

## البحث رقم (1)

تقييم التكلفة المستوية للكهرباء المولدة من طاقة الرياح البحرية في مصر	عنوان البحث
<b>Assessment of levelized cost of electricity of offshore wind energy in Egypt</b>	
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Wind Engineering, 41(3), June 2017, 160-173. DOI: 10.1177/0309524X17706846, ISSN: 0309-524X	تفاصيل النشر
يونيه 2017	تاريخ النشر

Offshore wind turbines are being used to harness the high value of wind energy usually available on the sea sufficiently far from the shore (i.e. some kilometers). The present study provides an assessment of the potential of offshore wind energy along the Mediterranean Sea in Egypt. The techno-economic assessment was conducted considering a 7.0 MW offshore wind turbine at seven sites along the Mediterranean Sea. Fixed platforms were considered, assuming that the maximum sea depth will be 60 m, that is representative of the sea depth in the Mediterranean coast of Egypt at 5 km from the shore. The analysis reveals that a very large amount of energy can be harvested. The minimum energy production is obtained at Alexandria with a capacity factor of 55%, and the maximum energy production is obtained at El Dabaa station with a capacity factor of 63%. The levelized cost of electricity (LCOE) is estimated as to be equal to about 0.075–0.079 US\$/kWh which can be considered very competitive with other renewable energy systems in Egypt. The results prove the techno-economic feasibility of the offshore wind energy resource in Egypt, and it would motivate both the research community and the policy makers for more attention regarding this resource.