

Interactive comment on “North Sea region energy system towards 2050: integrated offshore grid and sector coupling drive offshore wind installations” by Matti Koivisto et al.

Anonymous Referee #2

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This paper looks at three different scenarios of developing the North sea offshore wind-farms: 1. Load as of today, offshore wind farms connected to country hubs on a project basis 2. Load as of today, offshore wind farms connected via a meshed grid to the mainland 3. There is a strong sector coupling for the electricity use and windfarm offshore

The different scenarios are compared and the outcome is very clear: a) Meshed grid compared to country connections (1 to 2), no big different b) Sector coupling is very important and make it possible to take away natural gas, coal and oil from the heat production in northern Europe. It also increase the needs of more wind power in the

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North Sea.

The results are a very important message to how the development of the energy supply can develop.

The paper is well written, and it is very easy to catch the main message and it is clear in the results.

The comparison of i) and ii) repeats results from a previous publication, as the authors point out.

The sector coupling is new and very important. Maybe the sector coupling is enough important to be a paper by itself with more background information.

The literature review is limited and there is other paper also describing the sector coupling and its impact for wind energy development, I recommend to make a new review.

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