

# Blades: design, manufacture, verification/diagnosis, maintenance and recycling

Madrid, 24<sup>th</sup> of September 2015

## 09h00 Opening

### 09h15 **Design, modularity and transport: New concepts**

Chairman:

- **New designs to improve production and aero elastics limitations.** Tupac Canosa. Senior Project Manager. Etulos Solute
- **Modularity, standardization and certification of blades and components. Testing procedures.** Iñaki Nuin. Resp. for the Structure Design of the Turbines Analysis and Design Service of the Wind Energy Department. CENER
- **Blade transport and assembly solutions.** Domenico Cannatà, Director Func. Lead Blade; Francisco Javier Martín Fernández, Blades Engineer Specialist; Marcos Rodríguez Iglesias, Transport Coordinator EMEA. Vestas

### 10h15 **Analysis and balancing**

Chairman: Mauro Villanueva. Technology Development Director. Gamesa

- **Thermo graphic analysis of composite materials applied to blades.** Enric Vila Papell. R&D Director. EiNA
- **Predictive maintenance, the importance of processing and the correct analysis of inspection data.** Carlos Bernabéu. CEO. Arborea Intellbird
- **Balancing systems.** Carlos Bermúdez. Technical Director and partner co-founder. GDES Wind

### 11h15 **Coffee break**

11h45 **Health and Safety.** David Salas. Resp.of International projects, blade repairing. WKA Blade Service (GES Group)

- Applicable criteria to safety and assembly
- Protection systems against lightning when turbines are operating
- Safety criteria in the operation and maintenance of confined spaces
- Safety during inspection and diagnosis
- New inspection procedures (NDT)

**12h15 Manufacturing: Cost reduction and progressive automation\***

Chairman: Rafael Zubiaur. CEO. Barlovento Recursos Naturales

- **Levelized CoE reduction through innovative blade design, material and industrialized manufacturing solutions.** Birgit Pedersen. Senior Project manager. LM WIND POWER
- **State of operating blades: assessment methods, operation follow-up.** Pedro Muñoz. Director de Ingeniería. AEROBLADE
- **New designs and manufacturing of blades to guarantee life extension and improve production.** Carlo Durante. CEO. eTaBlades

**13h15 The use of lifting devices and assembly tools**

Chairman: José Ginés Carrasco. R&D Manager. EROM

- **New maintenance methods and solutions: how to download blades with one crane.** Juan Antonio Rodríguez. Business Development Manager Services. Gamesa
- **Blade by blade assembly equipments.** Óscar Sierra. Director. Pinilla Wind Tools

**14h00 Lunch break**

**15h30 Inspection and fault diagnosis procedures**

Chairman: Kilian Rosique. Technical Director. AEE

- **With optical means from the ground.** Alfredo Torre. Blade specialist from the Service department. Alstom
- **Drones.** Raúl San Miguel. Operations Manager. Availon
- **Ropes.** Ander Lasa. Resp. Wind and Training areas. Asaken

**16h30 Failure detection, repair and impact on costs**

Chairman: Enrique Soria. Renewable Energies Director. CIEMAT

- **Methods to repair and replace blades, methods to detect early faults and the effects of season variation. Case studies.** Jorge Córdoba. Services Director. Ingeteam Service
- **Blade maintenance, contribution to wind farms OPEX.** Eduardo García. Head of Central Maintenance. EDP Renewables Europe
- **Condition monitoring of rotor blades: damages, ice and imbalance detection.** John Reimers. Director Marketing Condition Monitoring. Bosch Rexroth

**17h30 Round table: Blades recycling and reuse**

Chairman: Alberto Ceña. Technical Services Coordinator. AEE

- Enrique González. Technician at the Studies Dept. FCC Ambito
- Marisa Alvarado. Director of Life BRIO Project. Iberdrola Ingeniería y Construcción
- David García Estevez. Researcher of the Construction materials area. Tecnalia
- Ángel Caballero. Deputy Vicepresident of Technology transfer. CSIC
- Félix A. López. Scientific researcher. CSIC

**18h30 End of day**

## General Information

### Date

24<sup>th</sup> of September

### Venue

Ayre Gran Hotel Colon  
Pez Volador, 1  
28007 Madrid

### Registration fees

Non members	195 € (+ VAT 21%)
AEE members	325 € (+ VAT 21%)

### Registration fee includes:

- Conference attendance,
- documentation,
- coffee,
- lunch

### Registrations

Register on AEE's website [www.aeeolica.org](http://www.aeeolica.org)

### More information

**Asociación Empresarial Eólica**

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