



The weather roulette: communicating probabilistic predictions for wind energy

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Climate prediction is an emerging and highly innovative research area. For the wind energy sector, predicting the future variability of wind resources over the coming weeks or seasons is especially relevant to quantify operation and maintenance logistic costs or to inform energy trading decision with potential cost savings and/or economic benefits.

Recent advances in climate predictions have already shown that probabilistic forecasting can improve the current prediction practices, which are based in the use of retrospective climatology and the assumption that what happened in the past is the best estimation of future conditions. Energy decision makers now have this new set of climate services but, are they willing to use them?

By using the weather roulette framework of Hagedorn & Smith (2009) we aim to properly explain the potential economic benefits of adopting probabilistic predictions, compared with the current practice. This framework is a diagnostic tool created to inform in a more intuitive and relevant way about the skill and usefulness of a forecast in the decision making process, by providing an economic and financial oriented assessment of the benefits of using a particular forecast system.

We present a mobile app developed to allow stakeholders to play the weather roulette game and visualise the overall prediction success of the seasonal wind speed predictions and climatology. This work will illustrate the value of probabilistic predictions in economic terms to improve energy user's understanding of skill in seasonal climate predictions.