the exploitation and future commercialization
- **M36:** final workshop to close the project. It could be co-organized together other FCH2-JU projects, conferences, events, etc. Workshop directed to the whole community and partners interested to explain the main results.



4 CONCLUSIONS

The present document constitutes the main guide to be followed for any communication activity related to the Elyntegration project. It contains all the necessary information in relation to the target groups, how to reach them and which are the necessary tools to perform these tasks, as well as a selection of potential partners within Europe and conferences, congress and fairs that are suitable for the dissemination of the results of the project.

The main target groups identified are the public regulator bodies, the hydrogen technology providers and manufacturers, the renewable energy stakeholders, DSOs, TSOs and of course the general public too. The ways of reaching these audiences are different for each of them, but in any case, the website of the project is meant to be the central point of information related to the project, as it will contain all the public documents generated during the project, as well as a 'News' section to gather all the important updates on the project. During the time of execution of the project, the partners will have to make use of their institutional accounts in social networks (Twitter, Facebook, LinkedIn, etc.) to promote the work performed in the project.

A set of graphic materials has been prepared to unify the corporate image of any work performed under Elyntegration and to help the diffusion of the project and its presence in fairs, congress, etc. These include the logo, a poster, a leaflet and a press kit, between other materials. Overall, they serve as the main support material to introduce the project to both technical and non-technical audiences.

At the same time, a search between other European projects has resulted in a selection of similar projects that currently are being carried on. Collaborations with some of the participants of these projects might ensue in the near future, as many of their topics closely resemble Elyntegration's mission. The report also includes an extensive list of many congresses and fairs to be celebrated in Europe during the time of execution of the project that will serve as scenarios for the showcasing of the project, as well as very good networking opportunities.

Finally, the list of planned workshops is introduced. These workshops are planned to be carried out close to the ending of the project and to more specific audiences, that will have more interest in the project's results.



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6 ANNEX 1: LEAFLET OVERVIEW



7 ANNEX 2: POSTER OVERVIEW

Congreso Iberoamericano de Hidrógeno y Pilas de Combustible 2016

Grid Integrated Multi Megawatt High Pressure Alkaline Electrolysers for Energy Applications

Proyecto ELYNTEGRATION: electrolizadores alcalinos multi-MW integrados en la red eléctrica para servicios de red y energéticos

Duración 3 años: Septiembre 2015-Septiembre 2018
Participantes: FHA (Coordinador-ES), IHT (CH), VITO (BE), IFAM (DE), INYCOM (ES), IAEW (DE)
Objetivo estratégico: Diseño e ingeniería de un electrolizador alcalino multi MW robusto, flexible y competitivo en coste, basado en la tecnología de IHT, capaz de producir con un sólo stack hasta 4.5 ton H₂/día

MEJORAS EN ELECTROLISIS ALCALINA: DESARROLLOS TÉCNICOS
 Se están realizando mejoras a nivel de **diseño de celda y stack** incluyendo nuevos materiales para electrodos y membranas, persiguiendo mejorar la capacidad de trabajar con elevado rendimiento en un mayor rango de cargas del electrolizador. **VITO e IFAM** están a cargo del desarrollo de materiales, mientras que **IHT** lidera el diseño de la topología de celda y montaje de las soluciones para el stack, apoyando en la toma de decisiones técnicas.
 La definición y el diseño de un **balance de planta optimizado** para la operación dinámica del electrolizador está liderada por **FHA**, incluyendo el análisis de los componentes del BoP y corrientes que podrían derivar en menores costes del sistema y de operación, participando en el proceso los socios tecnológicos e industriales del consorcio (**INYCOM e IHT**)
 Las mejoras incluyen el desarrollo de un **sistema avanzado de control y comunicaciones**, alineado con los requisitos de los usuarios finales y la provisión de servicios de red, que permita mejorar la flexibilidad del electrolizador. **INYCOM** lidera estos desarrollos, trabajando en conjunto con **IAEW** para la definición de los requisitos

ENSAYOS
 Los desarrollos técnicos se ensayan paso a paso y de manera continuada durante el proyecto, desde la caracterización **ex-situ** a escala laboratorio hasta la **in-situ** a diferentes escalas (de micro piloto a tamaño real). Los resultados más prometedores se incluirán en una fase final del proyecto **demostrativa**, a escala industrial trabajando en un entorno operacional. Una vez validados y demostrados, las características se integrarán en el diseño de un electrolizador multiMW de un solo stack.

PREPARACIÓN DEL MERCADO Y CASOS DE NEGOCIO
 El análisis de los mercados y los estudios de viabilidad se realiza en el proyecto para determinar los modelos de negocio más atractivos para los sectores y países analizados, para el producto final diseñado del ELYNTEGRATION. El estudio de mercado se centra en las políticas nacionales relacionadas con energías renovables y **almacenamiento energético**, con especial atención a los precios de la electricidad en los mercados eléctricos y a la provisión de diferentes **servicios de red** con el objetivo de **minimizar el precio de la producción de hidrógeno**. Se analizarán también en relación a los casos de negocio, el clima empresarial y la percepción del riesgo.
 Una vez avanzado el proyecto, se desarrollará una **estrategia de explotación** de los resultados y productos, incluyendo un plan de negocio para el producto final diseñado en ELYNTEGRATION, que se presentará a los diferentes agentes implicados en la comunidad del hidrógeno en Europa, así como a operadores de sistemas de distribución y transmisión eléctrica, gestores del sistema, operadores de red, en diferentes talleres y seminarios que se realizarán durante la duración del proyecto.

Este proyecto recibe financiación de la Fuel Cells and Hydrogen 2 Joint Undertaking bajo el acuerdo N° 671458. Esta Iniciativa Conjunta recibe el apoyo de la Unión Europea a través del programa de Investigación e Innovación Horizonte 2020, así como de España, Bélgica, Alemania y Suiza.

Dr. Fernando Palacín
 Director Gerente
 Fundación para el desarrollo de Nuevas Tecnologías del Hidrógeno en Aragón

www.elyntegration.eu



8 ANNEX 3. PUBLIC PRESENTATION SLIDES

<p>Elyntegration Project (Grant Agreement n° 671458)</p>  <p>Name, Partner Foundation for the Development of New Hydrogen Technologies in Aragon (Spain) Name presentation/Forum/Date</p> <p>www.elyntegration.eu</p> <p>  This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 671458. The Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and Spain, Belgium, Germany, Switzerland.</p>	<p>The Project</p> <ul style="list-style-type: none"> Started: September 2015 Duration 36 months (September 2018) The strategic goal of ELYNTEGRATION is the design and engineering of a <ul style="list-style-type: none"> robust, flexible and cost competitive Multi Megawatt alkaline water electrolyser, based on IHT technology capable of producing - with a single stack - up to 4.5 ton H₂/day for energy applications.  <p>       </p>
<p>Overview</p>  <p>       </p>	<p>Alkaline Water Electrolysis</p> <ul style="list-style-type: none"> Cell design and improvements at stack level, new materials for electrodes and membranes → high performance in a broad range of the electrolyser load. <ul style="list-style-type: none"> VITO and IFAH are in charge of the materials development IHT leads the design of the cell topology and assembly of the final stack solutions, giving also support to the technical decisions. The definition and design of an optimized balance of plant (BoP) for the dynamic operation (led by FHA): <ul style="list-style-type: none"> analysis of the BoP components and streams which could derive in lower costs of the system participation of industrial and technological partners (INyCOM and IHT) An advanced communication and control system (led by Inycom) <ul style="list-style-type: none"> requirements of end-users enhance the flexibility of the electrolyser providing services together with IAEW for the definition of the services and requirements. <p>       </p>
<p>Market and business preparation</p> <ul style="list-style-type: none"> Feasibility study and market potential assessment <ul style="list-style-type: none"> determine the best possible markets, sectors and countries for the final product The market study will focus on the national policies towards renewable energy and energy storage, with special attention to electricity prices in the power market and the provision of grid services to minimize the price of the hydrogen production. Exploitation strategy and business plan: After the results of the demonstration activities, the conclusions of the market study and the analysis of different business cases The exploitation strategy and business model for the ELYntegration final product will be presented to the hydrogen community of the EU and different stakeholders like TSOs, DSOs, utilities, grid operators, etc. in workshops and events during the project progress. <p>       </p>	<p>Testing</p> <ul style="list-style-type: none"> Tested step by step and continuously during the project: <ul style="list-style-type: none"> from ex-situ characterization at laboratory level to in-situ testing at different scales (micro pilot to industrial size) The most promising results obtained in the project will be included in a final demonstration electrolyser working in an operational environment. Once validated and demonstrated at prototype level, the advanced constructive features will be integrated in the design of a multi-MW single stack alkaline electrolyser. <p>       </p>
<p>Communication and Awareness</p> <ul style="list-style-type: none"> Activities complementary to the exploitation strategy and business plan. Targets: policy makers, local authorities, technology providers, general public. The final goal is to develop awareness of the services and technology to be demonstrated in the project at each level, including energy transition problematic, grid flexibility and environmental aspects. Channels: website, leaflets, participation in specialized conferences and fairs. Public deliverables will be also published and available in the project's webpage. <p>       </p>	 <p>elyntegration www.elyntegration.eu</p>  