

# power expo+

VI Feria Internacional de la Energía Eficiente y Sostenible

VI International Exhibition on Efficient and Sustainable Energy

24-26 septiembre / september 2008

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### Editorial

## Guaranteed success

PowerEXPO is a widely acknowledged shop window for the latest technological developments in efficient and sustainable energies. The 6th edition of PowerEXPO, to be held in the last week of September, will undoubtedly see its consolidation as one of the sector's most prestigious international fairs.

As might be expected of a commercial event of this magnitude and given the constant growth of the energy sector, the 2008 show will be considerably bigger in terms of

exhibiting companies, display space, visiting professionals, business opportunities and above all, the enormous innovations to be on view from all sectors of the industry.

PowerEXPO + 2008 will play host to the complete range of technical innovations in all energy sectors, from the most advanced wind turbine prototypes to the latest advances in fuel cells and the most innovative developments in photovoltaic arrays, to name but a few. The presence of international enterprises interested in the Spanish market is also guaranteed, thanks to the organisation of sales missions to Spain that will provide

abundant business opportunities. In addition, the main associations will take advantage of the event to hold their meetings, seminars and congresses. This will enable them to promote their industrial applications and projects and analyse the state of the art for each technology. Furthermore, it will provide an opportunity to highlight the diverse public and private initiatives in all energy sectors.

All of this, in addition to carefully planned organisation, points to guaranteed success for PowerEXPO + 2008 and a long and productive future for PowerEXPO as an international trade fair.



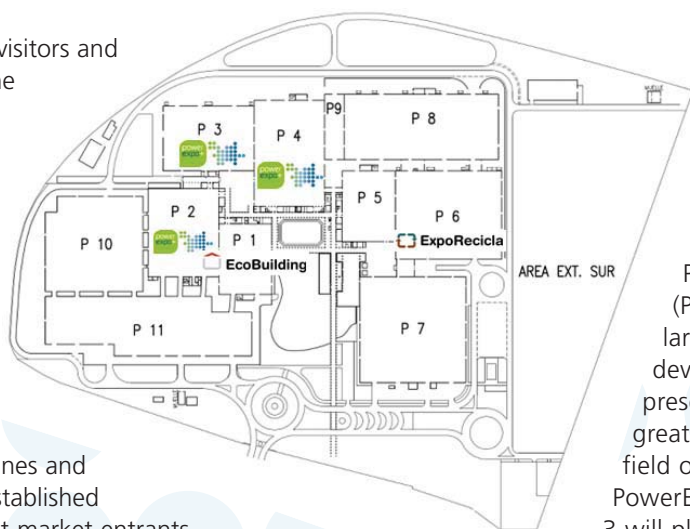
### The Fair

## PowerEXPO 2008: a platform for the complete range of technologies

With more than 10,500 visitors and 458 exhibitors gracing the previous edition, PowerEXPO is Spain's foremost energy fair and it enjoys the utmost recognition and support from the industrial associations. PowerEXPO + 2008 will play host to all that is best in each sector: the most advanced systems, the latest machines and innovations from both established manufacturers and recent market entrants.

The interest in the show amongst those in the energy sectors is emphasised by the astonishing growth in terms of participation and display space take-up. Six months prior to the event, participation is already up 40% on the 2006 edition, which in turn doubled that of the previous edition.

To house the new exhibitors it has been necessary to add pavilion number 2, which is similar in size to the "classic" pavilions 3 and 4. The new hall integrates perfectly with the rest of the exhibition area. There will also be extensive outdoor space in the form of a large square in the midst of the pavilions and this will provide an excellent stage for wind turbine mounting cranes, solar trackers for photovoltaic installations and other heavy



machinery and equipment. PowerEXPO + 2008 revolves around three main energy sectors: PowerEXPO Wind (Pavilion 4, the largest, will be devoted exclusively to presenting all that is of greatest interest in the field of wind energy); PowerEXPO Solar (Pavilion 3 will play host to solar thermal and photovoltaic solar energy and Hall 2 will

house an interesting and innovative demonstration of thermosolar energy, mentioned elsewhere in this Newsletter).

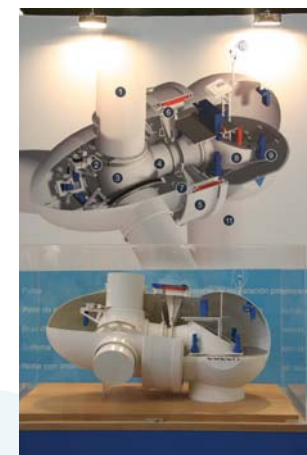
There will also be a special section devoted to hydrogen technologies, described in detail in another section in this Newsletter. It should also be noted that PowerEXPO + 2008 will be held in conjunction with the first edition of EcoBuilding (International Exhibition and Conference on Bioclimatic Architecture, Sustainable Construction and Energy Efficiency in Buildings) and ExpoRecicla (International Fair on Industrial Recovery and Recycling, Waste Management and Waste-to-Value Systems), which will make this the most comprehensive and best attended edition to date.

### Wind Power

## The power of the wind

Wind energy has been a centre piece of PowerEXPO from the outset. As well as being a showcase for the latest wind-turbine models and prototypes, the fair also brings together all the leading players in the sector, including developers, manufacturers, designers, engineers, constructors etc. It also boasts the truly spectacular participation of an auxiliary industry that is becoming more and more integrated into the value chain of the main product, the wind turbine. The sector's total support of and direct involvement in the show must again be emphasised. An example of this great interest is provided by the *Asociación Empresarial Eólica* (Wind Energy Business Association - AEE), which has been working for the last year with the *Instituto Español de Comercio Exterior* (Spanish Institute of Foreign Trade - ICEX) to encourage the presence of Spanish companies in the sector's international forums and to attract companies interested in the development of Spanish wind energy to this country.

With the invaluable cooperation of the ICEX, the AEE will carry out this task at PowerEXPO 2008, by means of trade missions which will have the participation of all the major players in the wind energy business. In addition, within the framework of PowerEXPO and parallel to the commercial activity, the AEE will celebrate its Fourth Wind Energy Technical Seminar. The seminar, which will be attended by some of the most important professional in the country, will feature an in-depth analysis of the current state of the industry, which grew 30% in 2007 and the AEE expects it to grow by 275% in the next five years, in order to meet European Council integrated environmental and energy objectives (the so-called "20" objective: 20% renewables, 20% greater efficiency and a 20% reduction in CO<sub>2</sub> emissions by 2020). The AEE has underlined the sector's determination to work towards meeting these objectives by providing generating capacity of 40,000 MWs on land and between 2,500 and 5,000 MWs at sea by 2020. This would underline Spain's position as the second most important country in the world in wind energy.



## The hydrogen economy and fuel cells

The hydrogen sector is set to take off both technologically and commercially in the near future. It is closely, but not exclusively, linked to the design, manufacture and increasingly generalised use of fuel cells. Indeed, authorities such as The International Energy Agency (IEA) believe that hydrogen will soon play an important role in a worldwide energy revolution and will have an impact comparable to that of the steam or coal engines.

The gateway to a true hydrogen economy has been opened and this is underlined by important advances in E.U. R&D policy regarding hydrogen and fuel cells. The European Council expects to approve a specific regulatory framework in March of this year. Together with budgets for hydrogen (H<sub>2</sub>) and fuel cell (FC) research programmes, these measures represent a long-awaited qualitative advance in this area and the first projects are expected to be started in 2008.



The dynamism of the sector will be reflected at PowerEXPO 2008. For the first time at an industrial and commercial fair in Spain, a wide range of technologies, systems and equipment related to hydrogen and fuel cells will be on view. The fair will bring together more than 20 companies and entities in this sector and they will occupy

almost 500 square metres of exhibition space. This extraordinary event in terms of technological innovation in its commercial and industrial context is the result of an initiative of the *Fundación*

*para el Desarrollo de las Nuevas Tecnologías del Hidrógeno de Aragón* (Foundation for the Development of New Hydrogen Technologies in Aragón). The Foundation is sponsored by the Aragón Ministry of Industry and it is making a decisive contribution to ensuring that hydrogen technologies take the all-important step from R&D&I to industrial and commercial development in this fascinating field of enormous potential.

### CONAPPICE 2008 at POWEREXPO



Also within the framework of PowerEXPO 2008, the Asociación Española de Pilas de Combustible (Spanish Fuel Cell Association - APPICE) will hold its 3rd National Fuel Cell Congress (CONAPPICE 2008). The latest advances at fundamental and applied levels will be on display and information on research studies and the latest lines of research will be presented. The congress will also serve to favour new cooperation opportunities for future projects. This third edition of CONAPPICE will consolidate its position as Spain's reference fuel cell congress and will once again bring together the different sectors involved: research centres, technological centres, private enterprises and public authorities.

The CONAPPICE agenda will revolve not only around the basic aspects of electrochemical energy conversion but also related matters such as component development and the mounting and functioning of devices and systems, including low and high temperature technologies. Several sessions will be devoted to the production and storage of hydrogen and the presentation of experiences in diverse industrial applications.

## Photovoltaic solar energy, a wealth-generating industry

According to data recently published by the *Asociación de la Industria Fotovoltaica* (Photovoltaic Industry Association - ASIF), photovoltaic solar energy attracted investments of around EUR 5,000 million in 2007, taking into account electricity production installations (EUR 2,500 million), new equipment factories (EUR 400 million) and the growth in the market value of listed companies related to the sector.

The sector has created 23,000 jobs both directly and indirectly, and more than 15,000 people now have photovoltaic installations. This is indicative of society's enormous interest in this source of energy. Despite the strong growth in 2007 in photovoltaic energy, 440% with respect to the previous year, this technology only accounts for 0.05% of the country's energy requirements.

This means a total of 593 MWs installed which would satisfy the electricity demands of about 210,000 homes. The ASIF believes that the market and the national industry are now big enough for the rapid consolidation and price reductions which would make this technology a massive source of electricity production.



Foto Fuente: CENER

However, a stumbling block is the lack of specific regulations to substitute the existing legislation due to expire in September of this year. This has begun to freeze investment in the sector and therefore, the ASIF and the *Asociación de Productores de Energías Renovables* (Association of Renewable Energy Producers - APPA), have highlighted on numerous occasions the need to reopen discussions between the sector and the public administration in order to draw up the regulations urgently required by the photovoltaic solar energy industry.

In this respect, the photovoltaic sector proposes annual growth of a very reasonable 20% per annum, thanks to a model based on high-quality installations of less than 10MWs. This would encourage the incorporation of the technology into buildings and give rise to a price reduction of between 10% and 15% by October 2008. Subsequently, there would be an annual reduction of 5% per annum from 2010 with periodic reviews.

## Thermosolar energy at PowerExpo

High and low-temperature solar thermal energy, known as "thermosolar" energy is undoubtedly an alternative energy of great importance. It is renewable and has a very high installed capacity (dozens of megawatts per plant). These installations also feature a high degree of technological innovation and are capable of concentrating and harnessing solar energy and converting it to mechanical energy and ultimately to electrical energy. On the other hand, considerable investment is required due to the size of projects.

Spain is at the forefront in this technology worldwide, thanks to the great drive towards technological innovation and the heavy investment of several of the country's biggest energy enterprises. The first and most advanced thermosolar plants are being built in Spain and the market leadership gained as a result of this experience will lead to the successful development of new projects in other countries where an abundance of solar radiation coincides with a pressing need for energy.

Thermosolar energy will be represented at PowerEXPO 2008 by its active and highly efficient association, Protermosolar, and by several of its leading companies. This potent technology will arouse great interest due to its high level of innovation and the attractiveness of related business opportunities. PowerEXPO will provide the occasion to follow at close quarters the development of a ground-breaking industry on the world energy stage.

## Energy management in buildings

At the last edition of PowerEXPO, we witnessed the emergence of the energy manager, a key enterprise or institution charged with ensuring energy efficiency in buildings, whether isolated or grouped together in neighbourhoods or eco-cities.

The energy manager's mission is to attain the highest possible efficiency in energy production and consumption within the residential sector, the largest energy consumer, ahead of both transportation and industry. This relatively new but growing activity will once again be well represented at PowerEXPO + 2008, reflecting the importance of its role in the design, implantation, administration and even financing of the entire energy installation.

The fair will offer the opportunity to see new

systems and equipment for the generation and use of energy, both in housing and non-residential buildings (collective generation/individual use, cogeneration by means of fuel cells, etc.). Also on display will be new integrated energy management methods and systems. Of great importance in this respect is EcoBuilding, co-located with PowerEXPO, due to the synergies of the two events and their contribution to energy efficiency in buildings.



If you would like to receive more information on the coming International Energy Conference and Exhibition PowerEXPO+, in September of 2008, please contact:



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Stand-alone and grid-connected photovoltaic installed capacity in Spain

