

innINTERESTING

INNOVATIVE FUTURE-PROOF TESTING METHODS FOR
RELIABLE CRITICAL COMPONENTS IN WIND TURBINES



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MEMBER OF BASQUE RESEARCH
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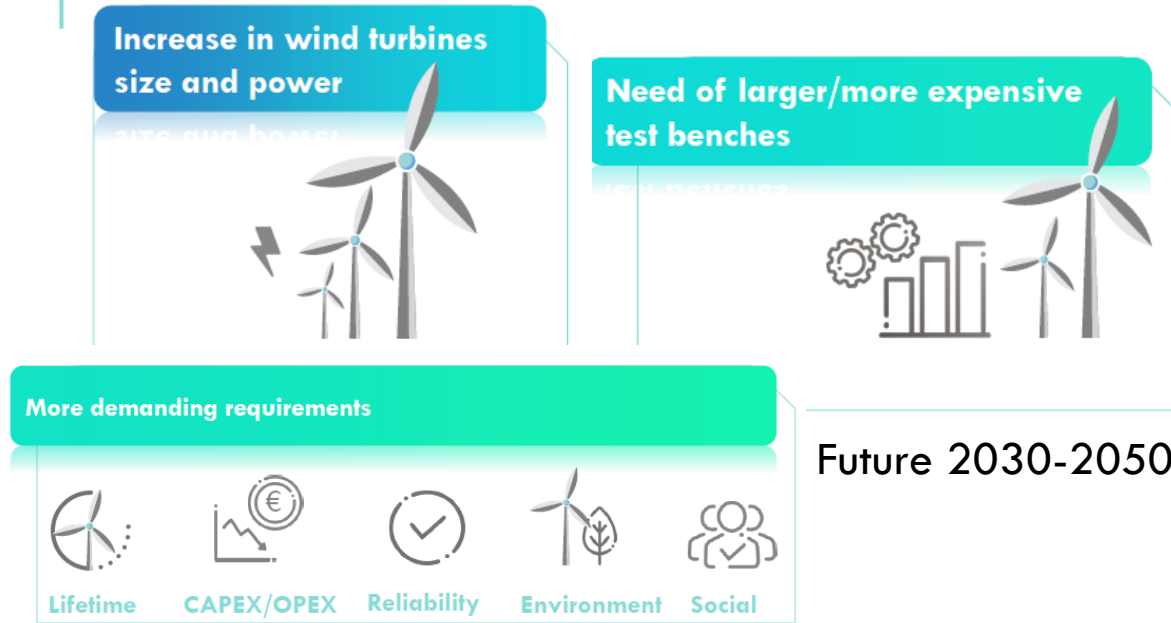


Conclusions, future lines and possible
developments based on what has been learned



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REVIEW OF THE OBJECTIVES



The ININTERESTING Project aims to develop a novel hybrid methodology and breakthrough design tools to assess reliability of larger wind turbine critical components without the need of building larger tests benches in the future



Objectives:

develop design tools

bring two new ground-breaking designs of real wind turbine components to a TRL-4

Case Study 1

Case Study 2

Case Study 3

reduce the environmental and economic impacts

Replication of project results to other components and sectors

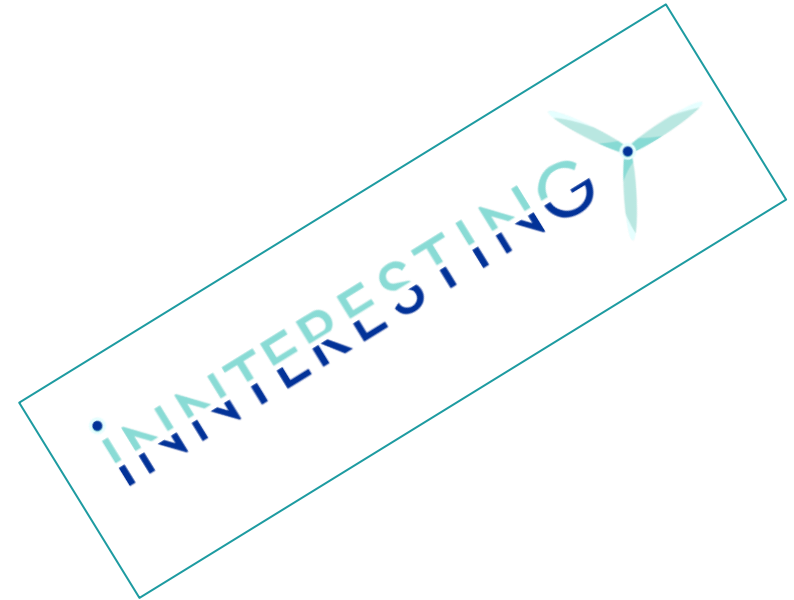
FINAL TECHNICAL CONCLUSIONS



- ✓ For each case study the ININTERESTING APPROACH is developed: the methodology is validated.
- ✓ The ININTERESTING APPROACH not only test or validate the component:
 - Provides knowledge about **material's variability, manufacturing processes effect and specific failure modes** that otherwise would be very expensive to obtain.
- ✓ The downscale tests are a tendency (cheaper/faster): upscaling techniques are necessary
→ otherwise the **new designs will be non-conservative.**
- ✓ A New concept should be included in the industry: **probability of failure of the components**
→ instead of deterministic damage value.
- ✓ The new technologies, artificial intelligence, machine learning... can be used for prediction:
→ but understanding what is happening physically is really important!

MORE RESEARCH IN UPSCALING TECHNIQUES MUST BE DONE

FUTURE TREND





KU LEUVEN

SIEMENS



moventas

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THANK YOU!



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