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Title: FAIR and open wind energy data

Irregular and increasing emissions of greenhouse gases in recent years are the most important cause of global warming and climate change. Rising temperatures, along with climate change, will inevitably have a negative impact on economic activity and international trade, and consequently on the quality of human life. So reducing GHGs is a high priority goal worldwide.

In recent years, research groups around the world have been examining the forces that are transforming the production, demand, and impact of the energy industry. This research focuses on profound changes in technology and energy resources, which may revolutionize the energy system and create opportunities with significant challenges.

The size and scope of today's energy systems are so vast that research in this field requires modern data management methods and reliable databases. With the goal that they should be findable and re-usable for downstream investigations, alone or with a combination of newly generated data.

Wind energy is one of the sources of renewable energy and a good alternative to fossil fuels.

The presentation will discuss the quality of wind data from a FAIR point of view.

FAIR is not limited to its four principles, it must also comprise appropriate openness, the accessibility of data, long-term stewardship, and other relevant features.

The definition of FAIR and Open data will be clarified and the current ontology of wind energy databases, which can be called “semantic tools for knowledge representation”, will be shortly analyzed.

The main objective is to find different types of wind data and describe them, provide wind energy planners, designers, and researchers, as well as the international wind engineering community in general.

This topic has several dimensions:

- What kinds of data are needed in this industry?
- What is the current capture of wind data in ontology?
- Overall assessment of 4cOffshore or other wind energy databases with respect to compliance with FAIR criteria

Also, discussion about current practices and future directions of open, data-driven energy system research, drawing from a review of on-going practices and discussions in the European energy research community with a focus on wind energy data. The review includes an assessment and synthesis of current publication practices, projects, databases, and existing networks and initiatives. Examples for reviewed projects include the EOSC Nordic project which is about the online evaluation of fairness data, Open AIRE: Bridge between performed and published science, Metadata and taxonomy for FAIR data sharing in wind energy (DTU wind energy/knowledge sharing platform), NOMAD repository: Discovery of metadata, ALLEA working group: Humanities and data, RISIS: an e-infrastructure for the STI-policy research community, PVGIS: crystallography open database, Overview of data research in Norway and introduction to data management plan including Roles and responsibility, Legal and ethical issues and policy about reusing data, Data quality and data description, Storage and long-term preservation of data.

The presentation concludes by outlining a roadmap and also linking to on-going open data initiatives at the European Energy Research Alliance (EERA).