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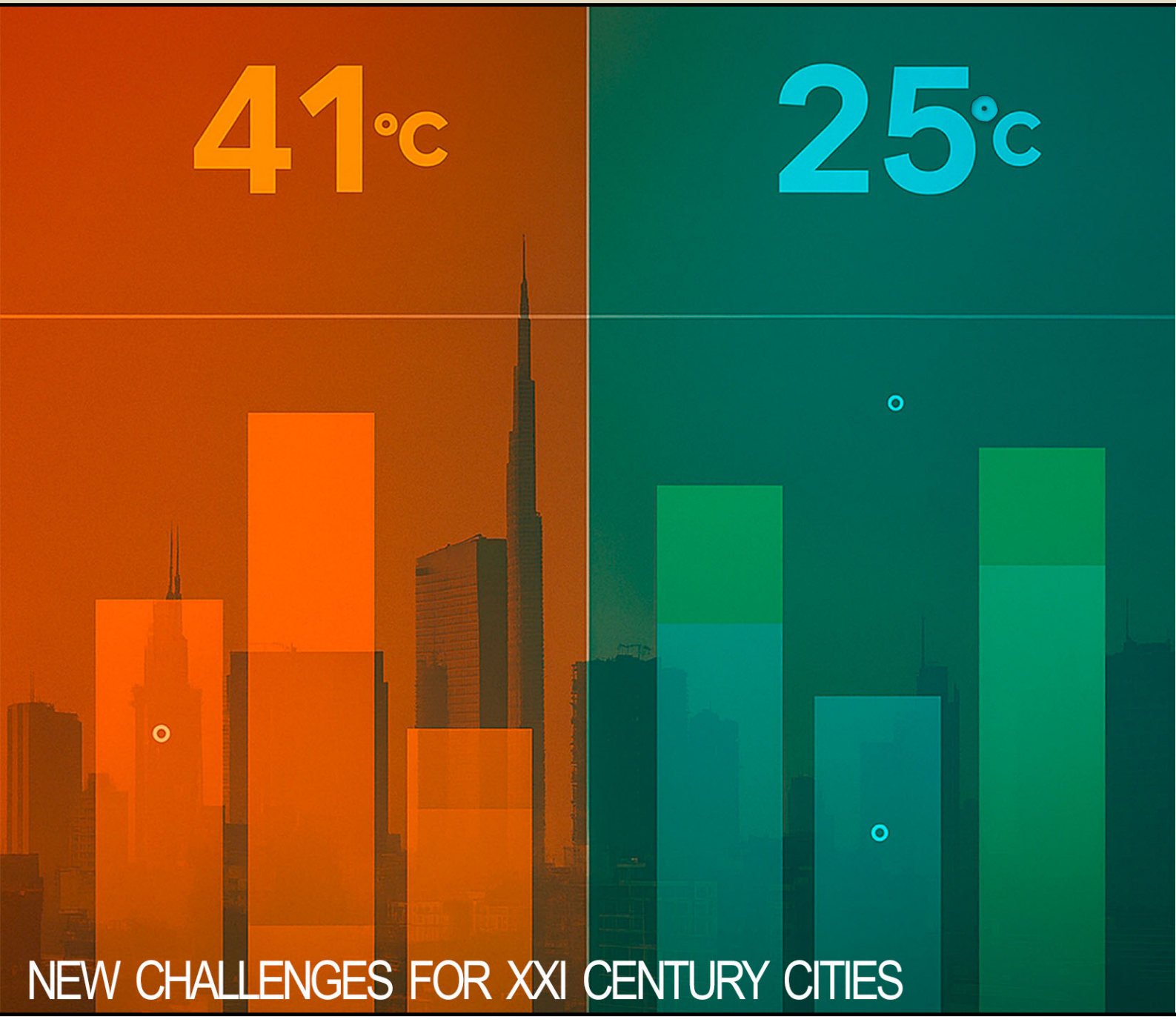

NEW CHALLENGES FOR XXI CENTURY CITIES

Multilevel scientific approach to impacts of global warming on urban areas, energy transition, optimisation of land use and emergency scenario

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REVIEW NOTES
International Regulation and Legislation for the Energy Transition

From RED II to RED III: Renewable Acceleration Areas as a new challenge for urban and territorial planning

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Abstract
Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always remaining in the groove of rigorous scientific in-depth analysis. This section of the Journal, Review Notes, is the expression of continuously updating emerging topics concerning relationships between urban planning, mobility and environment, through a collection of short scientific papers written by young researchers. The Review Notes are made of four parts. Each section examines a specific aspect of the broader information storage within the main interests of TeMA Journal. This section, International Regulations and Legislation for the Energy Transition, explores the challenges and opportunities in the urban context to understand the evolving landscape of the global energy transition. The RED III Directive (2023/2413) introduces more ambitious targets for renewable energy than RED II and provides for Renewable Acceleration Areas (RAAs) to expedite plant authorizations. This gives a more prominent role to urban and regional planning, which must integrate energy, environmental, and infrastructure criteria into location decisions. The Italian case demonstrates how multilevel governance, along with operational tools such as strategic assessments and digital platforms, is crucial in defining RAAs. Cities thus assume a central role in decarbonization processes. This paper highlights opportunities and critical issues towards a faster, fairer, and more sustainable energy transition.

Keywords
Energy transition; Urban panning; Renewable acceleration areas; RED III

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1. Introduction

Contemporary cities face unprecedented energy and climate challenges. Despite occupying less than 3% of the planet's surface, urban agglomerations are home to the majority of the population and consume over 65% of the world's energy, producing more than 70% of CO_2 emissions. This concentration of energy consumption makes cities highly vulnerable to problems such as dependence on fossil fuels, rising energy prices, and air pollution (EEA, 2023). To address these challenges, clean energy transitions have accelerated, driven by government policies and industry strategies that have promoted actions for greater energy independence, in response to geopolitical instability caused by open conflicts around the world and soaring energy prices (IEA, 2024). In this context, urban areas can become drivers of the energy transition: thanks to the density of supply and demand, cities offer opportunities for the widespread installation of renewable sources (from solar panels on rooftops and facades to wind farms in peri-urban areas), the development of sustainable district heating networks, and the promotion of local energy communities (Russo et al., 2025; Volpatti et al., 2024). In other words, cities and local administrations have the potential to play a central role in decarbonization, integrating energy objectives into urban planning and contributing to national and European climate targets (EC, 2023; Amado & Poggi, 2022). The European Union has recognized this urban centrality, directly involving cities in initiatives such as the "100 climate-neutral cities by 2030" mission and, above all, updating the regulatory framework on renewable energy to strengthen the link between energy policies and territorial planning (D'Amico, 2023; Ulpiani, 2023). In particular, the recent evolution from Renewable Energy Directive II to Renewable Energy Directive III introduces innovative tools, including Renewables Acceleration Areas, which represent a new challenge and opportunity for urban and regional planning.

2. From RED II to RED III: more ambitious targets and acceleration zones for renewables

The RED II Directive (2018/2001/EU), part of the Clean Energy for All Europeans package, consolidated the European framework for renewable energy by 2030, setting a binding target of at least 32% renewable energy in the EU's energy consumption. It introduced principles for simplifying authorization procedures (time limits on procedures) and tools to actively involve citizens in the transition, such as renewable energy communities. Despite this progress, the accelerating climate crisis and recent geopolitical turbulence have pushed the EU to revise its ambitions upwards. In 2019, with the Green Deal and the Fit for 55 packages, the Commission proposed updating the directive (EC, 2019). This resulted in RED III, formalized as Directive (EU) 2023/2413, which raises the binding target to 42.5% renewable energy in the EU mix by 2030 (EU, 2023). In addition to quantitative targets, RED III introduces significant qualitative changes, particularly in the areas of permitting and planning. Renewable energy plants are now explicitly recognized as projects of primary public interest, which lays the legal foundation to facilitate their construction by overcoming bureaucratic bottlenecks. One of the key elements, innovative compared to RED II, is the establishment of Renewables Acceleration Areas (RAAs). These are geographic areas particularly suited to the installation of renewable energy plants, where permitting procedures are simplified and application processing times are approximately halved compared to ordinary procedures. In these priority areas, projects will benefit from accelerated procedures (maximum 12 months for permit decisions, compared to the 24 months required outside of RAAs). The designation of RAAs will occur through a national planning process coordinated with local authorities. RED III requires each Member State to map its territory (land, inland waters, and territorial sea) to identify renewable energy potential, cross-referencing it with future energy demand, the presence of grids and storage, and environmental constraints. Based on this mapping, Member States must identify the most suitable areas (divided by technology: for example, photovoltaic, wind, etc.). European legislation provides guidelines for the characteristics that these RAAs must have. Acceleration areas are those parts of the territory where the construction of a certain type

of renewable energy plant would not have significant environmental impacts. In practice, this means prioritizing sites with low environmental and territorial sensitivity: the Commission cites brownfields, industrial zones, landfills, or brownfield sites, as well as already developed areas (such as rooftops or parking lots for photovoltaic systems) as ideal candidates for RAAs. Environmentally protected areas, such as natural parks, Natura 2000 sites, and the like, are excluded from RAAs, and in general, areas of high ecological sensitivity must be avoided. This concept of "intelligent" selection is accompanied by the requirement to conduct prior environmental assessments at the planning level: the designation of acceleration zones must be carried out through a Strategic Environmental Assessment (SEA) to ensure that the concentration of plants in RAAs does not compromise the protection of ecosystems and landscapes, shifting the environmental review to the planning stage rather than the individual project. In other words, RED III aims to plan the energy transition by integrating environmental and territorial criteria from the outset, thus expediting individual permits in the selected locations. This represents a significant shift in approach compared to the past, where assessments were conducted on a case-by-case basis: the current approach is to plan ahead where plants can be built more quickly and with fewer conflicts, thanks to renewable energy zoning.

3. Implementation in Italy

In recent years, Italy has moved to implement European directives on renewable energy, albeit through a complex and sometimes fragmented regulatory process. RED II (2018) was implemented with Legislative Decree no. 199/2021, which updated the national regulations for the promotion of RES (Rocchetti et al., 2025). Among the innovations introduced was a system for planning suitable and unsuitable areas within the national territory. Article 20 of Legislative Decree 199/2021 (Disciplina per l'individuazione di superfici e aree idonee per l'installazione di impianti a fonti rinnovabili) provided for the identification, through specific criteria, of the surfaces and areas deemed favorable for the installation of renewable energy plants, with the aim of expediting the authorization procedures for projects located in these preferential areas (Gazzetta Ufficiale della Repubblica Italiana, 2021). This concept predates the European RAAs, although Decree 199/2021 initially delegated the task of defining suitable areas within regional borders to the Regions through their own planning acts.

A decisive push toward rationalization came through the Piano Nazionale di Ripresa e Resilienza (PNRR) and related reforms. The Italian PNRR, specifically the RepowerEU component, envisaged a structural reform to streamline the authorization process for renewables, including the identification of acceleration zones at the subnational level and the adoption of a Testo Unico FER by 2025. Based on this mandate, Legislative Decree No. 190/2024, known as the Testo Unico FER, was issued in 2024, coordinating the authorization regimes for energy production from RES in a single provision (Gazzetta Ufficiale della Repubblica Italiana, 2024a). In parallel with the Testo Unico, Italy has defined the operational criteria for suitable areas within the country. Ministero dell'Ambiente e Sicurezza Energetica (MASE) issued the il "Decreto Aree Idonee" (Ministerial Decree 14/09/2023, published in July 2024). This provision, composed of 9 articles, establishes the principles and criteria for identifying areas considered suitable or unsuitable for RES plants and, more importantly, sets a regional distribution of new renewable capacity targets for 2030. Specifically, the 19 regions and 2 autonomous provinces of Italy are assigned a share of the 80 GW of additional power to be installed nationwide by 2030. Each region therefore has an annual capacity target to achieve and must plan its installations taking these quantities into account (Gazzetta Ufficiale della Repubblica Italiana, 2024b).

These areas, designated as suitable by the decree, formed the basis for future Renewable Acceleration Areas (RAAs). Indeed, a recent Legislative Decree (Legislative Decree no. 73/2025) further specified that the RAAs must be identified within the suitable areas already defined by law and must necessarily include all existing industrial areas in the territory (subject, of course, to environmental constraints). Regions will, however, have the right to propose additional acceleration zones in their Plans, including other types of sites deemed suitable (e.g., marginal agricultural areas, portions of land with little landscape value, etc.) (Gazzetta Ufficiale della

Repubblica Italiana, 2025). To implement these provisions and meet European deadlines, the MASE relies on the technical and operational support of Gestore dei Servizi Energetici (GSE), the public company that promotes RES in Italy. Specifically, GSE has developed two key tools: the Piattaforma Aree Idonee (PAI) and the national mapping of acceleration zones. The Piattaforma Aree Idonee (PAI) (Fig.1) is an IT portal designed to support regions and autonomous provinces in the management and planning of areas designated for renewable energy plants (https://areeidonee.gse.it/). It allows for the collection, visualization, and sharing of data on identified suitable areas, creating a unified information framework.

Fig. 1 Piattaforma Aree Idonee (PAI)

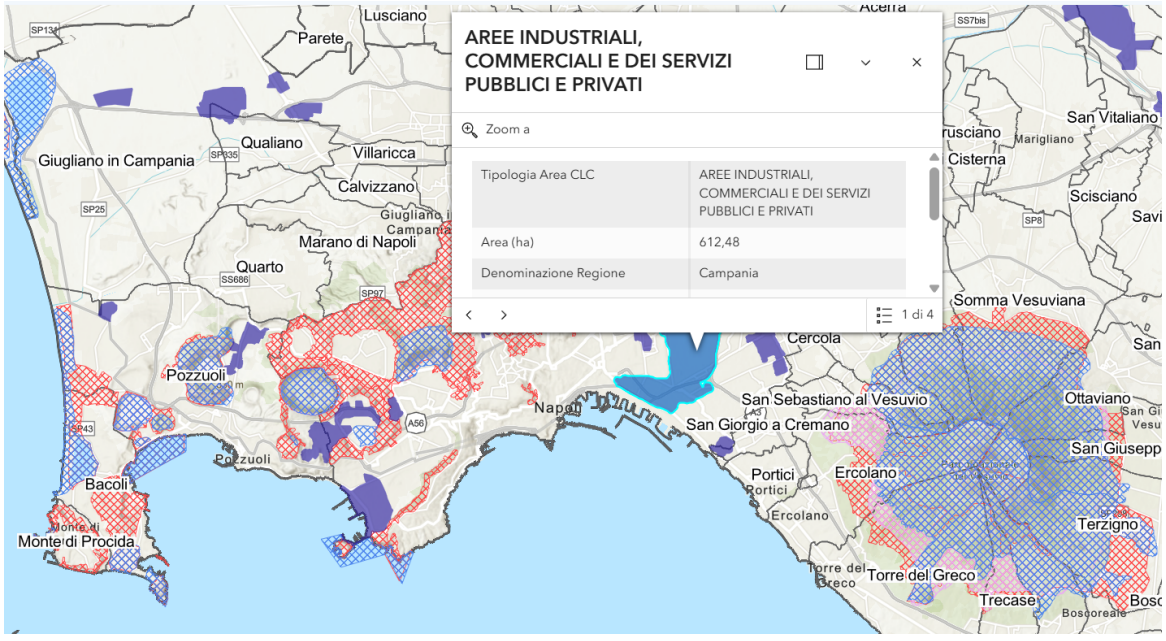

Fig. 2 Interactive Map of Acceleration Zones

Based on the information uploaded to the Piattaforma Aree Idonee, the GSE then developed and published the Interactive Map of Acceleration Zones (Fig.2). This map, available online from May 21, 2025 (https://areeaccensione.gse.it/), provides a cartographic representation of all potential RAAs across the country, offering a comprehensive overview at the national scale. In this first version, the RAAs represented primarily coincide with the industrial areas and other suitable areas already registered by the PAI: it is in fact specified that the areas represented were identified based on the information available on the PAI.

The national map will provide a starting point that can be integrated and refined by the Regions: the latter will be required to verify and report any misalignments or errors in the cartography to the GSE and will be able to propose adding further details to the RAAs. The publication of the national map has a dual value: on the one hand, it increases transparency for citizens and investors, showing where the State intends to focus transition efforts; on the other, it serves as a multilevel coordination tool, aligning all stakeholders (ministries, local authorities, operators) on the same reference territorial data.

From a territorial governance perspective, the next step is the institutionalization of the RAAs in the Regional Plans. Current legislation requires each Region (or Autonomous Province) to develop an Acceleration Area Plan, which must be subjected to a Strategic Environmental Assessment and formally adopted within a strict timeframe. According to the latest provisions, the Regions must complete the approval process by February 21, 2026. In short, Italy is translating the European concept of RAAs into a national planning system for suitable areas, coordinated centrally but implemented at the regional and local levels with the support of innovative tools. The implementation of RED III offers the opportunity to strengthen the link between energy policies and territorial governance: through the Decreto Aree Idonee, the GSE-MASE platforms, and future regional plans, we are moving toward a model in which decisions on the location of renewable energy plants are integrated into territorial planning. This institutional and information integration promises to accelerate the authorization process (reducing uncertainty and appeals) and improve the overall sustainability of location decisions, thanks to ex ante strategic assessments and the area suitability filter. The multilevel governance introduced by the State, Regions, local authorities, and technical agencies such as the GSE will have to prove itself worthy of a complex but crucial task: implementing the vision of a greener Europe on the ground, overcoming bureaucratic obstacles without sacrificing community involvement and the protection of the environmental and cultural heritage of the territories (Papa et al., 2021).

4. Conclusions

The transition from RED II to RED III marks a substantial evolution in European renewable energy policies, with more ambitious goals and innovative tools that intensify the intertwining of energy and territorial planning (Poggi & Amado, 2024; Zhu et al., 2025).

RAAs emerge as the emblem of this new phase: designed to streamline and accelerate the deployment of green plants, they require an integrated and forward-looking planning approach (Ceglia et al., 2022; Mazzeo & Polverino, 2023).

As we have seen, identifying RAAs requires a prior assessment of the territories from both a technical (energy potential, grid availability) and an environmental and social perspective (ecological awareness, local consensus). For European cities and local governments, this challenge also represents a historic opportunity. Never have energy and climate policies recognized such a central role at the urban and regional level: municipalities, cities, and regions are becoming co-actors in implementing European objectives, called upon to map their territories and shape future energy choices. If they seize this opportunity, they will not only be able to effectively contribute to decarbonization, but also catalyse local environmental, economic, and social benefits from the transition. For example, the careful allocation of RAAs could trigger processes of urban and regional regeneration, redevelop abandoned sites and attract clean energy production chains. In parallel, complementary policies for participation and the redistribution of benefits can ensure that no community is

left behind: the energy transition must also be a just transition, in which costs and benefits are equitably shared, and the most vulnerable groups emerge strengthened (Blečić et al., 2025).

In conclusion, the transition from RED II to RED III highlights a strengthening of the link between energy policies and territorial governance, paving the way towards a more integrated sustainable development model (Fan et al., 2022; Martinelli, 2025). The new European provisions, if implemented with strategic vision, could make cities and regions protagonists of the energy transition, reconciling decarbonization and equity. The success of this ambitious plan will depend on the ability of all stakeholders to harmonize European directives with effective local governance, equipping themselves with appropriate technical and regulatory tools and keeping citizen participation at the core (Soares et al., 2025). Only in this way can the Renewables Acceleration Areas truly translate into spaces for accelerating not only renewable energy, but also a just and integrated transition within European urban and regional spaces.

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Fig.1: Gestore dei Servizi Energetici (GSE). (2025). Retrieved from; https://areeidonee.gse.it/;

Fig.2: Gestore dei Servizi Energetici (GSE). (2025). Retrieved from: https://areeaccelerazione.gse.it/.

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