

RAVE Workshop 2021 – Opening remarks

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Supported by:



on the basis of a decision
by the German Bundestag

Supervised by:



Co-ordinated by:



Measurements:



Welcome!

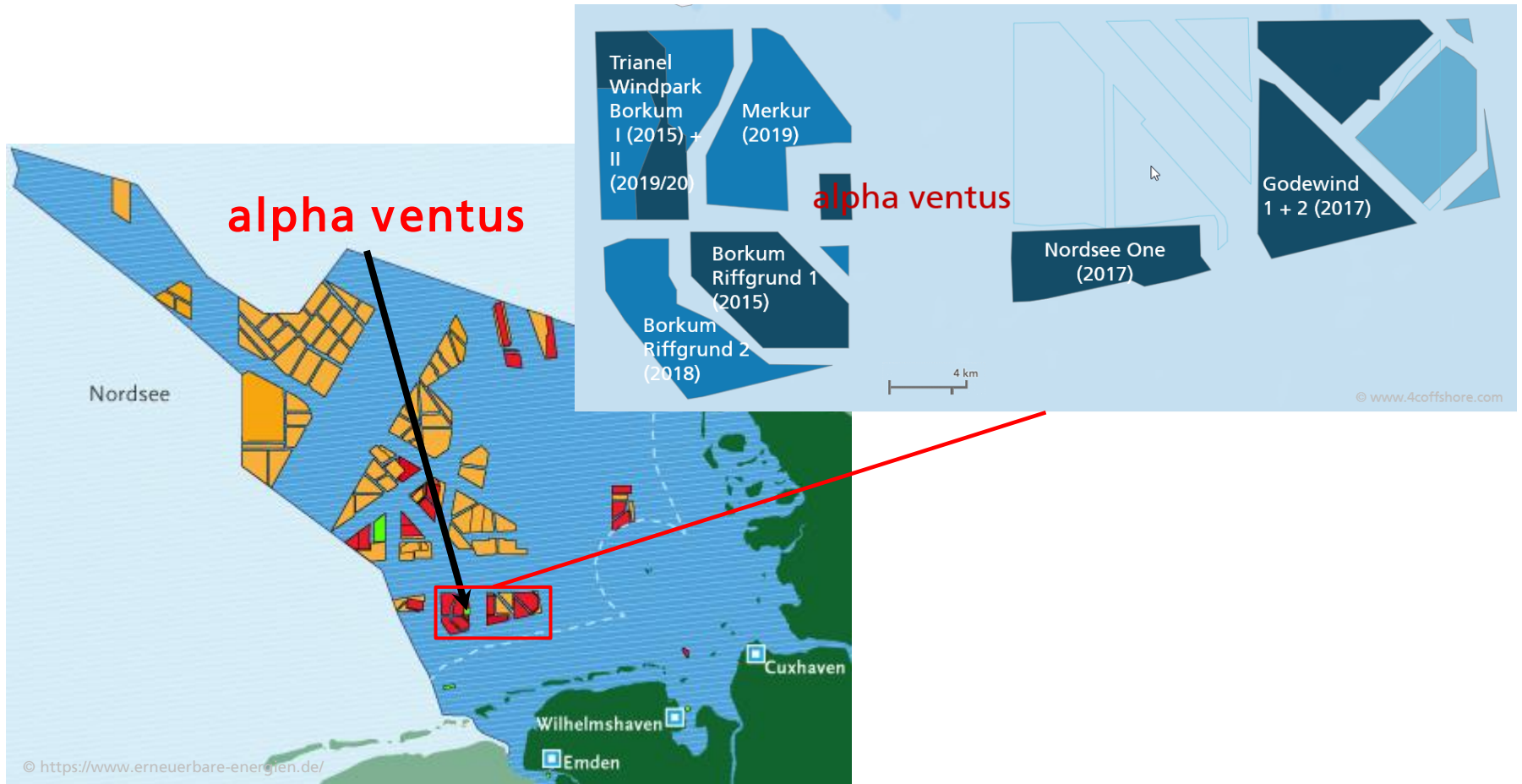
... to the RAVE workshop 2021

- What is RAVE and alpha ventus?
- What measurements are available and how?
- How is the workshop today organized?

Offshore test field alpha ventus



Offshore test field alpha ventus



RAVE – Research at alpha ventus

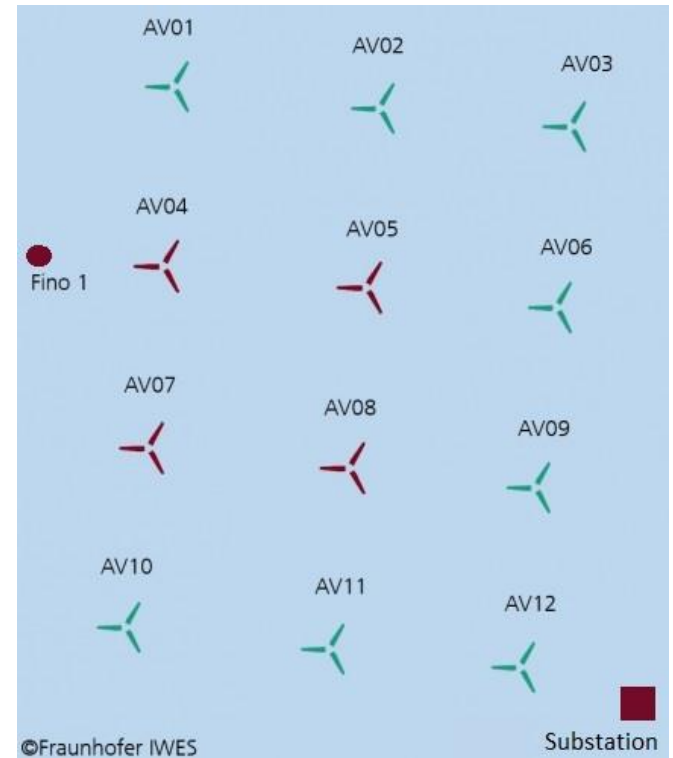
- Accompanying research at the alpha ventus test field
- Funded by the Federal Ministry for Economic Affairs and Energy (BMWi)



More -> next presentation

RAVE measurements

- 4 turbines instrumented
- 100m met mast Fino 1 in direct vicinity
- Oceanographic measurements at different locations
- Electrical measurements on offshore and onshore substations
- SCADA and turbine controller data
- Special measurements (noise,...)
- up to 11 years time series... ongoing



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Data access

- RAVE is funded by the German government with the aim of supporting the development of offshore wind energy through research
- Data access procedure has been changed 2019, data accessibility greatly improved
- However, data is confidential and a standard data usage agreement has to be signed (available on homepage)

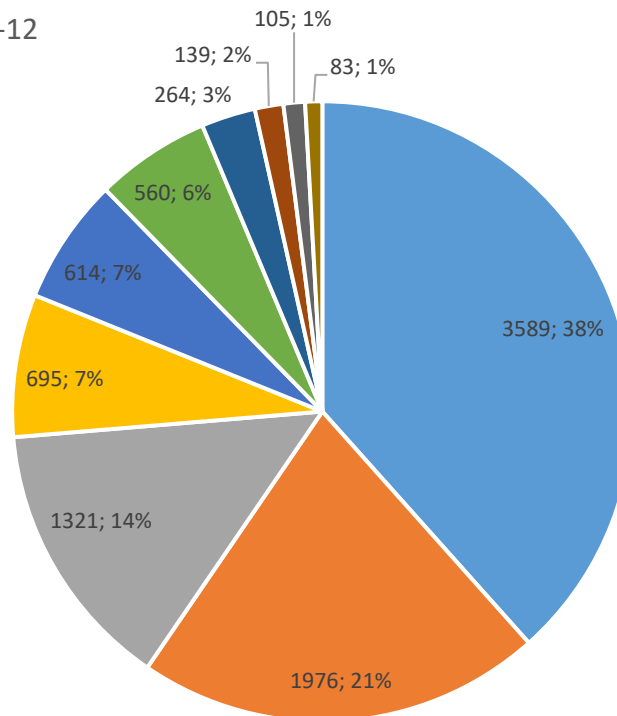
RAVE Database / Statistics



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

Number of individual
sensor downloads by sensor group

- Operating Data Interface M07-12
- Operating Data Interface R1-6
- Strain-Gauge
- Profibus M07-12
- Acceleration Measurement
- Meteorology
- Nacelle and rotor
- Hydrography
- Electrical measurements
- Other



Number of users: **45**

- Origin:
 - 55% Germany
 - 15% Europe
 - 30% International
- Institution:
 - 45% University
 - 35% Industry
 - 20% Other Research

Workshop organisation

3 sessions

09:00 CET Opening session

10:30 CET Weather effects in alpha ventus

13:00 CET Turbine loads

! There are **different links** for each session (see homepage) !

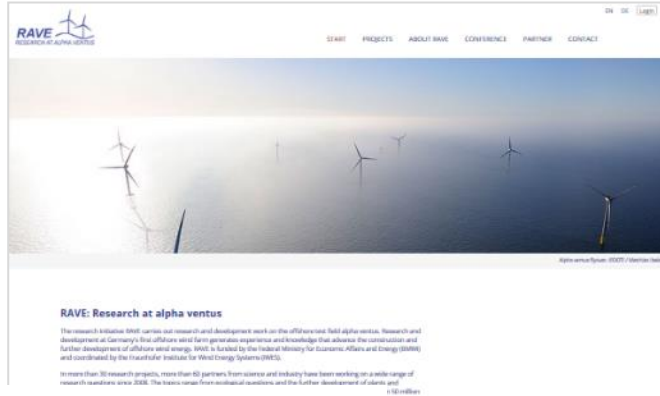
Questions and answers

- Please post your questions during or after each talk in the Q&A chat
- No oral interaction is possible

Slides will be available after the workshop, but no videos

More information about RAVE...

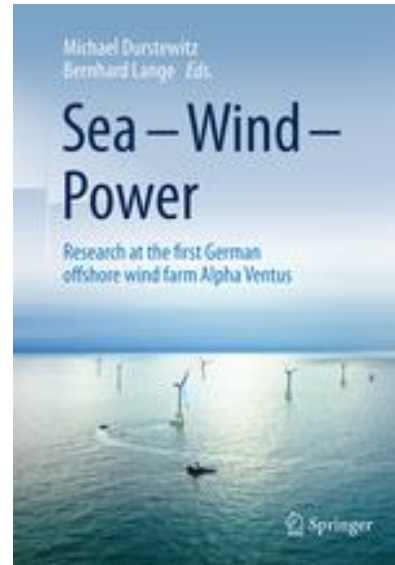
RAVE Homepage:
www.rave-offshore.de



RAVE video:
DVD and youtube



RAVE book (Springer):
Sea – Wind - Power



Offshore wind R&D conferences
2012, 2015 and 2018

RAVE Mini-Symposium at the WESC

- Wind Energy Science Conference: 25 – 28 May 2021 as web conference
- Mini-Symposium ‚Research at Germany’s first offshore wind farm alpha ventus‘
- Contributions are very welcome!
- Deadline for abstracts is 31. January...
- ... or contact the chairs Kai Herklotz or Bernhard Lange



Wind Energy Science Conference 2021
Theme 10: Emerging Technologies and Special Sessions



Thank you...

...to the BMWi for the funding of RAVE:



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... and to you for your attention!

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