



# HYRRREG

**Generating platform of projects to  
boost the Hydrogen Economy in the  
European Southwest - SUDOE**

Financiado por:



UE / EU - FEDER / ERDF



cooperación



Hydrogen Economy  
www.hydrogenstrategy.org

IAT

www.iat.es



www.ahe.es



Sevilla-La Mancha  
www.jcm.es



Universidad  
de Sevilla  
www.us.es

cintec

www.cintec.es



www.ahe.es

HYRREG

www.hyrreg.eu



[www.hyrreg.eu](http://www.hyrreg.eu)

NEWSLETTER N.3  
February 2011

## INDEX

<b>ABOUT THE PROJECT</b>	<b>3</b>
<b>OBJECTIVES</b>	<b>3</b>
<b>WHO CAN PARTICIPATE?</b>	<b>3</b>
<b>PARTNERS</b>	<b>4</b>
<b>WHAT HAS BEEN DONE SO FAR?</b>	<b>7</b>
<b>NEXT EVENT</b>	<b>8</b>
<b>NEWS</b>	<b>9</b>
<b>ARE YOU INTERESTED IN HYRREG? COME AND JOIN US!</b>	<b>10</b>

**Generating platform of projects to  
boost the Hydrogen Economy in the  
European Southwest - SUDOE**



## ABOUT THE PROJECT

HYRREG is an initiative financed by the European Commission through the Interreg IVB SUDOE Programme to foster the Hydrogen Economy in Southwestern Europe (SUDOE area). Hyrreg is a 30-month project, which started in April 2009 and will be finished by October 2011.

## OBJECTIVES

To increase the competitiveness and industrial development for hydrogen technologies and fuel cells.

To create a platform for the generation of technology and development collaboration projects between Enterprises, Universities and Technology Centres.

To create a road map of the hydrogen economy, in order to foster the introduction and implementation of these technologies in the SUDOE area.

## WHO CAN PARTICIPATE?

SMEs, Companies, Research Centres, Universities, and any organization interested in Hydrogen Technologies.

## WHY JOIN HYRREG?

Opportunity to benefit from all **services and activities** of the project **for free Visibility and dissemination** on the project website, at events and in publications of the same.

Being part of a **network of contacts** to facilitate the launching of projects.

**Free access** to all reports carried out.

Regular information updates.



## PARTNERS

### SPAIN

#### 1.FUNDACIÓN PARA EL DESARROLLO DE LAS NUEVAS TECNOLOGÍAS DEL HIDRÓGENO EN ARAGÓN

##### ARAGÓN

[www.hidrogenoaragon.org](http://www.hidrogenoaragon.org)

The Foundation for the Development of New Hydrogen Technologies in Aragon is a private, non profit entity. Promoted by the Government of Aragon, it was founded in 2004 with the support of the Administration, industry and the main society actors in a board of 61 members.

The mission of the Foundation is to promote the use of hydrogen as energy vector. Our work is focused on two areas: Engineering and Consultancy and Research and Development, in which own lines of research are development, as well as external and associated projects with other research centres, R&D departments of companies and other entities.

#### 2.INSTITUTO NACIONAL DE TÉCNICA AEROESPACIAL

##### MADRID

[www.inta.es](http://www.inta.es)

INTA is a public research establishment specialized in research and aerospace technological development. It is an independent organisation belonging to the Spanish Ministry of Defence through the State Secretariat for Defence.

INTA was founded in 1942. At that time, the primary functions of the institute were focused on providing technical support to aeronautical services and authorities, and technical assistance to the aeronautical Industry. Such tasks are still being carry out, in addition to many others tasks mainly related to our projection into other

Mission: INTA's most relevant goal is to obtain, preserve and increase the level of technology to be applied in the aerospace sector. The Institute contributes to defining objectives, programmes and projects related to aeronautics and space science, providing technical support, assessment and services to official bodies and agencies, and to industrial or technological enterprises as well.

#### 3.INSTITUTO ANDALUZ DE TECNOLOGÍA, IAT

##### ANDALUCÍA

[www.iat.es](http://www.iat.es)

The Andalusian Institute of Technology (IAT) is a Centre for Innovation and Technology created as a private non profit Foundation. It is located in Seville and Malaga (Spain) and has been certified as being of public interest. Operating under strictly professional criteria, its goal is to assist companies and institutions to improve their performance in a sustainable manner, while providing value through innovative solutions. In order to do so, it helps them to adapt to technological changes and boosts innovation processes and continuous improvement by providing advanced technical services. Its main areas of expertise include: Innovation and Technology, Information Technologies, In-company innovation management, Environment, Energy, Quality and R&D+I Management, Training and Knowledge Management Systems and Industrial Design.

#### 4. JUNTA DE CASTILLA-LA MANCHA

##### CASTILLA LA MANCHA

[www.jccm.es](http://www.jccm.es)

The main responsibilities and powers of the regional Ministry of Education and Science of Castilla-La Mancha are:



·Technological development in the regional, national and international public and private sectors in all areas of knowledge.

·Promoting research and technological development of regional industry in all areas.

·Development of science parks and technology centres.

·Creation of new cooperation programmes between public and private research institutions, mainly SME 's research programmes.

·Proposal and coordination of local, national and European research programmes.

## 5. UNIVERSIDAD REY JUAN CARLOS - CINTTEC

### MADRID

[www.ursc.es](http://www.ursc.es)

Universidad Rey Juan Carlos (URJC) is a public university based in Madrid with two research groups working in Hydrogen and related technologies: the Chemical and Environmental Engineering Group and the Chemical and Energetic Technologies Group.

On the other hand , CINTTEC as Technology Transfer Office of the URJC, is in charge of promoting and managing the technology development between the University and industry, including Projects and IPR management. On behalf of the Comunidad de Madrid, CINTTEC has been providing technical support for energetic issues since 2002, managing the "Círculos de Innovación" Programme, which provide support to both public institutions and companies by developing Technology Watch Reports and Freedom to Operate Reports in the energetic area. Moreover, CINTTEC plays a role as coordinator of the project funded by the Ministry of Science and Innovation (MICINN) on developing a platform of collaborative projects with companies and research institutes in the field of hydrogen and fuel cells (H2 Evolution

Likewise, CINTTEC is a constituent member of the Ibero-American network CYTED of hydrogen, and member of the executive board of the Spanish association on Hydrogen (AeH2).It is also a national coordinator of the working group on production of hydrogen from renewable sources of the Spanish platform on Hydrogen and Fuel cells (PTE HPC) since its inception.

## 6. ECOLE DES MINES D'ALBI CARMAUX

### MIDI-PYRÉNÉES

[www.enstimac.fr](http://www.enstimac.fr)

Founded in 1993, the École des Mines of Albi-Carmaux (EMAC\*) is an undergraduate training institute for engineers and a post graduate research centre under the guidance of the French Ministry of Economy, Industry and Employment. The school is part of the wider Group of 7 Ecoles des Mines, which shares a long experience in the training of leading-edge engineers in direct response to industrial demands.

EMAC is member of the "PRES Université of Toulouse" which gathers all higher Education Institutions of Midi-Pyrénées. EMAC is specialised in the training of "generalist" engineers, while its research programme is developed in specific areas to process engineering, equipment and tools for material forming, and industrial engineering.

Up to the present the school has bestowed 1600 engineering degrees, 160 PhDs and contributed to the creation of 15 companies.

EMAC, in particular, is member of the Hydrogen association PHyRENEES.

## 7. ASSOCIATION PHYRENEES

### MIDI-PYRÉNÉES

<http://blogs.enstimac.fr/phyrenees/>

The association PHyRENEES was founded in October 2007 and has several charter members: French companies, small



and medium sized firms, local authorities, research centres, the General Council of the Tarn Departement, the Midi-Pyrenees Region, independent associations and the French National Authority for the environment and energy saving.

The purpose of this association is to promote the creation of a «hydrogen community» in the Midi-Pyrenees region, by structuring from available resources to the final use. Its aim is to develop hydrogen technologies for sustainable development.

Among the actions that PHyRENEES wants to develop in the Midi-Pyrenees region are the following:

- communication and public information
- training activities.
- contributions to defining the new regulatory framework.
- demonstration of various and large scale operations.
- research and development projects.
- measures to accompany the industrial and tertiary sectors.

Actions are engaged by the association at regional, national, trans-national and European level.

## PORTUGAL

### 8. INSTITUTO DE SOLDADURA E QUALIDADE (ISQ)

**LISBOA**  
[www.isq.pt](http://www.isq.pt)

ISQ is a private and independent organization, founded in 1965, offering technical inspection, training and consultancy services, supported by research and development activities and by accredited laboratories.

results from our commitment to offer high quality services. Our activities are rooted in a constant growth of knowledge and technology with a view to offering our clients and partners the best global solutions, and those which are most suited to their needs.

Our growth strategy involves an ever larger sustainable presence in the world, with offices, delegations and associated companies in Angola, Algeria, Brazil, China, Cuba, Spain, French Guiana, Iran, Mexico, Norway and Turkey. Its mission is to contribute to the constant improvement of Portuguese industry and services, resulting in an expanded international presence, by collaborating with the state, regional councils and businesses with regard to the sharing and development of technology, new products and processes, structured management practices and quality control, hygiene and safety, energy conservation and environmental protection, and systematic maximization of human resources.

### 9. INSTITUTO SUPERIOR TECNICO, UNIVERSIDADE TECNICA DE LISBOA

**LISBOA**  
[www.ist.utl.pt](http://www.ist.utl.pt)

The Instituto Superior Técnico (IST) is the largest and most reputed school of Engineering, Science and Technology and Architecture in Portugal. Since its foundation in 1911, IST's mission is to provide top quality higher education, as well as to develop Research, Development and Innovation (RD&I) activities according to the highest international standards.



## What has been done so far?

### Collaboration agreement Signed:

- Energy Ibero-american Net
- Spanish Hydrogen Association
- International Innovation Unit of Energy
- Spanish Hydrogen and Fuel Cell Platform
- 7th FP Aragonese Net
- Innovation Net Derby
- Portuguese Association for Hydrogen Promotion

### Other institutions approached:

- UII-CO2, Agencia Andaluza de la Energía, Regional Governments of Aragón, Castilla la Mancha and Madrid

- Launched 36 **Projects**: 20 nationals, 8 European, 5 Interregional FR-SP, 3 with Ibero-America.

- **Brokerage Event** (more than 150 attendees each) GENERA 2009 and GENERA 2010, Madrid.

- First **annual catalogue**: technology offers (79) and demands(7), R&D profiles of stakeholders. Second Catalogue in process (Your entity can be present)

- First **"Contest for Ideas"** to promote companies based on technology. Deadline: 15st November 2010  
Next contest : beginning 2011

- **Technology watch reports**: state of the art, technology trends, developments, inventions, potential partners or competitors, emerging technological applications,... There are **16 topics identified** and 5 TWR have been completed (2 public and 3 private)

### Road Map:

- Identification of stakeholders
- Elaboration of questionnaire to collect data
- First data analysis
- SWOT analysis
- Review of indicators
- Regional workshops (in progress)

### - Main Events

- GENERA 2009 (Energy Fair): Madrid, May 2009: Seminar organized by the Spanish H2 Association
- HYCELTEC 2009: Lisbon, September 2009: Oral presentation
- H2-Power Expo: Zaragoza, September 2009: Oral presentation & stand
- Seminar in Aragón: Zaragoza, November 2009: to promote project activities
- GENERA 2010: Madrid, May 2010: brokerage event & oral presentation
- WHEC 2010: Essen, May 2010: Oral & Poste presentations
- CONAPPICE: Spanish Conference for Fuel Cells, Seville, June 2010: Oral presentation
- Other events: meetings with stakeholders & regional governments,...



## NEXT EVENTS

### **HNA Hydrogen Conference & Expo 2011**

**Place:** California, USA

**Date:** February 8-10

**More info:** [www.fuelcellandhydrogenenergy.org/index.asp](http://www.fuelcellandhydrogenenergy.org/index.asp)

### **Expoenergética**

**Place:** Valencia, Spain

**Date:** February 16-18

**More info:** [www.egetica-expoenergetica.com/feria/en/press/](http://www.egetica-expoenergetica.com/feria/en/press/)

### **ICHS 2011. International Conference on Hydrogen Safety**

**Place:** San Francisco, California, USA

**Date:** September 12-14

**More info:** [http://aeh2.org/documentos/Sponsorship%20Flyer\\_ICHS4.pdf](http://aeh2.org/documentos/Sponsorship%20Flyer_ICHS4.pdf)

## News

### **Edible nanostructures could be a clean solution to hydrogen storage for vehicles**

A team of scientist from Northwestern University (Illinois, USA) has developed new edible nanostructures that could be used to store gases as hydrogen to power vehicles, and carbon dioxide by using sugar, salt and alcohol. There are some porous crystals called Metal-Organic Frameworks (MOFs) which usually contain petroleum-based ingredients and can absorb and compress gases in small spaces. However, the MOFs developed by this Illinois team are edible, as all materials are nontoxic, biorenewable and available in large quantity, which is an important step in organic hydrogen storage.

### **The ITER will conduct the first experiment with hydrogen in 2019**

The International Thermonuclear Experimental Reactor (ITER) will conduct the first experiment using hydrogen as fuel in 2019, as Osamu Motojima, director general of the project, has confirmed. He has also predicted that the testing process with real and radioactive fuel that will determine the viability of the ITER will start around 2027.

### **Robres will have a pioneering hydrogen plant in Europe**

Robres wind farm will soon host a unique research and development wind turbine. This is a production, storage and conversion of hydrogen plant pioneering in Europe, with an investment of nearly 11 million euros.

Link: <http://www.diariodelaltoaragon.es/NoticiasDetalle.aspx?Id=667072>

### **Cegasa will host evidence of a European project to bring batteries for industry**

The Basque company Cegasa will host the testing of a European project that studies the incorporation of fuel cells into the industrial field. Experts from about thirty companies and technology centres will try to move a total of ten industrial forklifts by a hydrogen fuel cell.

Link: <http://www.elmundo.es/elmundo/2011/01/29/paisvasco/1296298644.html>

### **Ikerlan-IK4 and Fagor do research into a technology that will reduce by 60% energy consumption in urban districts.**

Ikerlan-IK4 and Fagor participate in the FC-District European project that aims to develop energy co-generation technologies for sustainable urban districts that will reduce by 60 percent the energy consumption of these centres.

The system is based on small-scale power generation for these buildings using fuel cells located in the same district, so that its distribution and storage will be more efficient.

FC-District is a project of the 7th EU Framework Programme with a budget of 11.8 million euros and four years length, with the participation of 23 institutions from 11 countries of the European Union.

Link: [http://www.finanzas.com/noticias/economia/2011-01-31/421979\\_ikerlan-ik4-fagor-investigan-tecnologia-reducira.html](http://www.finanzas.com/noticias/economia/2011-01-31/421979_ikerlan-ik4-fagor-investigan-tecnologia-reducira.html)

### **Developed a reactor to convert sunlight into fuel**

American and Swiss researchers have created a small reactor capable of rapidly producing fuel from sunlight, using water, carbon dioxide and cerium oxide. The process is similar to that one used by plants to grow and it is reported in the latest edition of Science magazine.

Link: <http://www.energias-renovables.com/paginas/ContenidoSecciones.asp?ID=14&Cod=22375&Tipo=&Nombre=Noticias>

### **Japan launches the Hydrogen Town project**

The Ministry of Economy, Trade and Industry (METI) has just announced the launch of the Hydrogen Town Project for gas supply to households through "hydroducts". The initiative is part of a more ambitious plan that the Japanese executive has called Hydrogen Energy Social Infrastructure Development Demonstration Project, and whose ultimate goal is to create a hydrogen society.

Link: <http://www.energias-renovables.com/paginas/ContenidoSecciones.asp?ID=14&Cod=22501&Tipo=&Nombre=Noticias>

### **First hydrogen power station in Turkey**

The company Hydrogenics has announced today the award of an electrolyzer to run on a hydrogen station with the capacity to produce 65 kilograms of hydrogen per day. The hydrogen power station will be in Istanbul.

21/01/2011

Link: <http://www.h2euro.org/2011/01/3348>



## Are you interested in HYRREG? Come and join us!

### SPAIN

- Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón

[www.hidrogenoaragon.org](http://www.hidrogenoaragon.org)

Contact Person: Carmen Gonzalo, Jorge Luís

Telephone: +34 974215258

E-mail: [cgonzalo@hidrogenoaragon.org](mailto:cgonzalo@hidrogenoaragon.org)

[jluis@hidrogenoaragon.org](mailto:jluis@hidrogenoaragon.org)

Address: Parque Tecnológico Walqa. Ctra. N-330A, km. 566 - 22197 Huesca.

- Instituto Nacional de Técnica Aeroespacial (INTA)

[www.inta.es](http://www.inta.es)

Contact Person: Mercedes Sánchez Álvarez, Esther Chacón, Loreto Pazos

Telephone: +34 915206545

E-mail: [sanchezam@inta.es](mailto:sanchezam@inta.es), [chaconce@inta.es](mailto:chaconce@inta.es), [pazosl@inta.es](mailto:pazosl@inta.es)

Address: OTRI. Instituto Nacional de Técnica Aeroespacial. Ctra. Ajalvir, km. 4,5. Torrejón de Ardoz. C.P.:28850. Madrid

- Instituto Andaluz de Tecnología (IAT)

[www.iat.es](http://www.iat.es)

Contact Person: Florentina Delgado

Telephone: +34 954468010

E-mail: [fdelgado@iat.es](mailto:fdelgado@iat.es)

Address: c/ Leonardo da Vinci, 2. Parque Tecnológico Cartuja 93. 41092 Sevilla.

- Junta de Castilla La Mancha

[www.jccm.es](http://www.jccm.es)

Contact Person: Patricia Pérez de Castro

Telephone: +34 925247413

E-mail: [pperezd@jccm.es](mailto:pperezd@jccm.es)

Address: Consejería de Educación y Ciencia. Bulevar Río Alberche s/n. 45071. Toled

- Universidad Rey Juan Carlos (URJC)

[www.urjc.es](http://www.urjc.es)

Contact Person: Juan Manuel García Camús

Telephone: +34 914887335

E-mail: [juanmanuel.garcia.camus@urjc.es](mailto:juanmanuel.garcia.camus@urjc.es)

Address: CINTTEC. Universidad Rey Juan Carlos. c/ Tulipán, s/n. 28933 Móstoles. Madrid



## FRANCE

- École des Mines d'Albi Carmaux  
[www.enstimac.fr](http://www.enstimac.fr)

Contact Person: Bruno Grano

Telephone: +33 0563493094

E-mail: [grano@enstimac.fr](mailto:grano@enstimac.fr)

Address: Route de Teillet. 81013 Albi. CT CEDEX 09

- Association PHyRENEES

<http://blogs.enstimac.fr/phyrenees/>

Contact Person: Carole Couhert

Telephone: +33 0563493094

E-mail: [couhert@trifyl.fr](mailto:couhert@trifyl.fr)

Address: Route de Teillet. 81013 Albi. CT CEDEX 09

## PORTUGAL

- Instituto de Soldadura e Qualidade (ISQ)  
[www.isq.pt](http://www.isq.pt)

Contact Person: João Paulo Duarte, Ana Maria Cabral

Telephone: +351 214228100

E-mail: [jpduarte@isq.pt](mailto:jpduarte@isq.pt), [amcabral@isq.pt](mailto:amcabral@isq.pt)

Address: Taguspark. Avª Prof. Dr. Cavaco Silva, nº 33. 2740 - 120 P. Oeiras. Apartado 012.

-Universidade Técnica de Lisboa  
[www.ist.utl.pt](http://www.ist.utl.pt)

Contact Person: Rui Pimenta, Rei Fernandes

Telephone: +351 218417592

E-mail: [ruipimenta@ist.utl.pt](mailto:ruipimenta@ist.utl.pt), [reifernandes@ist.utl.pt](mailto:reifernandes@ist.utl.pt)

Address: Pav. Mecânica I, 2.º, Av. Rovisco Pais, 1049-001. Lisboa

More info available through project's website: [www.hyrreg.eu](http://www.hyrreg.eu)

