

Research Article

# Renewable Energy, Landscape Protection and Tourism Development, a Territorial Plan Experiment in Italy

Daniela De Leo<sup>1,\*</sup> , Sara Altamore<sup>2</sup> 

<sup>1</sup>Department of DiArc, University of Naples Federico II, Naples, Italy

<sup>2</sup>Independent Researcher, Rome, Italy

## Abstract

The contribution offers to the disciplinary debate on theories and practices of land-use planning the restitution of an ongoing research work to support the drafting of an unusual Landscape-Energy-Tourism Plan. Within this endeavor, on the one hand, the article gives an account of the review conducted on the national and international literature as well as on the few available practices, bringing out the elements present and the gaps, including conceptual ones, that need to be filled. On the other hand, starting from ongoing experimentation, the contribution focuses on first directions for an integrated and wide area plan that can offer itself as a possible reference on what planning should be practiced to better hold together landscape protection and enhancement with the necessary regulation of renewable energy facilities and the promotion of sustainable tourism development paths. In the frequent lack of adequate resources and technical expertise as well as sufficient bargaining power in the face of national or international energy managers or unscrupulous entrepreneurs who offer more than the available agricultural land is worth or produces, non-metropolitan territories have only the integrated and intermunicipal plan from their side (even though they don't know or care). While for planners is very difficult to address at the same time landscape protection and tourism development with the very strong request of land for the (sustainable) energy facilities.

## Keywords

Landscape-Energy-Tourism Plan; Integrated Plan, Landscape Protection, Regulation, Renewable Energy, Sustainable Tourism Development

## 1. Introduction

The degradation of ecosystems and the advancing climate crisis have made it (long since) urgent to reflect on the transformation and, therefore, the design of territories, in order to limit the risk of determining energy transition practices: a) de-territorialized with respect to the differences of territorial systems; b) blind with respect to the ecological and functional interconnections between urban and rural areas, between centers and more inland and marginal areas. Within

this framework, the request for theoretical and interpretive support for the development of a "Plan for the protection of the land, landscape and environment through the rationalization of the renewable energy production system and the promotion of tourism development" addressed in the past to the authors' University seemed of particular interest because of the possible theoretical and practical implications present in this direction of work.

\*Corresponding author: [deleo@unina.it](mailto:deleo@unina.it) (Daniela De Leo)

**Received:** 12 November 2024; **Accepted:** 9 December 2024; **Published:** 26 February 2025



Copyright: © The Author(s), 2024. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

In fact, the research question posed an interesting opportunity for at least two reasons. First, there are not many useful examples or references in available practice and/or thinking at the national and international scales on planning tools that jointly and explicitly address landscape protection and enhancement, location of alternative energy facilities, and tourism development. Second, this question was asked by 19 municipalities in associated form [27], belonging to a non-metropolitan territory, left behind<sup>1</sup> or *intermediate* [63, 45]. In this context-similar to many others in Europe, the production, distribution, and consumption of energy exert a huge impact because it often involves weaker and more fragile territories that are also socio-economically and environmentally fragile [24, 25]. Indeed, as has been pointed out, "within [the transition] there is a risk that pushes toward concentration and further marginalization of the most fragile areas will lurk" [21].

The requested support for this Plan has thus prompted research and direction for experimentation that we wish to present here and offer to the disciplinary debate, representing an important opportunity to respond to complex spatial challenges concerning: a) *integrated planning practices in non-metropolitan areas*<sup>2</sup> on relevant issues such as landscapes, energy and tourism, b) the effective operationalization of multi-stakeholder processes at the wide area level. Indeed, the paper is situated within the disciplinary debate on multi-stakeholder practices [40, 3] in the so-called "territories that do not matter" [63], focusing on useful guidelines to support the development of a Landscape-Energy-Tourism Plan, necessarily integrated and at the inter-municipal scale. To do this, the research has:

- a) selected materials available in the disciplinary literature and planning practices that have usefully and explicitly addressed the above three issues;
- b) deepened knowledge about the area as a whole in order to identify possible methodological and operational directions useful to support the drafting of the required Plan.

Therefore, the essay gives an account of the work done with the hope that such a Plan may be useful in contexts (European and international) facing similar challenges, aware of the need, precisely in non-metropolitan areas, for inter-municipal and integrated planning, attentive to landscapes, alternative energy facilities and tourism promotion.

## 2. Methodology

The research work presented here began with the idea that a *taxonomy of available theories and practices on landscape-energy-tourism plans* could be useful both to support

<sup>1</sup> Places in which "an elite was telling them that the alternative was between facing slow decline or leaving the places where most of them had been born and bred" [63, 4].

<sup>2</sup> There is no room here to recall the debate about the need for nonmetropolitan areas policies-also called areas "forgotten by policies" [6, 24].

ongoing planning experimentation and to stimulate disciplinary discussion and debate on the unprecedented vast area planning tool required. Thus, to begin to answer the demand for planning support formulated by the 19 municipalities in associated form, a first quick review of the planning practices in landscape, energy and tourism available in Italy was conducted. This immediately revealed an absence of dedicated tools for the joint treatment of the three challenges from which to start.

Next, an online search was conducted on Italian inter-municipal scale plans<sup>3</sup>, obtaining useful information from both regional landscape plans (which try to regulate the location of renewable energy facilities) and some inter-municipal structural plans. At the same time, a broader national and international study was conducted to understand whether and how, in recent years, planning theories and practices had become concerned with these challenges. This in-depth review of national and international literature has revealed how in disciplinary debate and practice these three important issues have been addressed explicitly and jointly only in binary pairs and combinations. This confirmed (a) the originality of the request for support received for planning aimed at the explicit integration of three issues to be addressed jointly at the large scale and, (b) the importance of the ongoing experimentation to be accounted for in order to offer prospects for innovation in planning theories and practices.

Methodologically, therefore, the construction of the cognitive framework on available planning theories and practices on landscapes, energy, and tourism was conducted by relating the review of existing literature (scientific articles, books, technical reports, and other relevant material) to the specifics proposed by the focus area, in order to identify:

- 1) emerging themes, patterns and learnings, framing the different nexuses of the landscape, energy, tourism triad;
- 2) gaps and possible opportunities for theoretical and applied advancement.

At the same time, a broader research phase included:

- 1) in-depth spatial analysis, with statistical, environmental<sup>4</sup> data and documents already compiled over the past few years by technicians and policymakers from the 19 municipalities in the area, as well as online questionnaires<sup>5</sup> aimed at building a unified cartography;
- 2) field research, with semi-structured on-site interviews<sup>6</sup>, participatory observations, and public meetings to focus on problems and possible solutions on specific issues.

<sup>3</sup> Desk research to identify existing plans was conducted between October 2022 and May 2023.

<sup>4</sup> Regional and national reports have been analyzed, with insights at the regional and provincial scales from ISPRA-Superior Institute for Environmental Protection and Research, ARPA-Regional Environmental Protection Agency and ISTAT-National Institute of Statistics.

<sup>5</sup> The questions covered, for each issue, the presence or absence of: existing planning tools at the municipal level, dedicated technical and political contacts, territorial resources used and not used, territorial alliances with other municipalities, existing or previous networks with other municipalities.

<sup>6</sup> 40 interviews were held in each of the 19 Municipalities, targeting mayors and technicians from April to June 2023.



## 3. Landscape, Energy and Tourism in Theories and Practices

### 3.1. A Thematic Framework

In the concerns related to climate change and energy security, on the one hand, the development of energy from renewable sources represents a global ambition albeit with significant impacts that manifest themselves at different spatio-temporal scales precisely on landscapes and tourism [74]. On the other hand, it is clear that the construction of renewable energy plants generates land transformations with strong repercussions especially in areas characterized by agricultural land abandonment, land fragmentation and poor ordinary planning. Precisely in these contexts, the spread of new plants is becoming more intense [2]. In fact, because of these facilities, rural areas may also be subject to "negative social repercussions and threats to the environmental heritage, which in some areas of the country has been preserved intact to this day" [20, 35]. This raises the question of the effects of the energy transition in rural areas and, more generally, on quality landscapes or territories with a so-called tourist vocation.

Yet, as already pointed out, no planning tools or theoretical reflections explicitly aimed at addressing in an integrated way the spatial challenges related to the development (including sustainable) of tourism with the deployment of renewable energy facilities and landscape protection and enhancement have been traced. Then, noting this conspicuous absence, planning orientations and theoretical reflections available with respect to some combination of the above issues were analyzed and selected. In particular, analysis of national and international literature led to the identification of three different pairs recalled below: energy-landscape, tourism-landscape and energy-tourism. From these then came the recognition of themes and issues useful in the search for planning directions that can encompass all three and in an effectively and intentionally integrated form.

#### 3.1.1. Energy-landscape<sup>7</sup>

Even following the European push for renewable energy production, land-use planning has been fairly uniformly influenced by environmental and energy legislation [33] mainly addressing the development of guidelines and without the production of actual planning tools. In any case, both because of the material and physical characteristics of the landscapes in which these plants are embedded and because of the intangible, emotional and value attributions [59] that settled communities make of it, the concept of *landscape of energy* has been introduced [69], which highlights the social chal-

lenges that the energy transition is inducing [55]. This perspective, also covered in the special issue of the same name in the Harvard GSD journal *New Geographies*, has put energy as a space project in particular tension [37]. In other words, the political aspect of social construction of energy landscapes has been investigated on the one hand [39, 62], and on the other, the material aspect that considers visual impacts [14; 49]. Within this framework, actions put into practice for landscape and renewable energy development have mainly focused on minimizing or mitigating the visual impact of energy installations [56]. Along these lines, some authors [5] have supported the scenic value of the landscape in relation to the impact of PV and wind power plants, identifying suitable areas in places where aesthetic impacts can be limited [43]. This same approach also includes the possibility of restoring the aesthetic appearance of the landscape through design solutions that aim to integrate the facility with its surroundings. The goal is to strike a balance through the project between the need to promote sustainable energy sources and the protection of the visual quality of landscapes.

Another perspective on the intersection of renewable energy and landscape focuses on the assessment of symbolic impacts, i.e., the perceptions and meanings people attach to places and possible transformations [42]. Even when hardly visible, in fact, renewable energy installations are the subject of much controversy and opposition. The landscape thus becomes the privileged lens to better understand how energy from renewable sources has become a new cultural element (Sellman 2010; 65). Within this framework, the most interesting implications for planning practice concern the active role of settled communities in assessments of the perception of energy facilities, taking into account that renewable energy infrastructure represents potential sites of resource use conflict. Specifically, the literature considers two types of impacts: 1. visual ones with spin-offs for the development of specific procedures [23] e 2. symbolic ones with the various attributions of meaning of the population [29]. These impacts are then considered within integrated planning through the establishment of landscape-conscious design criteria in order to foster, on the one hand, a balance between renewable energy development and the preservation of landscape quality; and, on the other hand, a sustainable and, above all, acceptable energy transition for local communities [31].

Understanding the attachment to places and the emotional responses people may have to energy landscapes forms the basis for a constructive approach to conflicts, often recorded as simplistic oppositions and NIMBY (Not In My Backyard) phenomena [30, 12, 74]. In this way, there is a greater understanding of the social obstacle [43, 1] aiming at energy planning that looks at the complexity of the territory and the multiplicity of actors in the field [74, 75, 34].

#### 3.1.2. Tourism-Landscape

For several decades, tourism planning has been regarded in

<sup>7</sup> It is beyond the scope of this paper to also provide a small framing of the concept of landscape for which we refer to the definition of the European Landscape Convention, as a conceptual reference point by interpreting landscape according to its relational nature.

relation to landscape mostly as a strategic process involving the identification of spatial units of reference and the assessment of political-territorial demand, in line with regional planning guidelines [71]. Landscape is indeed considered as one of the elements of tourism planning [16] since tourism certainly benefits from a highly attractive landscape as well as a welcoming host community [18]. The same is not true if the two terms of the relationship are reversed. While tourism is a useful socioeconomic activity for the area as a means of providing income and employment [47], this can have negative impacts on the landscape [19, 64] and on local communities themselves [44, 50]. Following this line of reasoning, some of the planning experiences that emerged from the conducted research explicitly highlight the importance of preserving, managing and enhancing the landscape (also) as a tourism resource: directions in favor of tourism development cannot turn into forms of exploitation of this heritage, nor can we limit ourselves to the overall preservation of the original landscape [71]. Further developments in reflections and practices see landscape as a perspective through which to rethink tourism planning by showing design solutions that are not limited to reducing the negative impacts of tourism on the landscape, but investigate the relational aspects that affect this nexus [72]<sup>8</sup>. In other words, it plans by seeking a balance that takes into account settled communities, socioeconomic and cultural aspects, and the preservation of natural, environmental and man-made heritage [51]. From this perspective, it seems useful to frame landscape design within clear directions of tourism development to discover new forms of relationships between different systems and put them to work as the basis of spatial plans and projects [22].

### 3.1.3. Energy-Tourism

Although the interdependence between energy and spatial systems is recognized at the theoretical level, including in terms of tourism development [61], in planning practices the attention devoted to aspects concerning this specific nexus remains particularly limited [36]. In 2002, the *World Summit on Sustainable Development* identified tourism as one of the most energy-intensive sectors, issuing a call-poorly heeded over the past 20 years-for the integration of energy efficiency into tourism-related policies. Among responses at the international level, the *UNEP-United Nation Environmental Protection* Program has developed specific energy strategies for the tourism industry [57], focusing primarily precisely on energy from renewable sources [38]. In fact, if the tourism to aim for is interpreted as "economically, socio-culturally and environmentally sustainable, with socio-cultural and environmental impacts that are neither permanent nor irreversible"<sup>9</sup> [11], it becomes clear how an increase in renewable energy production and the pressures exerted by these on the

natural environment are not always compatible. In particular, energy and tourism simultaneously fuel hopes for development and partially overlapping critical issues, especially in relation to landscape protection. In fact, especially in areas with high environmental and scenic value, tourism development is seen as a chimera of economic prosperity closely linked to the wealth of places. Thus, the landscape to which part of the tourist attractiveness is entrusted is jeopardized or compromised precisely by the increased demand for renewable energy facilities.

In some cases, energy is considered in the literature as a prerequisite for tourism planning noting that energy availability and costs directly influence the development or stagnation of the tourism industry and related economies [10, 46, 58]. Similarly, tourism, representing a significant energy sink, needs to be properly planned to be in line with current climate challenges [8, 9]. In addition to global challenges, the impacts of tourism on the environment also involve more local issues, such as deforestation or water scarcity, which are especially critical for remote or island communities [70]. Most available studies are concerned with the direct relationship between energy consumption and tourism-dependent activities such as transportation or accommodations [66] and, therefore, their connection to harmful impacts on the environment [41]. In this perspective, the energy-tourism nexus is read from the controversies and concerns that are raised when dealing with tourism planning. As in the case of the effect on coastal waves by sea wave energy converters, which can affect surfers and other swimmers [68], or the influence of large wind farms on tourist destination choices [48].

With respect to these concerns, people's perceptions of energy facilities are mentioned in the literature as a useful trajectory in planning [35, 53]. Perception is, in fact, a highly changeable variable dependent on various factors, such as size, shape, spatial concentration, and distance [60], as well as depending on various local contexts and the value ascribed to it from a physical and social perspective [74]. In this direction, a true estimation of the spatial extent of energy plants on tourism has also been proposed at the perceptual level<sup>10</sup>. Finally, other studies dealing with the relationship between renewable energy development and tourism argue that such parallel development depends more on a local (rather than national or central) decision-making level connected to a general level of acceptance of the technologies, which certainly varies over time [52].

## 3.2. Landscape-energy-Tourism Plans in Italy

Downstream of the review on theories and practices conducted, it was soon evident that there were no useful practices to refer to in order to better support the drafting of a Plan such

<sup>8</sup> For more details, see also the special Issue "Landscape and Tourism, Landscapes of Tourism".

<sup>9</sup> With sustainable tourism, sociocultural and environmental impacts are neither permanent nor irreversible [46].

<sup>10</sup> These researches revealed that the reasons influencing the perceived spatial extent of impacts fall into three categories: a) visibility of renewable energy infrastructure and its environmental impacts; b) mobility of tourists; and c) changes in tourism due to energy projects, see [73].

as the one required taking into account that, in Italy:

- 1) Planning responsibilities for landscape, energy and tourism are, to some extent, suspended and continually 'shuffled' between central government, regions and local authorities<sup>11</sup>;
- 2) The development of inter-municipal level plans that include guidelines for landscape management and conservation is rare or even nonexistent.

This is all the more significant when one considers that, in the Italian context, in recent years, land consumption in favor of renewable energy installations has undergone a considerable and poorly controlled increase, especially in *non-metropolitan* territories like the one that requested support for the Plan that are in an already difficult condition of economic contraction, environmental degradation and depopulation [54].

Therefore, in order to proceed in the search for useful references to support the drafting of the required Plan, we focused on the structure and content regional landscape plans and land-use plans with landscape value<sup>12</sup>. These, overall:

- 1) Consider the requirements for locational limits and installed capacities for renewable energy power plants;
- 2) Pursue purposes of protection, preservation and conservation but, also, use and enhancement that should more explicitly push toward bringing them into consistency with tourism development goals.

In the aforementioned vacuum of wide area spatial planning and even more so on these issues, the Italian legislation regulating the spatialization of renewable energy facilities and their relationship with the landscape heritage is rather recent, complex and in current becoming<sup>13</sup>. From a planning perspective, the main tool, entrusted to the regions, is the identification of "suitable areas" for the inclusion of renewable energy facilities. This has its origin in the previous and still valid introduction to the identification of "unsuitable areas" for the installation of renewable energy plants in compliance with appropriate guidelines, established in agreement between the central government and the regions<sup>14</sup>. This task, while not

constituting an absolute limit to the implementation, pursues the objective of excluding the most sensitive areas from a landscape and cultural point of view on the basis of general criteria aimed at protecting the environment, the landscape, the historical and artistic heritage, of local agri-food traditions, biodiversity and the rural landscape, without reference to the necessary production of plans or connections with these.

Moreover, in this confusing regulatory framework<sup>15</sup>, many regions have proceeded to establish their own guidelines within their Landscape Plans, requiring individual municipalities to identify "suitable areas" and "unsuitable areas" on the basis of them and respecting the specificity of the territories. But this step-which would seem to be geared toward favoring municipalities over deciding the fate of their territories-does not guarantee any rights regarding the final opinion on the approval (or not) of the plant's location. In fact, it is up to the regional act-not the local rule-to identify the incompatibilities of certain areas, in relation to the type and size and power of the facilities. Thus, on the one hand, changing the focus to "suitable areas" instead of "not" prioritizes the simplification of permitting processes and less on harmonization with the landscape<sup>16</sup>. On the other hand, unqualified areas, thus outside of identification, "will not be able to be deemed 'unsuitable' *tout court*, not only by (other) planning acts, but not even in individual permit proceedings" [13]. This, it is pointed out, makes it so that there is a risk of exclusive reliance on criteria outlined by the central government or regions that are not necessarily territorialized, thus to "a choice based on abstract criteria, i.e., not verified in practice, which may lack the necessary adaptation to each territorial reality" (*ibidem*).

The analysis conducted showed that some of these regional plans (as the Tuscany Region PIT; Umbria Region PPR; Apulia PPTR) have envisaged and explicated in a different way and declined with respect to their territories the energy issue, including in terms of self-sufficiency. Although it is a continuous adaptation to an evolving regulatory framework, the attempt of these Plans corresponds to an outcome of choices that are sensitive to the values of the context (in accordance with the provisions of the current sector regulations) and, therefore, treated as added value capable of activating new productive scenarios as well as new landscapes. According to this perspective, Apulia, was among the first regions to adapt the Landscape Plan by developing a clear approach (through the use of SITs) for monitoring ongoing changes (not only energy) in order to build a framework to guide future actions. At the same time, Apulia, the first Italian region to see a drastic increase in land consumption for

promoting coordination between the central government and the regions in the area of public administration and legislation.

<sup>15</sup> A fuller discussion of the purely normative framework would go beyond the disciplinary mandate of this article, as well as being certainly complex and, it is not hidden by insiders, somewhat "arty" [4]. See also [7, 17, 13].

<sup>16</sup> In this regard, it is pointed out that "the role of the authority in charge of landscape protection is completely downsized, net of what has been said regarding changes to the state (EIA) procedure" [13].

<sup>11</sup> The main normative references are: the Framework Law 413/85, which establishes the basic principles for landscape protection and enhancement; the European Landscape Convention; and the Cultural Heritage and Landscape Code (L.D. 42/2004), which regulates the protection of property, including landscape property. Moreover, the National Landscape Plan provides guidelines and goals for protection, while, at the regional and municipal levels, we find Regional Landscape Plans and Municipal Urban Plans.

<sup>12</sup> The available Regional Landscape Plans were analyzed: Valle d'Aosta, Lombardy, Province of Trento, Friuli-Venezia Giulia, Emilia Romagna, Tuscany, Umbria, Lazio, Molise, Apulia, Basilicata, and Sardinia. Among them, the Tuscany Region PIT Plans, Umbria Region PPR, Apulia PPTR, and Emilia-Romagna PTPR were discussed in depth.

<sup>13</sup> To date, as a result of the goals set in the NRP-National Recovery and Resilience Plan, the L.D. is being worked on. 13/2023 (c.d. PNRR Ter Decree) still in draft form that aims to establish uniform principles and criteria for identifying suitable and unsuitable areas and areas for the installation of facilities. The former system was based on LD. 387/2003, which provided for the issuance of "guidelines for the authorization of plants from renewable sources," supplemented by the decree of the Minister of Economic Development September 10, 2010 and subsequent decrees, of which Leg. November 8, 2021, no. 199 (Renewable Decree) still in effect.

<sup>14</sup> Cf. the "Unified Conference," a body established by law for the purpose of

ground-based PV installations, has attempted to push in more sustainable directions with its recent Landscape Plan. This Plan, in fact, focuses on several dimensions including: the location of energy infrastructure, promotion of renewable energy sources, energy efficiency and mitigation of environmental impacts, which are in fact normalized by energy goals and strategies proper to National Energy Plans. Similarly, the Landscape Plan of the Emilia-Romagna Region has included design criteria, as well as spatial criteria, for the design quality of ground-mounted solar photovoltaic systems.

Tourism, likewise, has more substantial room for regulatory intervention at the central government level (cf. Strategic Tourism Development Plan under ministerial jurisdiction), while regional legislative power is mostly limited to sector plans. At the inter-municipal level, where it exists, tourism is instead dealt with in those structural plans<sup>17</sup> that implement the general lines of action. In addition, some Italian parks or protected areas have voluntarily adhered to the European Charter for Sustainable Tourism, which offers "guidelines for establishing tourism plans that respect the environment and cultural resources of the places themselves"<sup>18</sup>.

What emerges from the review conducted of existing planning on these issues is, as mentioned above, the substantial absence of intervention tools anchored in some shared strategy – possibly the result of a collaborative process [40] – that succeeds in:

- 1) Effectively take into account the intrinsic and identity characteristics of individual territories, as well as their ability to embrace and transform change into opportunity;
- 2) Connect renewable energy development to the virtuous use of the vast available environmental heritage, to stitch together land transformations within ecologically integrated visions of natural and socioeconomic capital.

## 4. The Plan for a Non-Metropolitan Area

### 4.1. The Territorial Conditions

First of all, it is important to mention that the territory of the 19 municipalities that placed the interesting request for support for the drafting of a Plan that explicitly addresses, in an integrated way, the challenges of energy, tourism and landscape is located within a context such as that of the Lazio Region that:

- 1) Results second in Italy (after the aforementioned Apulia) in terms of land consumption for photovoltaic and wind power plants;

- 2) Is among the latest to have adjusted the Regional Landscape Plan with the publication of the "Regional Guidelines and Guidelines for Identifying Areas Unsuitable for the Construction of Renewable Energy Sources (RES) Power Plants" [17].

Moreover, it is precisely in this Area that there is the highest concentration of facilities in the entire region of Lazio despite being a landscape-significant area and the subject, over the past 10 years, of a major national public policy (called SNAI-National Strategy for Inner Areas<sup>19</sup>) to address, "through the adoption of an integrated, place-based approach geared toward local promotion and development, demographic challenges and to respond to the needs of territories characterized by significant geographic or demographic disadvantages"<sup>20</sup>.

The Area in question, in fact, is composed of 19 municipalities that have combined in an associated form to "improve the delivery of public services (schooling, health, mobility) in order to address territorial inequalities and depopulation, through collaboration between various levels of government and a plurality of actors." Therefore, this formalized multi-stakeholder collaboration on a procedural level has led to:

- 1) explicit the desire to associate the function of spatial planning<sup>21</sup>;
- 2) jointly develop a document called an Area Strategy<sup>22</sup> containing shared goals and "the interventions or classes of interventions needed to achieve the expected results".

On the one hand, consistent with the choice of the association of the planning function, it is clear that the 19 municipalities have already formally committed themselves to a necessary action of "spatial planning for a local policy of integrated tourism and renewable energy development with respect for the territory, environment and landscape, with the direct involvement of citizens and businesses" [32] from which derives the request for support for the development of a specific planning tool<sup>23</sup>. On the other hand, it was essential to consider the Strategy Document as an extraordinary starting point for understanding the contextual conditions and, above all, the working directions for the fielding of a planning tool capable of better addressing, jointly and at the level of the vast area (of the 19 municipalities, precisely) landscape, energy and tourism. In fact, a thorough analysis of the Strategy Document shows that it clearly defines "the importance of

<sup>19</sup> There is not space here to give an account of SNAI on which there is, moreover, an extensive national and international bibliography.

<sup>20</sup> From the Cohesion Agency website: <https://www.agenziacoazione.gov.it/strategia-nazionale-aree-interne/>, last accessed: October 2023.

<sup>21</sup> Here it is imperative to point out that the SNAI asked municipalities to choose 3 functions to be associated from those in DL 78/2010, and this Area chose the letter "urban and building planning at the municipal level as well as participation in territorial planning at the inter-municipal level". On the meaning and implications of this choice and a more nuanced description of SNAI as a whole see [25, 26].

<sup>22</sup> The Strategy document can be found on the website: <https://www.agenziacoazione.gov.it/wp-content/uploads/2020/12/Lazio-Alta-Tosc-ia-strategia.pdf> last consulted in October 2023.

<sup>23</sup> The document defines, to be precise, the "Integrated Strategic Tourism Plan" (p. 29) and affirms the importance of an "Area Energy Plan", p. 30.

<sup>17</sup> Structural plans are municipal or even inter-municipal level plans that are responsible for giving directions for future land management and implementation of the municipal plan. Whereas, sector plans are land use planning tools dedicated to particular issues.

<sup>18</sup> The European Charter for Sustainable Tourism and the parks that have joined can be viewed at <https://www.europarc.org/about-us/network/members/>, last access: October 2023.

strong and participatory spatial planning of two crucial areas: renewable energy production systems and the integrated tourism system, in order to promote the sustainable development of the area itself". Within this joint statement of intent and commitment, however, the municipalities in the area have long been the subject of numerous proposals by private parties to build renewable energy production facilities, which not surprisingly, the Strategy document drawn up calls "of potential risk for creating 'imbalances' between excessive energy production and the protection and enhancement of the land, environment and landscape" (ibid.). Not coincidentally, again in the Strategy Document, it is then stated that the optimal territorial scale through which to address the issues raised by the pressure of new plants is that of the wide area, which is indicated as the "particularly significant institutional, administrative and territorial level for testing and implementing new forms of participation and regulation in renewable energy for the implementation of the policies set out in Agendas 2030 and PNIEC<sup>24</sup>" (ibid.). At the same time, in that joint document, the municipalities define tourism as the "core of interventions of the socio-economic development of the Area" and include in the Strategy Document the future implementation of the "Integrated Strategic Tourism Plan." According to the Strategy Document, it is therefore necessary to create an integrated offering in which the core service identifies the precise tourism vocation of the destination and is able to create greater perceived value for the user (ibid., 29). Tourism spatial planning is thus explicitly assumed in the Strategy Document as a means of fostering the aggregation of local actors (entrepreneurs, administrators, workers in each sector and others) with the aim of:

- 1) Produce territorial and communication networks around the Area's natural, cultural, gastronomic and artisanal deposits;
- 2) Innovate and launch a new tourism destination;
- 3) Create conditions for the economic and social development of the area.

## 4.2. The Work on the Development of the Plan Addresses

In order to proceed in the elaboration of possible planning directions, we therefore started from the timely verification and updating of the spatial conditions determined after the Strategy Document was drafted. The deepening of the state of affairs on the spatial conditions of the area involved the definition of a work that aimed, at the same time, at the recovery of missing information on the specific issues but, also, at the progressive repositioning of planning as a shared practice useful to the settled communities and not only as a task to be carried out.

Therefore, we proceeded, on the one hand, to the integration of information (such as the recomposition of the mosaic

of tools) and the creation of a unified cartography of the area with the progressive combination of data that are generally not organized together or that come from different sources or sectors (see Figure 1). On these data, gradually enriched in the course of the work, an analysis and then a punctual identification of distinguishing features within a taxonomy that recognizes similarities and differences, areas and sub-areas, among the parts that make up the territory covered by the Plan was begun. On the other, a field action was designed and organized to draw attention to the planning instrument under construction. In particular, meetings were held in each municipality with policy makers and technicians to: a) deepen and extend the collection and verification of useful data on the three issues, b) investigate the programmatic and operational perspectives related to the planning of each municipality, and c) build relationships useful for the subsequent shared work for the elaboration of the Plan also based on the highlighting of critical issues that emerged from the multi-stakeholder process conducted for the drafting of the Strategy Document.

This field phase was accompanied by the administration of online questionnaires developed for the purpose of updating and completing the knowledge framework. With respect to the mode of administration, it was initially decided to send the questionnaires by Certified E-mail<sup>25</sup>, in order to solicit the more formal but also official side through administrative protocol. However, the lack of responses suggested a rethinking of the mode for filling out the questionnaire and the need to implement more widespread and extensive accompaniment. It then proceeded by returning to individual municipalities also by telephone to accompany the compilation and, most importantly, to consolidate the relationship and exchange. From this interaction, which took place through telephone interviews, details emerged about the tools and interventions (planned, implemented or ongoing) with respect to the thematic areas of specific interest in this Plan. In addition, the one-on-one interactions allowed for in-depth insights into the vision of each mayor and, where possible, technical and/or political municipal contact persons such as the relevant aldermen, with respect to specific territorial needs (on landscape, energy, and tourism) but also expectations, visions, and programmatic actions in the field as well as inter-municipal relations. In particular, these exchanges revealed that the various municipalities did not always feel a) truly participating in the multi-stakeholder process carried out, b) well represented in the Strategy Document also formally signed<sup>26</sup>. In particular, the in-depth work for the punctual recovery of the addresses that the 19 municipalities had nevertheless expressed within the Strategy Document they had drafted with reference to the issues at hand, made it possible to underscore the potential of the fundamental shift from the albeit meritorious multi-stakeholder collaboration aimed at drafting a

<sup>24</sup> National Integrated Energy and Climate Plan.

<sup>25</sup> Questionnaires were administered to all contact persons in the 19 municipalities as of the end of July 2023.

<sup>26</sup> This condition had emerged from previous research [27, 28] but was reiterated in fieldwork and telephone interviews.

Strategy Document toward a real practice of integrated and inter-municipal planning, which is clearly not avoidable when complex territorial issues are to be addressed. And this is also considering that, multi-stakeholder collaboration has seemed to aggravate management tasks (widely perceived by mayors and engineers as very onerous) and take energy away from precisely the ordinary practices such as planning activities.

Not the least, all these activities aimed to territorialize as much as possible information about initiatives at the municipal scale, stitching together, even visually on one map, landscape issues with tourism and alternative energy issues. This suggested putting on the agenda the timely verification of objectives derived from past multi-stakeholder practices as possible directions of the Plan in formation in order to take into account the intrinsic and identity characteristics of individual territories with reference to natural and socioeconomic capital.

On the basis of all this, we then began to set up a Plan table (Figure 2) that, starting from a finally integrated analysis and territorialization of the activities envisaged in the Strategy Document can direct joint action on landscape, energy and tourism with: the creation and/or revaluation of attractions, infrastructures, services; the promotion of the area of the 19 municipalities as a whole; the encouragement of inter-enterprise forms of cooperation; investments to increase the "visibility" of the area; the strengthening of the orientation towards quality, hospitality and "customer satisfaction" in the

provision of services; greater attention to the ecological factor and social aspects; monitoring the impact of projects on the economic, social, natural and cultural heritage by implementing a model of sustainable land management approach; overcoming individuality in favor of a concept of strong unifying appeal, to generate benefits; putting available economic resources to work to keep social and environmental costs low.

Last but not least, the produced drafts will be an opportunity for public presentation and thematic discussion with politics and technical referents within on-site meetings in the different sub-areas identified within greater geographic or thematic affinities. This will allow, on the one hand, to bring the practice of planning "closer" to the institutions involved, using the Plan tables (integrated and inter-municipal analysis and draft PET proposal) as boundary objects [67] to foster greater awareness and operational input that can accompany the necessary energy transition with an appropriate transition in ways of thinking and planning jointly landscape, energy and tourism. On the other, an attempt will be made to make the referents (politicians and technicians) of the 19 municipalities understand that this direction of work points to and deal with what has emerged regarding the lack of adequate resources and technical expertise as well as sufficient bargaining power in the face of national or international energy managers or unscrupulous entrepreneurs who offer more than the available agricultural land is worth or produces.

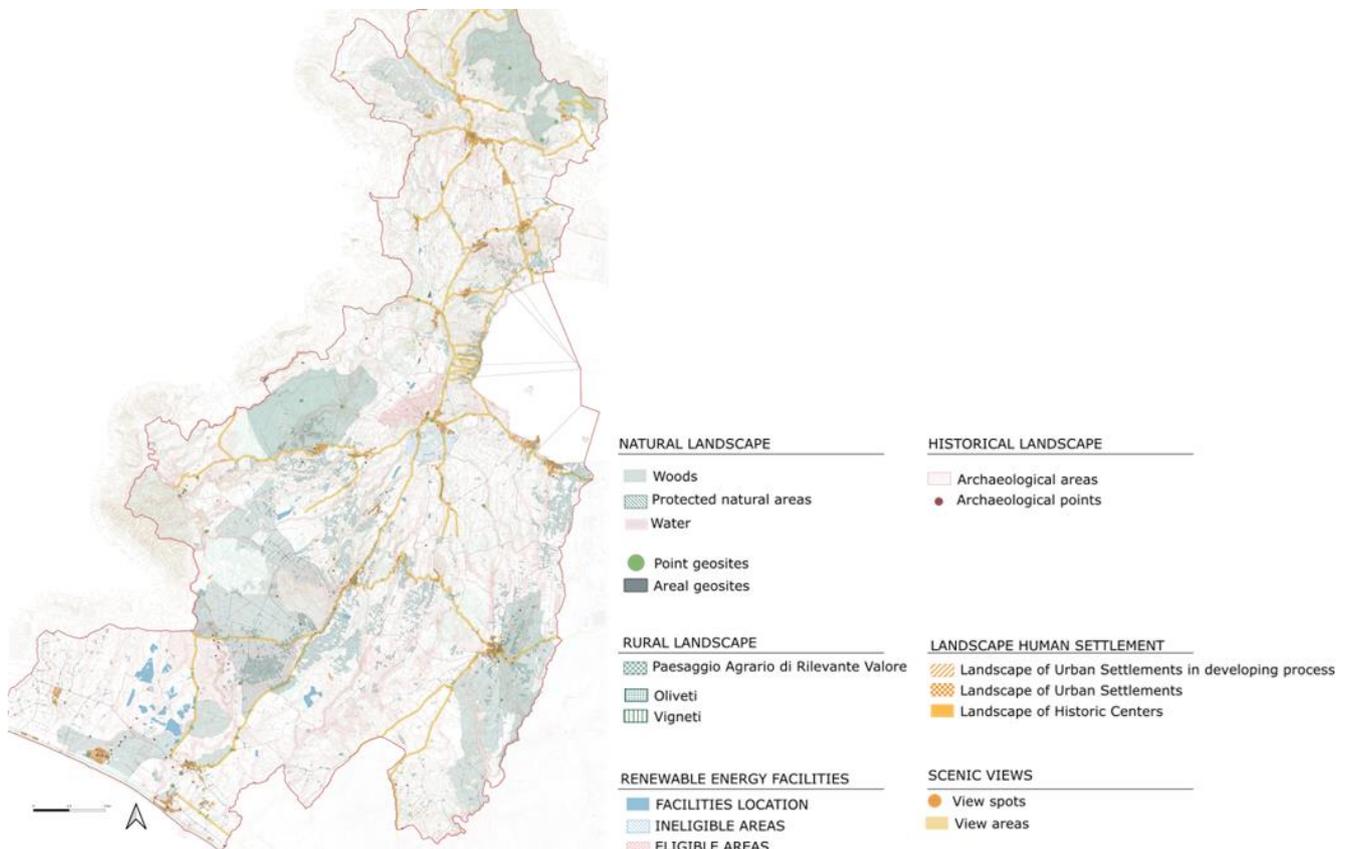


Figure 2. A draft of the on-going Plan.

## 5. Conclusion

As it turns out, the search for planning theories and practices that have dealt in some way with considering landscape, energy and tourism together has made it possible to point out the absence of useful references for dealing in an integrated way with such deeply interconnected issues as these. Moreover, at the inter-municipal scale where there is also little routine planning practices, the difficulty of local institutions to coordinate for the development of integrated plans and shared spatial strategies is greatest: it is therefore understandable that it is even more so with reference to difficult issues such as landscapes, energy and tourism. Within this logic, as noted above, Regional Plans are necessary but not sufficient tools, especially for territories such as the one in question. Nonetheless, in view of the identification of approaches to theories and practices (albeit derived from the only binary thematic insights available) it can be more clearly argued how the treatment of complex issues (at the intersection of landscape, energy and tourism), draws attention precisely to the importance of settled communities and, above all, the role of local governments.

Therefore, in the work conducted so far, we have overall aimed to test and practice a trajectory of reappropriation of the inter-municipal planning process within a broader sharing by the 19 municipalities. In fact, precisely in the absence of references to similar tools already used in Italy or in the rest of Europe, for the elaboration of the required planning tool it was deemed useful to assume the existing Strategy Document in order to provide useful guidelines for integrated and inter-municipal planning for intermediate/non-metropolitan territories such as the one in question.

Thus, also with reference to the reflections and practices explored in favor of this specific territorial context, the direction of work undertaken allows overall to propose to:

- 1) addressing the joint treatment of major challenges on landscape, alternative energy and tourism as an opportunity to give substance to multi-stakeholder practices,
- 2) consider in an integrated way the different systems present (agroforestry, agriculture, natural), for the purpose of building local renewable energy filters in respect of the landscape and tourism of the entire territory also *perceived* as an essential planning unit on which to operate,
- 3) trigger processes that aim to go beyond the (mere) integrated management of resources, transportation, and services, in order to define spatial planning tools capable of offering a different interpretation of heritage and different value and ecological dimensions.

Moreover, in relation to what considered literature indicates, the strategy that has already been formally subscribed to and is the result of a collaborative and multistakeholder process that is highly formalized, however perfectible, has been assumed as relevant. While it is true, in fact, that the signed Strategy Document has not yet realized the planned actions, as well as the implementation of interventions, it is also true that it has

turned out to be partially or totally unrelated to spatial plans and, more generally, to municipal and inter-municipal planning practices. Thus, the direction taken and proposed here as a whole – also in favor of similar areas nationally and internationally – supports: a) the direction of work pioneered for integrated and inter-municipal planning, which seems to represent an opportunity not to be missed to address issues that are as complex as they have been underestimated up to now; b) the urgency of intervening precisely in the territories most exposed to the criticality of complex issues that can easily produce further weakening and marginalization.

## Abbreviations

SNAI	National Strategy for Inner Areas
PNIEC	National Integrated Energy and Climate Plan
NRP	National Recovery and Resilience Plan
PIT	Tuscany Region Integrated Plan
PPR	Umbria Region Landscape Plan
PPTR	Apulia Region Territorial and Landscape Plan
PTPR	Emilia-Romagna Region Territorial and Landscape Plan

## Funding

The research is related to a larger EU Project Funds.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Aaen, Sara Bjørn, Søren Kerndrup, and Ivar Lyhne. 2016. "Beyond public acceptance of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development." *Energy Policy* 96: 576-586. <https://doi.org/10.1016/j.enpol.2016.06.031>
- [2] Agrillo, Alessio, Vincenzo Surace, Paolo Liberatore. 2022. "Solar photovoltaics - statistical report 2021." Italy: GSE-Gestore dei Servizi Energetici S.p.A.
- [3] Albrechts, Louis. 2015. "Ingredients for a more radical strategic spatial planning". *Environment and Planning B: Planning and Design* 42(3): 510-525. <https://doi.org/10.1068/b130104p>
- [4] Amorosino, Sandro. 2022. "The 'dialectic' between landscape protection and renewable energy production". *Construction Law Review* 4(2): 261-279.
- [5] Apostol, Dean, J. Palmer, M. Pasqualetti, R. Smardon and R. Sullivan, 2016. *The renewable energy landscape: Preserving scenic values in our sustainable future*. Milton Park: Taylor & Francis. <https://doi.org/10.4324/9781315618463>

- [6] Barca, Fabrizio, Philip McCann, and Andrés Rodríguez-Pose. 2012. "The case for regional development intervention: place-based versus place-neutral approaches." *Journal of regional science* 52(1): 134-152. <https://doi.org/10.1111/j.1467-9787.2011.00756.x>
- [7] Barozzi Reggiani, Giovanni. 2022. "The principle of maximum deployment of renewable energy and the balancing of constitutionally relevant values in the regulation of so-called suitable areas." *Environmental Law Review* 3: 597-642.
- [8] Becken, Susanne, and David G. Simmons. 2002. "Understanding energy consumption patterns of tourist attractions and activities in New Zealand." *Tourism management* 23(4): 343-354. [https://doi.org/10.1016/S0261-5177\(01\)00091-7](https://doi.org/10.1016/S0261-5177(01)00091-7)
- [9] Becken, Susanne, David G. Simmons, and Chris Frampton. 2003. "Energy use associated with different travel choices." *Tourism Management* 24(3): 267-277. [https://doi.org/10.1016/S0261-5177\(02\)00066-3](https://doi.org/10.1016/S0261-5177(02)00066-3)
- [10] Becken, Susanne. 2011. "Oil, the global economy and tourism." *Tourism Review* 66(3): 65-72. <https://doi.org/10.1108/16605371111175339>
- [11] Beech, John G. and Simon Chadwick. eds. 2006. *The business of tourism management*. London: Pearson education.
- [12] Bidwell, David. 2013. "The role of values in public beliefs and attitudes toward commercial wind energy." *Energy Policy* 58: 189-199. <https://doi.org/10.1016/j.enpol.2013.03.010>
- [13] Bonaiti, Nicola Berti-Angelo. 2023. "Aspects and Problems of Recent Reforms on the Implementation of Renewable Energy Plants." *EnvironmentRight* 23(1): 1-28.
- [14] Bridge, Gavin. 2010. "Geographies of peak oil: The other carbon problem." *Geoforum* 41(4): 523-530. <https://doi.org/10.1016/j.geoforum.2010.06.002>
- [15] Bridge, Gavin, S. Bouzarovski, M. Bradshaw and N. Eyre. 2013. "Geographies of energy transition: Space, place and the low-carbon economy." *Energy policy* 53: 331-340. <https://doi.org/10.1016/j.enpol.2012.10.066>
- [16] Brown, Gregory. 2006. "Mapping landscape values and development preferences: a method for tourism and residential development planning." *International journal of tourism research* 8(2): 101-113. <https://doi.org/10.1002/jtr.562>
- [17] Bucci, Gaetano. 2023. "Licensing regimes for renewable energy plants: the "point" on the most recent constitutional jurisprudence." *EnvironmentRight* 23(1): 222-229.
- [18] Buckley, Ralf. 2011. "Tourism and environment." Annual review of environment and resources 36: 397-416. <https://doi.org/10.1146/annurev-environ-041210-132637>
- [19] Buckley, Ralf. 2012. "Sustainability reporting and certification in tourism." *Tourism Recreation Research* 37(1): 85-90. <https://doi.org/10.1080/02508281.2012.11081692>
- [20] Carrosio, Giovanni. 2020. *Rural renewable energy districts and local energy production RESEARCH REPORT*. Padua, Italy: Equal Project "Solidarity Energy" - ITG2VEN033.
- [21] Carrosio, Giovanni. 2022. "Ecological transition as seen from fragile areas." *Ethics for the Professions*: 97-104.
- [22] Cetin, Mehmet. 2015. "Evaluation of the sustainable tourism potential of a protected area for landscape planning: a case study of the ancient city of Pompeipolis in Kastamonu." *International Journal of Sustainable Development & World Ecology* 22(6): 490-495. <https://doi.org/10.1080/13504509.2015.1081651>
- [23] Chiabrando, Roberto, Enrico, Fabrizio and Garnerò Gabriele. 2009. "The territorial and landscape impacts of photovoltaic systems: Definition of impacts and assessment of the glare risk." *Renewable and Sustainable Energy Reviews*, 13(9): 2441-2451. <https://doi.org/10.1016/j.rser.2009.06.008>
- [24] De Leo, Daniela. 2023. "Dealing with areas 'that do not matter' in Europe: the relevance of filling the gap in multilevel governance processes in the case of the northern Lazio Region in Italy". *DISP* 59(3): 52-68; <https://doi.org/10.1080/02513625.2023.2288446>
- [25] De Leo, Daniela, Altamore, Sara. 2024. "La SNAI oltre la SNAI. Pianificare per favorire l'attuazione dei Documenti di Strategia". *Territorio* (106): 101-110. <https://doi.org/10.3280/TR2023-106013>
- [26] De Leo, Daniela, Altamore, Sara. 2023. "Il prerequisito dell'associazione delle funzioni fondamentali di SNAI per il rilancio della pianificazione sovracomunale in "ARCHIVIO DI STUDI URBANI E REGIONALI" 137/2023, pp 35-57, <https://doi.org/10.3280/ASUR2023-137003>
- [27] De Leo, Daniela, Altamore, Sara. 2023. "Why multi-stakeholder practices don't work: looking beyond the extent and diversity of actors for co-producing collective action; a case study from an inner area in Italy". *Planning Practice & Research*. 38(3): 1-17 <https://doi.org/10.1080/02697459.2023.2199647>
- [28] De Leo, Daniela, Altamore, Sara. 2022. "Territori intermedi del Lazio e Contratti di Fiume. Interpretazioni e strumenti per territori né metropolitani né interni". *ASUR* 135: 27-44; <https://doi.org/10.3280/ASUR2022-135002>
- [29] Delicado, Ana, Elisabete Figueiredo, and Lu í Silva. 2016. "Community perceptions of renewable energies in Portugal: Impacts on environment, landscape and local development." *Energy Research & Social Science* 13: 84-93. <https://doi.org/10.1016/j.erss.2015.12.007>
- [30] Devine-Wright, Patrick. 2005. "Beyond NIMBYism: toward an integrated framework for understanding public perceptions of wind energy." *Wind Energy: An International Journal for Progress and Applications in Wind Power Conversion Technology* 8(2): 125-139. <https://doi.org/10.1002/we.124>
- [31] Devine-Wright, Patrick. 2011. "Place attachment and public acceptance of renewable energy: A tidal energy case study." *Journal of Environmental Psychology* 31(4): 336-343. <https://doi.org/10.1016/j.jenvp.2011.07.001>
- [32] Strategy Document. 2020. *Area Interna Alta Tuscia-Antica città di Castro. Area Strategy*. Rome, Italy.

- [33] Nadin, V., A. M. Fernández Maldonado, W. Zonneveld, D. Stead, M. Dąbrowski, K. Piskorek,... and A. Münter. 2018. *COMPASS-Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe. Applied Research 2016-2018*. EPSON Final Report.
- [34] Ferrario, Viviana, and Benedetta Castiglioni. 2017. "Visibility/invisibility in the 'making' of energy landscape. Strategies and policies in the hydropower development of the Piave river (Italian Eastern Alps)." *Energy Policy* 108: 829-835. <https://doi.org/10.1016/j.enpol.2017.05.012>
- [35] Frantál, Bohumil, J. Kunc. 2011. "Wind turbines in tourism landscapes: Czech Experience." *Annals of Tourism Research* 38(2): 499-519. <https://doi.org/10.1016/j.annals.2010.10.007>
- [36] Frantál, Bohumil, and Renata Urbánková. 2017. "Energy tourism: An emerging field of study." *Current Issues in Tourism* 20(13): 1395-1412. <https://doi.org/10.1080/13683500.2014.987734>
- [37] Ghosn, Rania. 2010. "Landscapes of Energy. Landscape Journal: design, planning, and management of the land." *New Geographies#2* 30(1): 151-152.
- [38] Holden, Matthew. 2008. "Reflections on how political scientists (and others) might think about energy and policy." In *The Oxford Handbook of Public Policy* Goodin, Robert, Michael Moran, and Martin Rein (eds). Oxford: Oxford University Press.
- [39] Illich, Ivan 1983. "The social construction of energy." *New Geographies#2* 30(1): 11-19.
- [40] Innes, Judith E., and David E. Booher. 2003. "The impact of collaborative planning on governance capacity." Working Paper, No. 03. University of California, Institute of Urban and Regional Development (IURD), Berkeley, CA. <http://hdl.handle.net/10419/23606>
- [41] Isik, Cem, Serdar Ongan, and Dilek Özdemir. 2019. "The economic growth/development and environmental degradation: evidence from the US state-level EKC hypothesis." *Environmental Science and Pollution Research* 26: 30772-30781. <https://doi.org/10.1007/s11356-019-06276-7>
- [42] Jerpåsen, Gro B., and Kari C. Larsen. 2011. "Visual impact of wind farms on cultural heritage: A Norwegian case study." *Environmental Impact Assessment Review* 31(3): 206-215. <https://doi.org/10.1016/j.eiar.2010.12.005>
- [43] Jobert, Arthur, Pia Laborgne, and Solveig Mimler. 2007. "Local acceptance of wind energy: Factors of success identified in French and German case studies." *Energy policy* 35(5): 2751-2760. <https://doi.org/10.1016/j.enpol.2006.12.005>
- [44] King, Brian, Abraham Pizam, and Ady Milman. 1993. "Social impacts of tourism: host perceptions." *Annals of tourism Research* 20(4): 650-665. [https://doi.org/10.1016/0160-7383\(93\)90089-L](https://doi.org/10.1016/0160-7383(93)90089-L)
- [45] Lanzani, Arturo, De Leo, Daniela, Mattioli, Cristina, Morello Eugenio, and Zanfi, Federico. 2021. "Nell'Italia di mezzo: ri-generazione e valorizzazione dei territori della produzione", *Ricomporre i divari. Politiche e progetti territoriali contro le disuguaglianze e per la transizione ecologica*, Coppola, Alessandro, et alii (eds) *Ricomporre i divari. Politiche e progetti territoriali contro le disuguaglianze e per la transizione ecologica* 107-115. Torino: Il Mulino.
- [46] Lennox, J. 2012. "Impacts of high oil prices on tourism in New Zealand." *Tourism Economics* 18(4): 781-800. <https://doi.org/10.5367/te.2012.0147>
- [47] Libosada Jr, Carlos M. 2009. "Business or leisure? Economic development and resource protection-Concepts and practices in sustainable ecotourism." *Ocean & Coastal Management* 52(7): 390-394. <https://doi.org/10.1016/j.ocecoaman.2009.04.004>
- [48] Lilley, Meredith Blaydes, Jeremy Firestone, and Willett Kempton. 2010. "The effect of wind power installations on coastal tourism." *Energies* 3(1): 1-22. <https://doi.org/10.3390/en3010001>
- [49] May, John. 2010. "The Becoming-Energetic of Landscape." *New Geographies#2* 30(1): 23-32.
- [50] McCombes, Lucy, Frank Vanclay, and Yvette Evers. 2015. "Putting social impact assessment to the test as a method for implementing responsible tourism practice." *Environmental Impact Assessment Review* 55: 156-168. <https://doi.org/10.1016/j.eiar.2015.07.002>
- [51] McCool, S., A. Spenceley. 2014. "Tourism and protected areas a growing nexus of challenge and opportunity editorial." *Koedoe: African Protected Area Conservation and Science* 56(2): 1-2. <https://doi.org/10.4102/koedoe.v56i2.1221>
- [52] Michalena, Evanthie. 2008. "Using renewable energy as a tool to achieve tourism sustainability in Mediterranean islands." *Études carib éennes* 11. <https://doi.org/10.4000/etudescaribeennes.3487>
- [53] Molnarova, Kristina, P. Sklenicka, J. Stiborek, K. Svobodova, M. Salek, and E. Brabec. 2012. "Visual preferences for wind turbines: Location, numbers and respondent characteristics." *Applied Energy* 92: 269-278. <https://doi.org/10.1016/j.apenergy.2011.11.001>
- [54] Munafò, M. ed. 2022. *Land consumption, spatial dynamics, and ecosystem services*. 2022 Edition. SNPA Report 32/22.
- [55] Nadaï Alain, and Dan van Der Horst. 2010 "Introduction: Landscapes of energies." *Landscape research* 35(2): 143-155. <https://doi.org/10.1080/01426390903557543>
- [56] Nadaï Alain, and Olivier Labussiere. 2015. "Wind power and the emergence of the Beauce landscape, Eure-et-Loir, France." *Landscape Research* 40(1): 76-98. <https://doi.org/10.1080/01426397.2013.784732>
- [57] Nepal, Sanjay K. 2008. "Tourism-induced rural energy consumption in the Annapurna region of Nepal." *Tourism Management* 29(1): 89-100. <https://doi.org/10.1016/j.tourman.2007.03.024>

- [58] Pentelow, Laurel, and Daniel Scott. 2010. "The implications of climate change mitigation policy and oil price volatility for tourism arrivals to the Caribbean." *Tourism and Hospitality Planning & Development* 7(3): 301-315. <https://doi.org/10.1080/1479053X.2010.502390>
- [59] Persha, Lauren, Arun Agrawal, and Ashwini Chhatre. 2011. "Social and ecological synergy: local rulemaking, forest livelihoods, and biodiversity conservation." *Science* 331(6024): 1606-1608. <https://doi.org/10.1126/science.1199343>
- [60] Pröbstl, U., A. Jiricka, and F. Hindinger. 2011. Renewable energy in winter sports destinations - desired, ignored or rejected? In *Managing alpine future II: Inspire and drive sustainable mountain regions*, edited by Borsdorf, A., J. Stötter and E. Veuillet, 309-318. Wien: Austrian Academy of Sciences Press.
- [61] Puttilli, Matteo 2014. *Geography of renewable sources. Energy and Territory for an Eco-Restructuring of Society: Energy and Territory for an Eco-Restructuring of Society*. Milan: FrancoAngeli.
- [62] Robert, Jean. 2010. "Alternatives and the Technogenic Production of Scarcity." *New Geographies#2* 30(1): 133-138.
- [63] Rodríguez-Pose, Andrés. 2018. "The revenge of the places that don't matter (and what to do about it)." *Cambridge journal of regions, economy and society* 11(1): 189-209. <https://doi.org/10.1093/cjres/rsx024>
- [64] Saarinen, Jarkko. 2006. "Traditions of sustainability in tourism studies." *Annals of tourism research* 33(4): 1121- 1140. <https://doi.org/10.1016/j.annals.2006.06.007>
- [65] Sheppard, Stephen RJ. 2012. *Visualizing climate change: a guide to visual communication of climate change and developing local solutions*. London: Routledge.
- [66] Solarin, Sakiru Adebola. 2014. "Tourist arrivals and macroeconomic determinants of CO<sub>2</sub> emissions in Malaysia." *Anatolia* 25(2): 228-241. <https://doi.org/10.1080/13032917.2013.868364>
- [67] Star, Susan Leigh, and James R. Griesemer. 1989. "Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social studies of science* 19(3): 387-420. <https://www.jstor.org/stable/285080>
- [68] Stokes, Christopher, E. Beaumont, P. Russell, and D. Greaves. 2014. "Anticipated coastal impacts: What water-users think of marine renewables and why." *Ocean & coastal management* 99: 63-71.
- [69] Stremke, Sven. 2015. "Sustainable energy landscape: Implementing energy transition in the physical realm." In *Encyclopedia of environmental management*, edited by Sven Erik Jørgensen, 1-9. New York: Taylor and Francis.
- [70] Tabatchnaia-Tamirisa, Natalia, M. K. Loke, P. Leung, and K. A. Tucker. 1997. "Energy and tourism in Hawaii." *Annals of Tourism Research* 24(2): 390-401. <https://doi.org/10.22190/FULP1901073D>
- [71] Terkenli, Theano S. 2004. "Tourism and landscape." In *A companion to tourism*, edited by Alan A. Lew, C. Michael Hall, Allan M. Williams, 337-348. Oxford: Blackwell.
- [72] Terkenli, Theano S. 2021. "Research advances in tourism-landscape interrelations: An editorial." *Land* 10(9): 944. <https://doi.org/10.3390/land10090944>
- [73] Tverijonaite, Edita, A. D. Sæþórsdóttir, R. Olafsdóttir, and C. M. Hall. 2022. "How close is too close? Mapping the impact area of renewable energy infrastructure on tourism." *Energy Research & Social Science* 90: 102574. <https://doi.org/10.1016/j.erss.2022.102574>
- [74] Van der Horst, Dan. 2007. "NIMBY or not? Exploring the relevance of location and the politics of voiced opinions in renewable energy siting controversies." *Energy policy* 35(5): 2705-2714. <https://doi.org/10.1016/j.enpol.2006.12.012>