



The weather roulette: assessing the economic value of seasonal wind speed predictions

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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?

Our aim is to properly explain the potential economic benefits of adopting probabilistic predictions, compared with the current practice, by using the weather roulette methodology (Hagedorn & Smith, 2009). This methodology 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 have selected a region relevant to the energy stakeholders where the predictions of the EUPORIAS climate service prototype for the energy sector (RESILIENCE) are skillful. In this region, we have applied the weather roulette to compare the overall prediction success of RESILIENCE's predictions and climatology illustrating it as an effective interest rate, an economic term that is easier to understand for energy stakeholders.