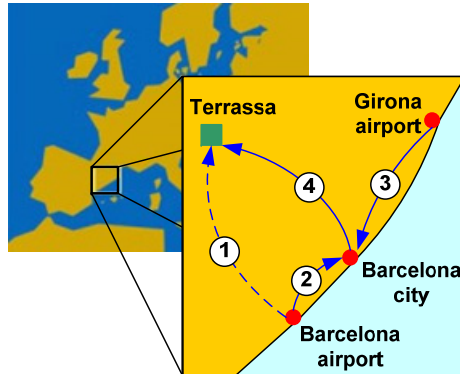


How to get Terrassa-Barcelona, Spain

Terrassa is a 250.000 habitants city placed at 28km from Barcelona city. The two airports closer to Terrassa are:

- **Barcelona Airport (BCN)**, placed 10km south of Barcelona city and 40km from Terrassa
- **Girona Airport (GRO)**, placed at 110km north of Barcelona city and 80km from Terrassa.



Bellow, several methods are suggested to get Terrassa.

• From Barcelona airport direct to Terrassa.

- The fastest way to get to Terrassa from Barcelona airport is to take a taxi (aprox. 60 €).

• From Barcelona airport to Barcelona city.

- Take a train operated by RENFE. There are trains every 30 minutes. You need to get off in the city centre at the station called "Plaça Catalunya".
- Take bus called Aerobus. There are buses every 12 minutes. They operate as far as the main station "Plaça Catalunya"

◆ From Girona airport to Barcelona city.

- Take the bus line provided by Ryan Air with Barcelona Bus. This is a direct public bus to Barcelona city centre. The bus leaves after each Ryan Air flight arrival.

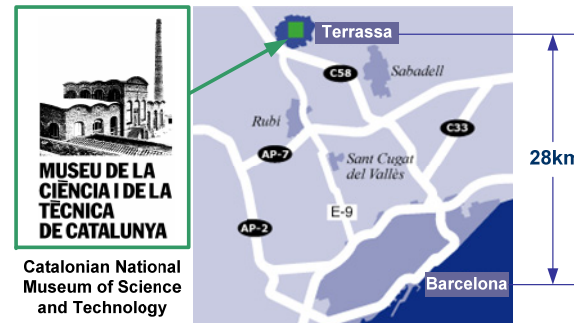
◇ From Barcelona centre to Terrassa.

- The most relaxing way to arrive to the symposium building in Terrassa from Barcelona is to take a taxi (aprox. 40 €).
- Take a train operated by either RENFE or FGC at the "Plaça Catalunya" station. There are trains to Terrassa every 30 minutes and takes 40 minutes. Terrassa is the end of the line. The symposium building is within walking distance from the train station.

Venue

The symposium will be held in the facilities of the Catalanian Museum of Science and Technology (Museu de la Ciència i de la Tècnica de Catalunya - mNACTEC)

Address: Rambla d'Ègara, 270
08221 Terrassa-Barcelona, Spain



Language

All presentations will be in **English**.

Fee

The registration fees include lunch, coffee/cakes and seminar handouts. The registration fees are:

200 € for industry people

100 € for university staff

Free attendance for accredited MSc and PhD students (only coffee/cakes included for students).

Registration

No later than **22 August 2009** by visiting

<http://www.terrassa.net/ecoinnovacio/vestas.html>

Registration Officer: María Diaz

Accommodation

For hotel information and booking, you may visit either

<http://www.afiniahoteles.com> to stay in Terrassa

(there is a special offer for the symposium attendees)

or <http://www.barcelona.com> to stay in Barcelona City.

Further information

Jordi Rull

International Relations

Email: symposiuminfo@terrassa.cat



UNIVERSITAT POLITÈCNICA
DE CATALUNYA

Vestas
No.1 in Modern Energy



Joint IAS / PELS / IES Danish Chapter

The Vestas Power Programme

Definitively, wind power is a right choice and is here to stay for the future. This entails a continuous effort to put in practice new concepts to make wind power, the **Modern Energy**, the preferred sustainable supplement to oil and gas. To lead the way, Vestas has taken an important step in the developing of the wind turbines and wind power plants of the future through the establishment of a new strategic collaboration with Aalborg University (AAU), Denmark. This research programme, entitled the “**Vestas Power Programme (VPP)**”, was officially launched on the 31st of August of 2007 by the signing of a collaboration agreement regarding the largest and most comprehensive partnership ever made between a wind turbine producer and a university. The budget of the VPP is around 6 M€ of which Vestas covers 67% and the rest is covered by the AAU.

With a 20% market share in 2008, Vestas is the world leader in delivering **Modern Energy**. Vestas has already installed over 38,000 wind turbines in 63 countries and five continents and it is installing a new turbine every five hours. In fact, Vestas turbines generate more than 50 million MWh a year or enough power to supply millions of households. The VPP provides participant with a unique opportunity to develop the highly specialist competences that the industry is looking for, while simultaneously drawing attention to the unique career opportunities offered by the rapidly developing global wind power industry.

The academic research activities of the VPP are leded at the highest international standard in the field of wind power generation by the Department of Energy Technology (IET) at the AAU -a strong research institute, acknowledged by the European Power Supply Manufacturers Association as the second research institute in the top of 2007. The research group on Renewable Electrical Energy Systems (REES) at the Technical University of Catalonia (UPC), Spain, participates in the VPP in partnership collaboration with the AAU.

Research Topics

In order to achieve its goals, the Vestas Power Programme will push the wind power technology to even higher levels of reliability and functionality enabling higher renewable power generation. The programme will cover three main topics:

- Power Electronics
- Power Systems
- Electrical Energy Storage for Power Systems

Programme Facts

Vestas Professor in Power Electronics. The professorship in “Power Electronics for Renewable Energy Systems” is filled by Professor Remus Teodorescu from IET.

Vestas Scholarships. Five MSc students are sponsored by Vestas each year. Through the Vestas scholarships, IET wishes to make the new Master Program in Energy recognised as one of the best in the World.

PhDs and PostDocs. The main research in the VPP is carried out by 10 PhD students and two PostDocs. Some of the ongoing PhDs topics are:

- Control of grid converter in large WTG
- High power density grid converter for large WTG
- Wind power plant control for HVDC connection
- Wind power plant control for HVAC connection
- FACTS based Connection of WPP to the Grid
- Storage Systems for Large WTG

Guest professors. Worldwide acknowledged experts are invited as guest to take part in the VPP.

The **Advisory Board** of VPP is:

- Rick de Doncker - RTWH Aachen Univ./E.ON
- Dushan Boroyevich - CPES Virginia Tech
- Marian Kazmierkowski- Warsaw Univ. of Tech.
- Deepak Divan - Georgia Inst. of Tech.
- Ned Mohan – University of Minnesota
- Leon Tolbert - Univ. Tennessee
- Edson Watanabe – Federal Univ. of Rio de Janeiro
- Jose Rodriguez – Tech. Univ. Federico Santa Maria

The symposium will be technically sponsored by **IEEE IAS / IES / PELS Danish Chapter**, and chaired by the VPP coordinators: Remus Teodorescu (IET), Philip C. Kjær (Vestas) and Pedro Rodriguez (UPC).

You may keep yourselves updated at www.iet.aau.dk

The symposium received local support of:

Ajuntament  de Terrassa 

 Generalitat de Catalunya
Departament de Cultura
i Mitjans de Comunicació


MUSEU DE LA
CIÈNCIA I DE LA
TÈCNICA
DE CATALUNYA

Programme

9:00-9:30h	Registration and Reception
9:30-11:00h	<ul style="list-style-type: none"> • Welcome and overview of the VPP Research Projects in Wind Energy Systems Prof. Dr. Remus Teodorescu. Aalborg University – AAU, Denmark • PhD projects supervision, a research synergy between the AAU and the UPC Dr. Pedro Rodriguez. Technical University of Catalonia – UPC, Spain • Wind research in the Department of Energy Technology at the AAU Prof. Dr. Frede Blaabjerg. Dean of the Aalborg University – AAU, Denmark • Vestas Wind Systems, n°. 1 in Modern Energy Dr. Philip C. Kjær. Chief Specialist for power plants Vestas Wind Systems, Denmark
11:00-11:30h	Coffee-Break
11:30-13:00h	<ul style="list-style-type: none"> • New Trends in Distributed Energy Systems Prof. Dr. Rik W. De Doncker. Director E.ON Energy Research Center, RWTH Aachen University, Germany • Integrated Power Conversion Systems Prof. Dr. Dushan Boroyevich. Co-Director of the Center for Power Electronics Systems, Virginia Tech, USA
13:00-14:00h	Lunch
14:00-15:30	<ul style="list-style-type: none"> • Multi-MW Power Converters for Wind Turbines Dr. Bernhard Eggert. CONVETEAM, the power conversion company, Berlin, Germany • Energy Storage for Distributed Generation Dr. Ion Etxaberrria- IKERLAN, Basque Country
15:30-16:00h	Coffee-Break
16:00-17:30	<ul style="list-style-type: none"> • Control and Modulation of PWM Converters for Renewable Energy Prof. Mariusz Malinowski, Warsaw University of Technology, Poland • System Challenges for Accommodating Large Amounts of Wind Power: Offshore Solutions Prof. Marta Molinas, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Norway
17:30-17:45h	Closing ceremony
Closing words by the Director of the UPC and the Mayor of Terrassa	