

POLYTECHNIC OF TORINO
FACULTY OF ARCHITECTURE 2
Degree in Architecture for the Restoration and Preservation of Architectural
and Environmental Heritage
Honors theses

Gone with the wind – landscape conservation and economics of wind farms

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The proportion of today's environmental emergencies make the production of clean energy from renewables an urgent need, essential contribution to a sustainable development. Nonetheless, the environmental sustainability of any kind of process must not prescind from its economic feasibility.

Wind energy is the fastest growing technology for the production of electricity: commercially and technologically mature, with a low environmental impact, endogenous. That's why the European Union made wind energy one of the basic strategy for the implementation of Kyoto's targets, forecasting a appreciable growth of the role of wind energy in the generation of electricity.



Wind farm in Denmark: the project aims to respect the natural lines of the landscape

However, as any other energy source, it has some impact on the environment; negligible on the environmental side, they centre upon the visual impact, due to the alteration of the landscape they're part of. In fact, to be economically feasible a wind farm need to be installed into a wide and exposed area.



Wind farm which realization was not coordinate by any landscape architecture project; it follows a sharp visual impact

The anti-eolic debate stress on this side, deeply felt in Italy. Through the regulations' analysis we can identify the main solutions taken to meet the landscape's conservation needs while building a wind farm. Also some deficiency went out from the analysis, still it's difficult to report them in few words if not defining it disjointed and sometimes even empty of the desirable continuity from the global to the local level.

The competitiveness of wind energy, which costs can face those of the today's cheaper energy sources, make a wind park an attractive source of investment, even aside from its environmental benefits.

Regulations provide for a significant local autonomy, so that the setting up of a wind farm is actually often managed by bilateral agreements between a town or a local authority and a wind farms producer; considering that many of the Italian wind farms are - and will be - situated into economically depressed areas, it's immensely important to set regulations able to safeguard most 'marginal' realities, avoiding any speculation. For a development sustainable from any point of view, wind energy have to count upon certain regulations able to grant a proper integration into the landscape without minimizing its diffusion; also an unpolitical information, qualitatively and quantitatively appropriate is needed, broaching every aspect of the question, from the general to the particular ones, so as the profitability of the installation of a wind farm. Through the analysis of the economic aspect of a wind farm came out the importance of the 'Productibility' factor for the definition of its economic feasibility; the importance of that factor, currently considered only inside the economic field, must be considered also when defining the landscape conservation regulations.



Two different ways for energy production

Impacts' mitigation measures that came out are necessary but not sufficient conditions to a proper conservation of the landscape heritage. Identifying the Productibility thresholds, core requirements identifiable with areas directly on a portion of ground, can get through the usual scheme that consider economic analysis only as a tool to the financial assessment or feasibility of a project. Environmental and economic efficiency and landscape's conservation thus interact toward a sustainable and responsible development.

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