

IEA Wind TCP Task Proposal

Quiet Wind Turbine Technology



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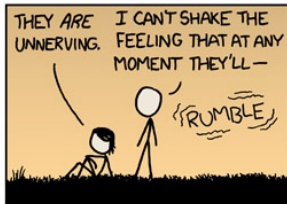
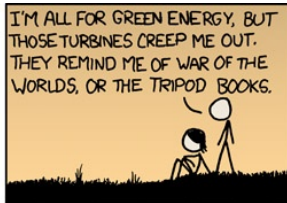
- Societal acceptance key to successful adoption.



Taken outside the Westbahnhof in Vienna



- Acceptance issues are common.



Excerpt from xkcd.org

New IEA Task on QWTT



- Proposed in 2015 in Paris.



IEA ExCo 76.



- A new IEA Wind RD&D research collaboration to accelerate the coordinated development and deployment of quiet wind turbine technology.

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1. Exchange learning;
2. Identify and report best practice in the measurement and assessment of sound and noise;
3. Develop an IEA *Recommended Practice* contributing to the ongoing development of IEC standards for wind turbine sound and noise.



1. IEA Recommended Practice on wind turbine sound and noise;
2. Guidance and reference for policy makers and manufacturers;
3. Authoritative source of wind turbine sound and noise information.



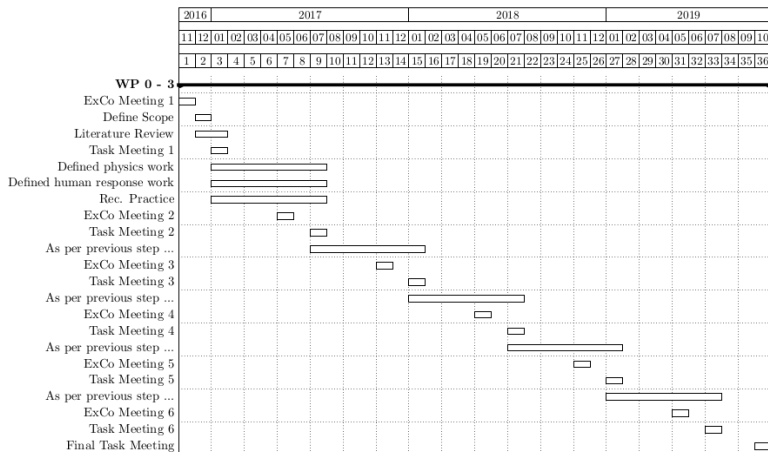
End 2016 - 2019 (or start 2017 - start 2020).



- ▶ WP 1: Interdisciplinary Education and Guidance
- ▶ WP 2: Technical Work
 - ▶ Physics of Noise:
 - Measurement and Data Analysis
 - Modelling
 - Wind Turbine Design
 - ▶ Human Response to Wind Turbine Noise:
 - Physiological Effects
 - Psychological Effects
 - Public Engagement
 - ▶ Shared Resources
- ▶ WP3: Recommended Practice



The guideline will be the core output of the Task for policy makers and the industry, i.e. acousticians, manufacturers and so on.





- ▶ Ireland (TCD), Denmark (DTU), Sweden (KTH).
- ▶ Many others in discussions to join, e.g. Finland, UK, Germany.
- ▶ €61,977 per annum.
- ▶ ≥ 6 participants or \leq €10,000 per annum per country.
- ▶ ≥ 6 ideal - countries split costs.
- ▶ Task defined by participants; aligns existing work.
- ▶ Now is a good time to get involved.



Description	Total Amount (Euro)	Annual Amount (Euro)
Half-salary	159,429	53,143
Travel to ExCo meetings	10,500	3,500
Travel to Task meetings	10,500	3,500
Website construction	5,000	1,667
Website hosting	500	167
Total	185,929	61,977

Table: Projected costs.



This draft proposal was circulated to potential participants following the 77th ExCo. We met with potential participants at Wind Turbine Sound 2016 [1] with a view to a kick-off meeting by January 2017.

In the first year we plan:

- ▶ Two Task meetings and two ExCo meetings - interdisciplinary discussion as part of WP1.
- ▶ Define scope/initial focus and coordinate technical work among participants, i.e. output of WP1, topics of focus for WP2.
- ▶ Produce first edition of the draft recommended practice, i.e. first output of WP3.
- ▶ Grow the Task and align closely with other international efforts, e.g. RUK, IoA, IEC.

Thank You - Contact Details



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WIND EUROPE, *Wind Turbine Sound 2016*.

Gdańsk, November 17 - 18, 2016.

<https://windeurope.org/workshops/wind-turbine-sound-2016/>.



With thanks to:

- ▶ Sustainable Energy Authority of Ireland.
- ▶ IEA Wind.
- ▶ Wind Europe.
- ▶ Potential participants and WTS community.



Among others: **engineers**, physicists,
environmental scientists, **acousticians**,
psychologists, *physiologists*, **audiologists**,
sociologists and *policy makers*.

Some Questions You May Have #1



Q: Has it been done?

A: Yes and No.

- ▶ Much work internationally.
- ▶ Many international examples of lack of guidance/understanding of sound from wind turbines - community, govt., manufacturers, developers and operators.

Some Questions You May Have #2



Q: Is an end point possible?

A: Not exactly but it's important to chart the unknown.

- ▶ Wind community's responsibility to bend over backwards to do its best.
- ▶ Bottom out issues around amplitude modulation, infrasound etc.
- ▶ Sound related questions actually/perceived to be open - many of these.



How do I get involved?

- ▶ Contact us and/or your local IEA Wind delegate.
- ▶ See www.ieawind.org/contact_list/ExCoMembers.pdf
- ▶ Your country needs to agree to contribute to financing the task. It's an even split, i.e. the more countries on board, the better.
- ▶ IEA Tasks are very democratic.