

# PDM AND CBM FOR WIND TURBINES SEMINAR (16 HOURS)

1st convocation: March 20 to 21 2nd call: September 18 to 19

## SCHEDULE

Mornings: 9:00h to 14:00h | Afternoons: 15:00h to 18:00h

## PRICE

Course: 900€ + VAT (Includes documentation, lunch and coffee on breaks)

## PLACE

TSI's headquartes in Madrid

Course Director: Mr. Publio Beltrán Palomo Trainers: Engineers specialized in noise and vibrations

#### Maximum number of attendees: 15

For more than two attendees per company, a 15% discount will be applied. Priority booking for TSI clients.

## **KEYS TO SUCCESS**

- Soundness and Experience: Course derived from the MPA course and which has been given since 1983 with the participation of 1,500 companies from the national and foreign fabric.
- Training Scheme: "Aseptic Training" independent of commercial brands aimed at the Qualification of Personnel with an open and practical approach. "The identification and resolution of faults does not depend on one or another type of equipment, but on the adequate qualification of the personnel.
- Training Staff: Made up of specialised TSI personnel with more than thirty-five years of experience and backed by more than 2,000 studies of Fault Diagnosis and Resolution.
- Continuous Training: Participation in this Course leaves you with a "permanent open window" to a "List of TSI Specialists" who will attend and support your queries on equipment handling, diagnosis and troubleshooting.

"Take the opportunity to learn with your real cases and have a preliminary diagnosis at the end of the course"

# **COURSE CONTENT**

- 1. INTRODUCTION.
- 2. TOOLS FOR OPTIMISING THE OPERATION OF WIND FARMS.
- 3. PREDICTIVE MAINTENANCE OF FAILURES -MPA- IN WIND TURBINES.
- 4. BASIC CONCEPTS OF VIBRATIONS AND COMPLEMENTARY TECHNIQUES.
- 5. STAGES OF PREDICTIVE MAINTENANCE OF FAILURES -MPA- ITS DEVELOPMENT.
- 6. REGULATIONS.
- 7. TYPICAL FAULTS IN WIND TURBINES: THEIR IDENTIFICATION.
- 8. IMPLEMENTATION OF MPA ADAPTED TO WIND FARMS
- 9. REAL CASES (\*)
- 10. WIND FARM CHARACTERISATION: DETERMINATION OF REAL LOADS ON MECHANICAL COMPONENTS.
- 11. CONTINUOUS PROTECTION AND MONITORING. APPLICATIONS TO OFFSHORE WIND ENERGY.
- 12. CONCLUSIONS AND EVALUATION OF THE COURSE.

#### PRACTICAL DEVELOPMENT

As a complement to the theoretical presentation, participants take part in working groups in the resolution of Real Practical Cases (\*). A certificate of attendance will be awarded.

(\*) Note: The resolution of the practical cases provided by the attendees requires the supply of measurements (spectra) and tests carried out. TSI undertakes to attend each and every one of the documented cases that are presented

CUSTOMER SATISFACTION INDEX 9,00 /10

## **CONTACT US**



+34 **913 45 97 30** 



mww.tsisl.es

AVDA. PÍO XII, 44 - EDIFICIO PYOMAR TORRE 2 - BAJO IZDA. 28016 MADRID - TSI@TSISL.ES

# **ADDICIONAL INFORMATION**





Possibility of taking the course online or face-to-face

#### WHO IS IT AIMED AT?

Wind farm maintenance technicians, wind farm operation managers, project and commissioning engineers, with special application to new offshore wind installations.

It is not essential to have previous knowledge of this methodology and its tools.

### **FORMALISATION OF ENROLMENT**

Reservations can be made by telephone or e-mail. Subject to advance payment of the fee by cheque or bank transfer.

#### **CANCELLATION POLICY**

Cancellation up to 20 working days before the start of the course will be refunded minus a 15% administration fee, plus the cost of the exam. The reservation can be occupied by another person at no additional cost.

For ADAPTED COURSES, please contact TSI