



Assessment of spatial conflicts and interactions for the suitable location of renewable energy infrastructure in the North Sea

Laura Gusatu

University of Groningen, Spatial Sciences, Groningen, Netherlands (l.f.gusatu@rug.nl)

In the last decades there has been an increased interest towards the accelerated energy transition in the North Sea area, supported by the geographical attributes of the sea basin as well as the interconnectivity of the surrounding countries. The energy related research has been pushed forward by the planning of the marine space (through the formulation of the Marine Spatial Plans) as well as by setting ambitious targets at the international and European level (Paris Agreement). The allocation of space for wind energy infrastructure, with a growing potential for offshore deployment, is not straightforward. One of the main constraints remains the fragmented governance in managing offshore interactions. While international cooperation exists, it remains limited, which allows sectoral interests, and hence conflicts, to limit the integrated and coherent allocation of space. The identification of space is dependent on the compatibilities and incompatibilities of offshore activities with offshore wind infrastructure. Within the diverse context of the North Sea area, such process will differ from one country to another, since in many cases there is not a clear picture of interactions, compatibilities and therefore of the available space.

The purpose of the study is to advance the knowledge regarding the possibilities to allocate space for the future energy infrastructure, in the case of the North Sea, taking into account existing conflicts and conflict resolution strategies for the activities in the marine space.

This will be achieved not only through spatial analysis of the current marine activities interactions (having as a starting point the existing MSP framework), but also through an assessment of how different countries deal with resolving conflicts and seizing opportunities, both at national level and from a transnational perspective. In quantifying the amount of space available for the future deployment of energy in the North Sea, the spatial component is essential. Using up-to-date information and a methodology for assessing the degrees of space suitability (in the form of a matrix of interactions between competing sea use claims), the results of the study offer a visualization (through GIS analysis) of the distribution of possible available space, the critical points and potential trans-border collaboration (what would be beneficial, what conflicts can be solved through collaboration).