



**Politecnico  
di Torino**

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## **Honors Thesis**

**Master's degree Science in Architecture Construction City**

**Shaped by the Wind**  
**Designing wind energy starting from territorial governance**

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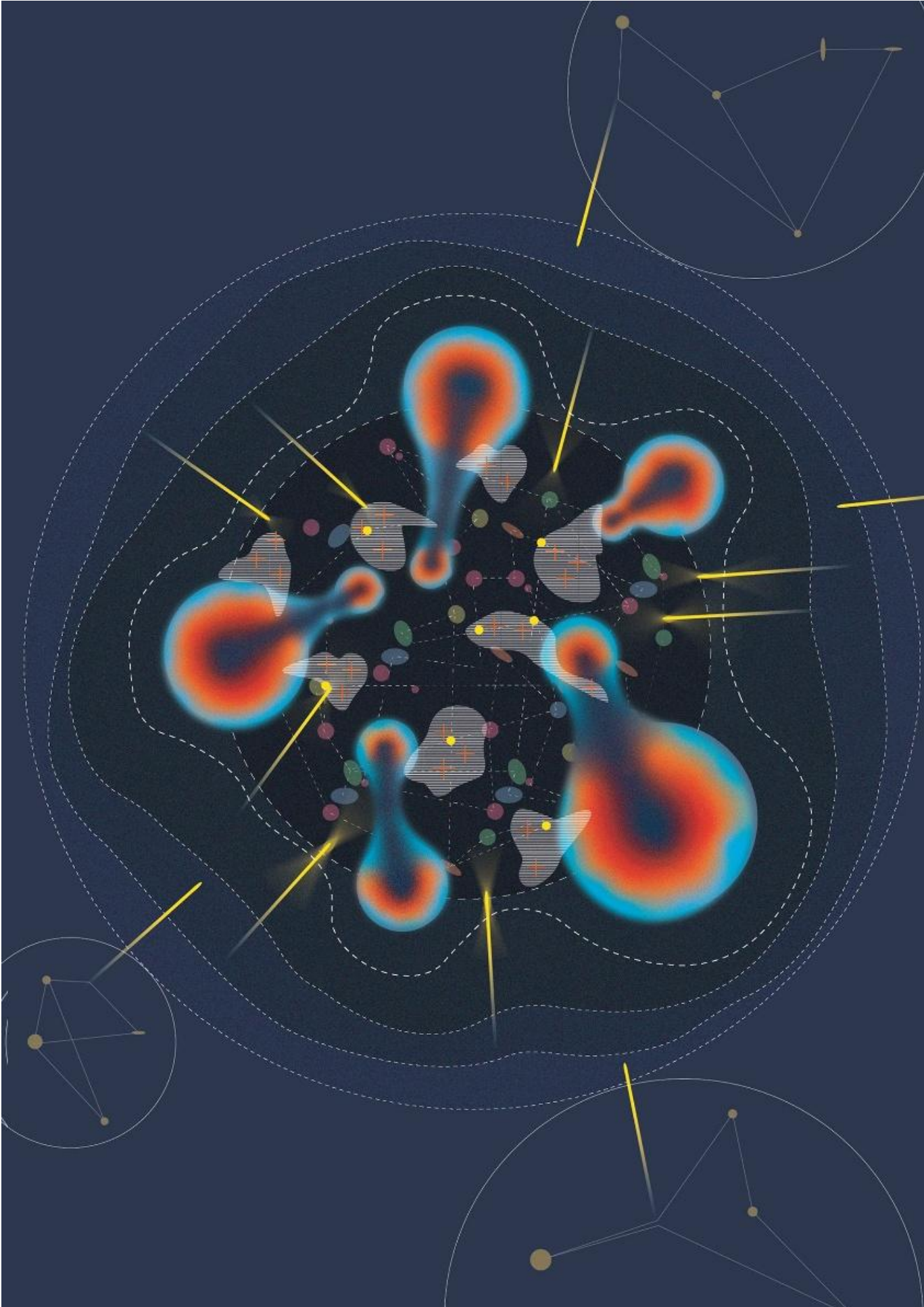
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The thesis investigates the relationship between wind-based renewable energy production and territory—a theme still marginal in urban planning discourse and, at the same time, addressed in a fragmented way by regulations, which are often reduced to restrictive constraints rather than developed as planning tools. The objective is twofold: on the one hand, to deepen the understanding of this relationship while preserving the complexity of its technical, spatial, social, and regulatory dimensions; on the other, to propose a design approach capable of maintaining this same complexity and of overcoming the purely functional and extractive logic that characterizes most existing plants.

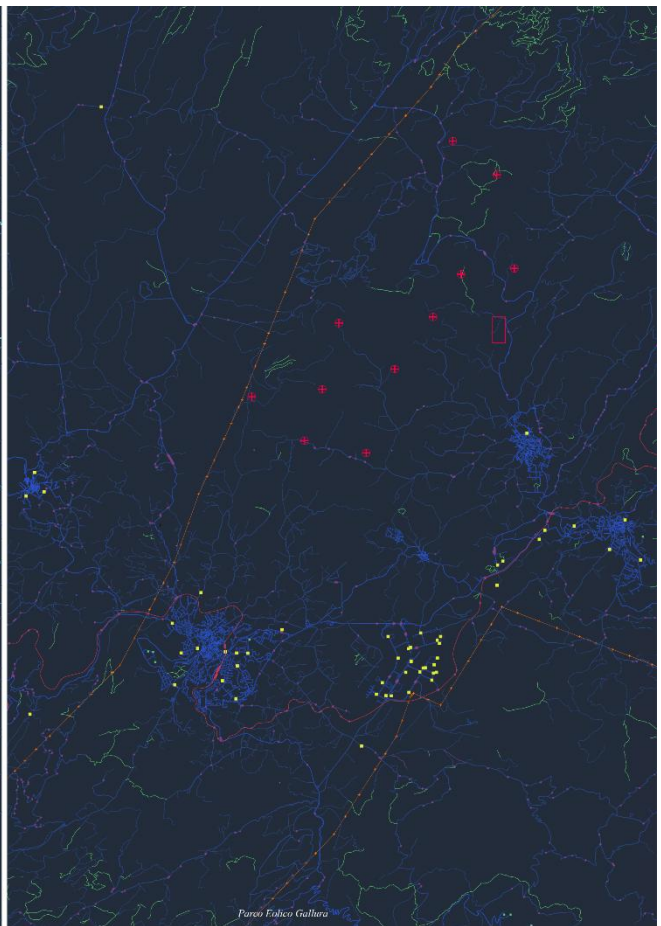
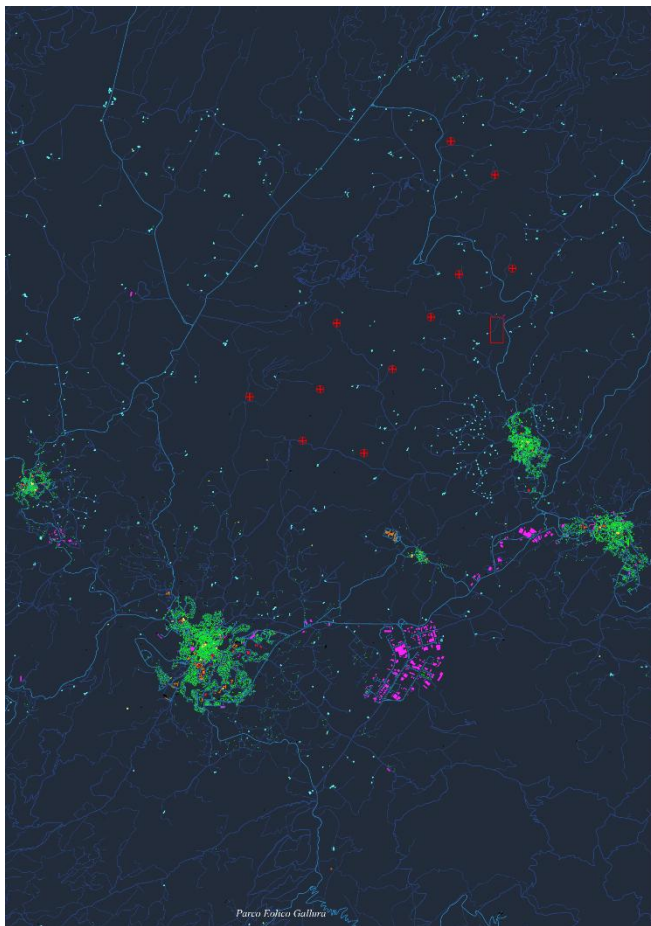
The work is structured in three main parts. The first examines wind energy as a technology: it analyses its technical functioning, the evolution of its use in Italy, its integration into the electrical grid, and its territorial-scale implications. The second part explores the relationship between wind energy and territory across three fields of inquiry: spatial issues, with particular attention to landscape and environmental impacts and to the deconstruction of projects into components concerning both plants and their infrastructure; social issues, through the analysis of conflicts, activism, community engagement practices, and socio-economic repercussions; and regulatory aspects, highlighting the international and national frameworks and pointing out their incompleteness, as well as their tendency to focus more on control than on the promotion of good practices. This section concludes with a critical review of international case studies.

The third part focuses on the case of Gallura and the proposal of a wind farm project that was blocked by an environmental organization. Located in the inland area of Sardinia, the case was chosen for its emblematic ability to synthesize both the potential and the criticalities associated with this issue. In light of this case study, as well as the broader investigation into the relationship between wind energy and territory, the thesis raises a central question: the weakness of governance models. From this perspective, and drawing on extensive literature and specific cases, it proposes a dual repertoire of practices: on the one hand, practices of governance and participation; on the other, environmental and spatial practices, which can be combined to construct hypothetical models.

Finally, the application to the Gallura case redefines the project by employing some of the spatial good practices identified in the repertoire, and unfolds across two alternative management scenarios: on the one hand, an Energy Cooperative based on profit redistribution; on the other, a Solidarity Energy Community founded on shared responsibilities. These scenarios, represented through diagrams, sketches, and visualizations, explore how wind energy can become a territorial infrastructure capable of connecting energy, landscape, and society.







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