ORIGINAL PAPER

Promotion of wind energy in isolated energy systems: the case of the Orites wind farm

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Abstract With the establishment of the first wind farm on the island, Cyprus has made progress to satisfy the European Union's 2020 renewable energy targets. Operational since September 2010, the 174 M€ Orites wind farm is currently the largest wind project in the Mediterranean region. In this article, the main characteristics of the project with regard to Cyprus's national action plan for the promotion of renewable energy sources are presented. The socio-economic impacts of the project and its feasibility in the context of an isolated energy system are also examined. The results of a public survey to identify the attitudes of surrounding households and neighbouring cities towards the wind farm are presented. The assessment was based on face-to-face interviews conducted with 50 households from the surrounding communities and 100 interviewees from neighbouring cities. According to the survey, the public opinion on the wind farm was generally positive, and the majority of the respondents considered the wind farm to be acceptable as of no considerable environmental impact.

Keywords Wind farm · NIMBY · Apparent YIMBY

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List of symbols

Variables

A	Slope, Weibull graphical solution
B	Intercept with y-ordinate, Weibull graphical solution
C	Weibull scale parameter (m/s)
E	East (coordinates) (°, ′)
f	Probability density function (%)
F	Cumulative distribution function (%)
k	Weibull shape parameter
N	Power (W)
N	North (coordinates) (°, ′)
U	Wind velocity (m/s)
V_{TS}	Technical availability (according to VDI 3423) (%)
X	Logarithmic transformation parameter, Weibull graphical solution
Y	Logarithmic transformation parameter, Weibull graphical solution

Greek letters

η	Number of wind turbines
ω	Power coefficient

Accents

'	Fluctuation
–	Average

Indices

0	Nominal
cal	Calculated
e	Electric
meas	Measured

Abbreviations

EAC	Electricity Authority of Cyprus
EC	European Council
EMF	Electromagnetic fields

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