

The visual impact of wind turbines: Guidelines for stated preference studies.

Author: Pablo Hevia-Koch, DTU Management, PhD Student in Wind 2050 Project. www.wind2050.dk

Abstract

It is of high interest for policy makers to be able to quantify the attributes of wind power projects acceptance in economic terms i.e. external costs, as these costs can give important information when considering the trade-off between the placement and the disamenities created and facilitate a more cost efficient wind power deployment. Currently, one of the main drivers for acceptance of wind turbines by the public is their level of visual impacts. Consequently, a vast number of economic studies applying economic valuation methodologies have emerged the past 10-15 years, whereas most of them have estimated preferences for visual impact reduction either directly as a function of distance/number or turbines/formation of wind farms or indirectly as a function of the location of the wind turbines. While some studies have so far approached the subject of visual disamenities, the conclusions of these studies have been general and unspecific.

This paper makes a critical review of the past studies focusing on their approach towards visual disamenities, discusses their limitations and strengths, and gives a series of recommendations regarding the design of stated preference studies for the assessment of visual disamenities of wind turbines, with a special emphasis on improving current visualisation problems. First, some general issues observed on previous stated preference studies will be presented and discussed, as well as some recommendations on how to correctly address these issues in future studies. Afterwards, issues specific to visualisations are discussed, starting with a description and evaluation of different possible approaches towards visualisation that can be used in future studies, and continuing with a series of known issues in the presentation of visualisations in current studies.