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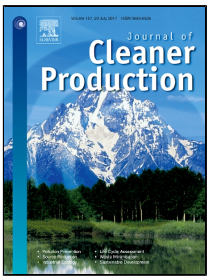

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Wind characterization in Taranto city as a basis for innovative sustainable urban development

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Abstract

The city of Taranto, in the south-east of Italy, is experiencing a transition from one of the most polluted and industrialized area characterized by the presence of the largest integrated steelworks in Europe, to a center of attractions of investments in innovation on sustainability and tourism. Among sustainability projects, urban wind energy is emerging as a technology useful in diffusion of smart grids for energetic sustainable development and also an interesting growing niche market in which there could be new investment opportunities. Numerous projects aimed at developing wind energy production are under constructions and wind characteristics and power potential of various sites have been studied in many Mediterranean countries. The urban wind analysis may represent a new tool to complete local wind atlases including the built environment, to evaluate changes that weathering may cause in the physical and architectural state of buildings, and to analyze the dispersion of pollutants from sources to receptor sites. In this paper, an analysis of wind potential and characteristics in Taranto, Apulia, a north Jonian urban site in Italy, has been performed by using high time resolved (10 min) meteorological data collected over a time span of two years, in the aim to describe the