

EGU2020-5484, updated on 26 Oct 2020  
<https://doi.org/10.5194/egusphere-egu2020-5484>  
EGU General Assembly 2020  
© Author(s) 2020. This work is distributed under  
the Creative Commons Attribution 4.0 License.



## **Aesthetic evaluation of wind turbines in stochastic setting: Case study of Tinos island, Greece**

**Eleni Manta**<sup>1</sup>, Romanos Ioannidis<sup>2</sup>, Georgios-Fivos Sargentis<sup>3</sup>, and Andreas Efstratiadis<sup>4</sup>

<sup>1</sup>National Technical University of Athens, School of Civil Engineering, Greece

<sup>2</sup>National Technical University of Athens, School of Civil Engineering, Greece

<sup>3</sup>National Technical University of Athens, School of Civil Engineering, Greece

<sup>4</sup>National Technical University of Athens, School of Civil Engineering, Greece

Wind turbines are large-scale engineering infrastructures that may cause significant social reactions, due to the anticipated aesthetic nuisance. On the other hand, aesthetics is a highly subjective issue, thus any attempt towards its quantification requires accounting for the uncertainty induced from subjectivity. In this work, taking as example the Aegean island of Tinos, Cyclades, Greece, we present a stochastic-based methodology for evaluating the feasibility of developing wind parks in terms of their aesthetic impacts. At first, a field analysis is been conducted along with photographic surveying, 3D representation and the opinion of the target population regarding the development of wind parks across the island. Subsequently, the landscape transformations that will be caused from the wind turbines are assessed according to the theory of aesthetics, which are depicted by using suitable spatial analysis tools in GIS environment. The 3D representation images along with the maps are finally assessed through stochastic analysis, in order to quantify the visual impacts to the landscape and the nuisance to local community.