

ENVIRONMENTAL SUSTAINABILITY OF THE ENERGY TRANSITION: AGRIVOLTAICS IN ITALY AND IN THE INSULAR REGIONS ¹

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We are witnessing a "reversal of values" ... "which seems to have the objective of indiscriminately subordinating the long-lasting values that characterize every type of community to short-term ones with more immediate effect"

F. SALVIA, *La parabola del diritto amministrativo negli ultimi anni sotto la spinta degli uomini del fare amici del macro e dei «guadagni rapidi»; nemici irriducibili dei beni comuni e di ogni forma di manutenzione dell'esistente*, in *Dir. Econ.*, 2020, 174.

Abstract. Il saggio analizza il contesto regolativo nel quale si è articolata nell'ordinamento giuridico italiano la disciplina degli impianti fotovoltaici nelle aree agricole ed, in particolare, dell'agrivoltaico alla luce degli orientamenti del legislatore, anche di quelli introdotti con il d.l. n. 63 del 2024, e della giurisprudenza amministrativa. Vi è, infatti, un dilemma immanente tra lo sviluppo delle fonti energetiche alternative e la tutela del paesaggio e delle tradizioni agricole dei territori. La "via italiana" è, adesso, quella di inibire l'allocatione degli impianti fotovoltaici sui terreni agricoli e di sviluppare l'agrivoltaico coniugando con un giusto bilanciamento, transizione energetica e sostenibilità ambientale e paesaggistica. Tale scelta assume connotati ancor più significativi per le Isole sottoposte ad un maggior grado di vulnerabilità, esigenze di sostenibilità ambientale e dipendenza energetica. In questo senso vanno ricordate le, pur differenti, esperienze della Regione Siciliana e della Regione Sardegna.

1 * Testo della relazione introduttiva al Panel "Environmental Sustainability, Ecological Transition and the Rights of Future Generations" tenuta alla Conferenza annuale ICON-S 2024 (International Society of public Law) a Madrid, presso la Ie University, "The Future of Public Law: Resilience, Sustainability and AI", l'8 luglio 2024. GAETANO ARMAO è professore associato di diritto amministrativo, abilitato ordinario, nell'Università di Palermo, delegato del Rettore per la questione insulare. Presidente della Commissione tecnica specialistica per le autorizzazioni ambientali della Regione Siciliana, è autore di oltre 250 pubblicazioni in materia.

* Introductory report to the Panel "Environmental Sustainability, Ecological Transition and the Rights of Future Generations" held at the ICON-S 2024 Annual Conference (International Society of public Law) in Madrid, at the Ie University, "The Future of Public Law: Resilience, Sustainability and AI", on 8 July 2024. GAETANO ARMAO is an associate professor of administrative law, fully qualified, at the University of Palermo, delegate of the Rector for the insular question, and is the author of over 250 publications on the subject. He also chairs the specialist technical commission for environmental authorizations of the Sicilian Region.

This study draws inspiration from the chair report at the Panel "Environmental Sustainability, Ecological Transition and the Rights of Future Generations", ICON-S 2024 ANNUAL CONFERENCE OF INTERNATIONAL SOCIETY OF PUBLIC LAW, *The Future of Public Law: Resilience, Sustainability and AI*, July 8 - 10, 2024, IE University Law School, Madrid, to which additions have been made and notes added. The paper is dedicated to the memory of Massimo Maniscalco, dear friend and colleague of many initiatives, public law Reader at the Department of Political Science and International Relations, who recently passed away.

Parole chiave: Green deal europeo, Agrivoltaico, Agricoltura, Energie rinnovabili, Transizione energetica, Regolamentazione, Insularità.

Abstract. *The essay analyses the regulatory context in which the regulation of photovoltaic systems in agricultural areas and, in particular, agrivoltaics has been articulated in the Italian legal system in light of the legislator's guidelines, including those introduced with the d.l. n. 63 of 2024, and administrative jurisprudence. There is, in fact, an immanent dilemma between the development of alternative energy sources and the protection of the landscape and agricultural traditions of the territories. The "Italian way" is now to inhibit the allocation of photovoltaic systems on agricultural land and to develop agrivoltaics by combining with the right balance, energetic transition and environmental and landscape sustainability. This choice takes on even more significant connotations for the Islands subjected to a greater degree of vulnerability, environmental sustainability needs and energy dependence. In this sense, the experiences of the Sicilian Region and the Sardinia Region should be remembered.*

Keywords: *European Green deal, Agrivoltaics, Agriculture, Renewable energy, Energy transition, Regulation, Insularity*

SUMMARY: 1. A premise on agrivoltaics. - 2 The choices of the Italian legislator on photovoltaics in the agricultural sector. - 3. Agrivoltaics as an agricultural and energy production system. - 4. The legal framework of agrivoltaics in the Italian legal system. - 5. The agrivoltaic system and its constraints. - 6.1. Insularity and energy transition: agrivoltaics and the discipline in island regions. - 6.2. The Autonomous Region of Sardinia. - 6.3. The Sicilian Region.- 7. Some final considerations.

1. This reflection focuses on at the environmental sustainability of the energy transition², with particular reference to the need to combine the two profiles. The energy transition, from the perspective of sustainable development³, may, in fact, not always be compatible with environmental sustainability⁴ or even in conflict.

2 See L. NICOLA, V. LUBELLO, A. DE LUCA, *The european union renewable energy transition*, Milano, 2019; T. FAVARO, *Regolare la «transizione energetica»: Stato, Mercato, Innovazione*, Padova, 2020; M. BOEVE, S. AKERBOOM, *Environmental Law for Transitions to Sustainability*, London, 2021; L. KRÄMER, C. BADGER, *Krämer's Eu Environmental Law*, London, 2024; also *EU 8th Environment Action Programme. Monitoring report on progress towards the 8th EAP objectives 2023*, EEA Report 11/2023, in <https://www.eea.europa.eu/publications/european-union-8th-environment-action-programme/download>.

3 On this topic, see, after the pioneering work of F. SALVIA, *Ambiente e sviluppo sostenibile*, in *Riv. giur. ambiente*, 1998, 235 e ss. See F. FRACCHIA, *Il principio dello sviluppo sostenibile*, in M. RENNA, F. SAIITA (eds.), *Studi sui principi del diritto amministrativo*, Milano, 2012, 433 ss. for which this principle constitutes the "keystone" of environmental law, as it reflects its essential character and, therefore, the matrix of duty and the constraint placed on current generations to guarantee future ones, configuring itself as the only instrument realistic to guarantee the interests of the human species.

4 See R. BIFULCO, A. D'ALOIA (eds.), *Un diritto per il futuro. Teorie e modelli dello sviluppo sostenibile e della responsabilità intergenerazionale*, Napoli, 2008; M. ALLENA, F. FRACCHIA, *Globalization, environment and sustainable development, in global, European and Italian perspectives*, in *Riv. ita. dir. pubbl. com.*, 2011, 781 ss.; T. GROPPI, *Sostenibilità e costituzioni: lo Stato costituzionale alla prova del futuro*, in *DPCE*, n. 1, 2016 ; D. PORENA, *Il principio della sostenibilità. Contributo allo studio di un programma costituzionale di solidarietà intergenerazionale*, Torino, 2017; L. AMMANNATI (ed.), *La transizione energetica*, Torino, 2018; M. CAFAGNO, *Analisi economica del diritto e ambiente. Tra metanarrazioni e pragmatismo*, in *Dir. econ.*, 2019, 155 ss.; E. SCOTTI, *Poteri pubblici, sviluppo sostenibile ed economia circolare*, in *Dir. econ.*, 2019, 493 ss.; P. PANTALONE (ed.), *Doveri intergenerazionali e tutela dell'ambiente. Sviluppi, sfide e prospettive per Stati, imprese e individui*, monographic issue of *Il diritto dell'economia*, 2021;

This is the case of the relationship between the allocation of alternative energy systems (in particular solar photovoltaic and wind) and the protection of the landscape⁵, in particular the agricultural one. This concern is particularly felt in Italy, which is the third among the European markets preceded by Germany and Spain is the eighth largest market in the world⁶.

In 2021, the global agrivoltaics sector was valued at USD \$3.6 billion and is projected to grow to USD \$9.3 billion by 2031, representing an annual compound growth rate of 10.1% per annum. Agrivoltaics projects have successfully attracted increasing investment and research demonstrating the technical, economic, and scientific rationale to advance agrivoltaics as a crucial technology to achieve net zero emissions goals. The legal framework enabling agrivoltaics development is at varying stages of maturity across different jurisdictions.

Agrivoltaics hold significant and expansive potential. Yet, without well-defined and transparent legal frameworks, in Europe as in the rest of the world, the sector might falter unless the industry can demonstrate fair and equitable distribution of benefits to all stake-holders, including agricultural landholders⁷.

M. FRANCAVIGLIA, *Le ricadute costituzionali del principio di sostenibilità a dieci anni dal 31. Trattato di Lisbona. Spunti ricostruttivi alla luce della giurisprudenza europea e costituzionale*, in *Federalismi*, 19/20, 2022; F. DE LEONARDIS, *La transizione ecologica come modello di sviluppo di sistema: spunti sul ruolo delle amministrazioni*, in *Dir. amm.*, 4, 2021, 779 ss.; A.M. CHIARIELLO, *La funzione amministrativa di tutela della biodiversità nella prospettiva dello sviluppo sostenibile*, Napoli, 2022; M. DELSIGNORE, *Lo sviluppo sostenibile e la sua evoluzione: da principio privo di cogenza giuridica a modello da realizzare anche per il tramite del diritto*, in *Lexambiente*, 1, 2023, 2 ss.; G. D. COMPORTI, *Energia, ambiente e sviluppo sostenibile*, in *www.federalismi.it*, 13, 2023; P. LOMBARDI, *Ambiente e generazioni future: la dimensione temporale della solidarietà*, in *www.federalismi.it*, 1/2023; D. PORENA, *Sustainability in the fundamental charts, with a focus on Italy*, in *www.ambientediritto.it*, 2, 2024, to which refer for a review of the public law doctrine on the matter.

⁵ In the Italian legal system there is an autonomous legal notion of the subject of "landscape" compared to neighbouring subjects such as urban planning (territorial governance) and the environment resulting in differentiated legal regimes, in terms of the division of competences between the State, Regions and local autonomy, scope of protection, procedural regime. This legal regime of landscape protection is found in the Cultural Heritage Code and is part of the principles established by the Italian Constitution in art. 9, modified by const. law n. 1 of 2022 which establishes that the Republic protects the landscape and the historical and artistic heritage of the Nation. In general in the broad doctrine see: M. IMMORDINO, *Paesaggio (tutela del)*, in *Digesto delle discipline pubblicistiche*, Torino, 1995, X, 575 ss.; G.F. CARTEI, *Il paesaggio*, in S. CASSESE, (ed.), *Trattato di diritto amministrativo, Diritto amministrativo speciale*, Milano, 2003, II, 2109 e ss.; P. CARPENTIERI, *La nozione giuridica di paesaggio*, in *Riv. trim. dir. pubbl.*, II, 2004, 363 ss.; P. STELLA RICHTER, *La nozione di patrimonio culturale*, in *Foro Amm. CdS*, 2004, 1280 ss.; P. CHIRULLI, *Il governo multilivello del patrimonio culturale*, in *Dir. Amm*, 2019, 697 ss.; L. CASINI, *Patrimonio culturale e diritti di fruizione*, in *Riv. trim. dir. pubbl.*, 2022, 657 ss.; C. TUBERTINI, *A 50 anni dalla Convenzione Unesco del 1972 sulla protezione del patrimonio culturale mondiale: riflessioni alla luce dell'esperienza italiana*, in *Aedon*, 2022, 147 ss.; F. FRACCHIA, *L'ambiente nell'art. 9 della Costituzione: un approccio "in negativo"*, in *Dir. econ.*, 2022, 15 ss.; M. GOLLA, *Paesaggio e dintorni*, in G. CORSO, F.G. SCOCA, A. RUGGERI, G. VERDE (eds.), *Scritti in onore di Maria Immordino*, Napoli, 2022, 1719 ss., and *Nuove Aut.*, 2023, 1, 17 ss.; A BARTOLINI, *Green Deal europeo e il c.d. principio DNSH*, *federalismi.it*, 15/2024, 51 ss.

⁶ EU Global Market Outlook For Solar Power 2024-2028 <https://www.solarpowereurope.org/insights/outlooks/global-market-outlook-for-solar-power-2024-2028/detail>.

⁷ This study provides the first socio-legal study of agrivoltaics development applying an energy justice framework. It comparatively analyses the mature agrivoltaics sectors, laws, and policies in Massachusetts (United States of America) and Japan in a functional comparative analysis with New South Wales (Australia) applying the three principal pillars of energy justice; recognition, procedural, and distributive justice. This study demonstrates how energy justice can generate a framework for regulatory reform. Such reform can facilitate the expansion of agrivoltaics and unlock the full potential of co-locating of solar energy and agriculture.

2. The acceleration that this market has undergone requires, under the pressure of “*European Green Deal*”⁸ - launched by the Commission in December 2019 and developed through a variety of measures ranging from the European Climate regulation to the “*Fit for 55*” package with ambitious objectives and relevant regulatory project - to make some choices and a balancing attempt such as the one that has recently seen the Italian legislator appropriately intervene with a ban on the construction of solar photovoltaic systems in agricultural areas.

In this sense, should be noted Law Decree 15 May 2024, n. 63 converted by Law 12 July 2024, n. 101, containing: «*Urgent provisions for agricultural, fishing and aquaculture enterprises, as well as for enterprises of national strategic interest.*».(art. 5⁹) which introduced the ban on the installation of solar photovoltaic systems on agricultural land which, however, does not extend to “agrivoltaics” systems, as the rule expressly refers exclusively to ground-mounted photovoltaic systems, and the recently published decree June 21, 2024 on suitable areas¹⁰.

In Italy, following Legislative Decree no. 199/2021¹¹, transposing the RED II EU directive, the objective was to accelerate the country's sustainable growth path, in harmony with European objectives, as envisaged by the PNIEC (*National Integrated Plan for Energy and Climate*)¹²

8 On *European Green Deal*, see the communication COM (2019) 640 which postulates the adoption of broad reforms with the aim of achieving “*climate neutrality*” by 2050, defined as “*the balance between emissions and absorptions of all the Greenhouse Gas in the Union*” to be achieved through the “*irreversible and gradual reduction of anthropogenic greenhouse gas emissions*” and on the other, to the “*increase in absorptions from sinks*”, i.e. forests, vegetation, soil, water bodies (art. 1 and 2 EU reg. 2021/1119, i.e. the *European climate legislation*), amongst: Italian scholars see E. BRUTI LIBERATI, *Politiche di decarbonizzazione, costituzione economica europea e assetti di governance*, in *Dir. pubbl.*, 2021, 415 ss.; E. CHITI, *Managing the Ecological Transition of the EU: The European Green Deal as a Regulatory Process*, in *Common Mkt. L. Rev.*, 2022, 59, 19 ss.; D. BEVILACQUA, E. CHITI, *Green deal*, Bologna, 2024.

9 Art. 5, limits the possibility that agricultural land becomes suitable for the installation of photovoltaic systems. It should be noted immediately that it does not entail a blockade, but rather restricts the number of areas in which such systems can be built, thus introducing a ban for areas other than those specifically identified. It follows that the construction of photovoltaic systems on the ground, in agricultural areas, is not only no longer permissible, but does not even allow reference to the art. 20, par. 7, of leg. decree no. 199 of 2021 pursuant to which: “*areas not included among the suitable areas cannot be declared unsuitable for the installation of renewable energy production plants, in the context of territorial planning or in the context of individual procedures, due to the only failure to be included in the list of suitable areas*”. The objective of the provision is to limit the consumption of agricultural land and provides for the introduction, in art. 20 of the Leg. Decree of 8 November 2021, n. 199, of a new paragraph (1-bis), according to which the installation of photovoltaic systems with modules placed on the ground, in areas classified as agricultural by the current urban planning plans, is permitted exclusively in the indicated areas. See <https://www.gazzettaufficiale.it> On the decree, see the monographic issue of the magazine *La Consulenza agricola*, 6-2024, in <https://consulenzaagricola.it>

10 MINISTRY OF THE ENVIRONMENT AND ENERGY SECURITY: “*Regulations for the identification of surfaces and areas suitable for the installation of renewable energy systems*”.

11 Leg. decree 8 November 2021, n. 199 implementing Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

12 The final version of the PNIEC presented to the EU Commission in June 2024, it is reiterated that Italy will have to reach a power from renewable sources of 131 GW by 2030. It is expected that almost eighty (79.2) of these will come from solar, 28.1 from wind, 19.4 from hydro, 3.2 from bioenergy and 1 GW from geothermal sources, see <https://www.mase.gov.it> .

and PNRR (*National Recovery and Resilience Plan*) (NRPP)¹³, Italian implementation of the *Next generation EU*¹⁴.

Some sort of dilemma arises: it is possible to cause damage to the landscape¹⁵ and therefore to the environment itself in order to achieve the ecological transition by creating extensive solar photovoltaic and wind power systems or rather the protection of the landscape taking on a priority connotation may require us to adopt methods that can make interests compatible that might otherwise be conflicting?

Consider the construction of 4/500 megawatt huge photovoltaic systems occupying 6/700 hectares of agricultural land as some projects in Sicily, Sardinia or Puglia.

Achievements that are often subjected to whirlwind changes of ownership, between developers, intermediaries, market operators, investment funds, with the sole objective of generating financial capital gains that have nothing to do with the ecological transition, in some cases with interference of organised crime and corruption¹⁶.

Malfunctions are certainly less likely in the agrivoltaics sector, also due to the presence of the agricultural company to which the cultivation or livestock activity is entrusted.

In line with Italian constitutional and administrative jurisprudence, it must be remembered that the function of landscape protection is inviolable from any form of attenuation determined by the balancing or comparison with other interests, even if public, which may come into consideration from time to time: this attenuation, in the provisional translation, would illegitimately and paradoxically lead to giving less protection, despite the intensity of the landscape value of the asset, the more intense and strong the public interest in the transformation of the territory is or could be¹⁷.

13 The *PNRR* has provided for a specific investment measure (M2C2.1) for the development of agrivoltaics, which involves: i) *the implementation of hybrid agriculture-energy production systems that do not compromise the use of land dedicated to agriculture, but contribute to the environmental and economic sustainability of the companies involved*; ii) *monitoring of the implementations and their effectiveness, with the collection of data both on the photovoltaic systems and on the underlying agricultural production and activity, in order to evaluate the microclimate, water saving, recovery of soil fertility, resilience to changes climate and agricultural productivity for different types of crops. The objective of the investment is to fully install a production capacity from agrivoltaics system of 1.04 GW, which would produce approximately 1,300 GWh per year*". About the measures of the plan G. CARTEI, *Energie rinnovabili e Piano Nazionale di Ripresa e Resilienza. Atti del Convegno (25 giugno 2021)*, Napoli, 2022; and also G. STRAMBI, *Riflessioni sull'uso del terreno agricolo per la realizzazione di impianti alimentati da fonti rinnovabili: il caso dell'agrivoltaico*, in *Riv. dir. agr.*, 2021, 3, 395 ss.; M. GIOIA, *PNRR, agrivoltaico e uso «ibrido» della terra: alcuni recenti spunti giurisprudenziali*, in *Dir. e giur. agraria, alimentare e dell'amb.*, 1, 2023.

14 For an analysis of the program forecasts in correlation to the *European Green Deal* see M. CLARICH, *Energia*, in *Enc. dir., I tematici*, III, *Funzioni amministrative*, Milano, 2022, 441 ss.

15 It appropriately N. GULLO, *Transizione ecologica e promozione delle energie rinnovabili: verso una dequotazione del paesaggio?*, in G. CORSO, F.G. SCOCA, A. RUGGERI, G. VERDE (eds.), *Scritti in onore di Maria Immordino*, cit., 1761 ss., foreshadows the risk of dequotation of the landscape. It is worth remembering that in Italian law the protection of the landscape is accompanied by sanctions about it see C. VENTIMIGLIA, *Tutela del paesaggio e strumenti sanzionatori*, in M. IMMORDINO, N. GULLO (eds.), *Sviluppo sostenibile e regime giuridico dei parchi*, Napoli, 2008, 277 ss.

16 See N. AMADORE, *I sovversivi: In terra di mafia la normalità è rivoluzione*, Roma, 2012 and more recently L. DI BENEDETTO, *Gli eco-affari da miliardi di euro*, *Panorama*, 7 february 2023.

17 Legal studies on the topic, mainly dedicated to agricultural and tax law, are still limited, in particular those of public law, in general, among others, see: R. LOMBARDI, *Il riparto di competenze tra Stato, Regioni ed enti locali: il modello costituzionale e quello emergente dalla legislazione relativa alle procedure energetico-*

The assessment entrusted to the administration responsible for protection is institutionally aimed at preventing unacceptable alterations of the pre-existing protected value from occurring. The fundamental principle of the art. 9 of the Italian Constitution, *a fortiori* after the modification made by constitutional law 11 February 2022, n. 1, inserting the protection of the environment, biodiversity and ecosystems among the fundamental principles of the Italian legal system¹⁸.

The law constitutionalises at the highest level the protection of the landscape and cultural heritage of the Nation - and this requires, on the part of the specifically responsible Administration, that technical-professional evaluations be expressed and not comparative evaluation of interests, even if public and by other reputable administrations of particular importance

ambientali, in www.giustamm.it, n. 5/2005, 3 ss.; A. MASSONE, *La (difficile) convivenza tra governo del territorio, tutela dell'ambiente e produzione di energia elettrica da fonti rinnovabili*, in *Foro amm.-TAR*, 2009, 3, 654 Ss.A. MURATORI, *Promozione dell'uso dell'energia da fonti rinnovabili: la nuova direttiva «unificata» 2009/28/CE*, in *Ambiente e sviluppo*, 2009, 8, 685 ss.; B. POZZO, *Le politiche comunitarie in campo energetico*, in *Riv. giur. Ambiente*, 2009, 6, 841 ss.; N. RANGONE, *Fonti rinnovabili di energia: stato della regolazione e prospettive di riforma*, in *Giur. Cost.*, 2010, 2, 1490 ss.; F. DI DIO, *Il "paradosso fotovoltaico" dopo la Consulta: criteri di bilanciamento tra impatto paesaggistico ambientale e sviluppo delle energie rinnovabili. Nota a C. Cost. 26 marzo 2010, n. 119*, in *Ambiente e sviluppo*, 2010, 5, 774 ss.; G. DE STEFANO, *Che la localizzazione degli impianti di energia rinnovabili in zone agricole non diventi una cattiva abitudine!* in *Riv. giur. agraria*, 2010, 579 ss.; P. M. VIPIANA, *La disciplina delle energie rinnovabili: modelli procedurali a confronto*, in *Quad. Reg.*, 2/2011, 465 ss.; S. MAGLIA, M.A. LABARILE, *Energia da fonti rinnovabili: le nuove procedure autorizzatorie alla luce della direttiva 2009/28/CE*, *ivi*, 2011, 2, 134 ss.; R. CARRIERI, *Politica europea per l'energia: le priorità di lungo termine*, *ivi*, 7, 669 ss.; C. VIVANI, *I procedimenti di autorizzazione alla realizzazione e alla gestione degli impianti di produzione di energia da fonti rinnovabili*, in *Urbanistica e appalti*, 2011, 7, 775 ss.; M. SANTINI, *Le energie rinnovabili tra qualità dell'ambiente e vincoli territoriali: le linee guida della Conferenza Unificata*, in *Urb. e app.*, 3/2011, 283 ss.; A. MARZANATI, *Semplificazione delle procedure e incentivi pubblici per le energie rinnovabili*, in *Riv. giur. ambiente*, 2012, 5, 499 ss.; G. COZZOLINO, *Energie rinnovabili e tutela dell'affidamento: qualche riflessione a proposito degli incentivi al fotovoltaico alla luce dei recenti sviluppi normativi*, in *Rivista AIC*, 2012, 1, 19 ss.; A. CANEPA, *Produzione, tassazione e fornitura di energia: recenti pronunce europee e nazionali (gennaio-giugno 2013)*, in *Riv. it. dir. pubb. com.*, 2013, 3-4, 879 ss.; M. PINNA, *Il Consiglio di Stato consente l'installazione di un impianto fotovoltaico in prossimità di un antico tratturo. Nota a Cons. Stato, sez. VI, 9 gennaio 2013, n. 59*, in *Dir. e giur. agraria, alimentare e dell'amb.*, 2013, 7-8, 2013, 482-483; U. BARELLI, *I limiti alle energie rinnovabili con particolare riferimento alla tutela della biodiversità*, in *Riv. giur. ambiente*, 2014, fasc. 1, 1 ss.; A. M. BASSO, *Realizzazione di impianto fotovoltaico tra destinazione agricola dei terreni e vincoli diretti ed indiretti: i vincoli monumentali a tutela dei beni culturali ed ambientali e l'autorizzazione regionale per il diritto di proprietà e la libertà d'iniziativa economica privata*, *Nota a TAR VE sez. II 18 gennaio 2013, n. 34*, *ibidem*, 493 ss.; S. VILLAMENA, *Fonti rinnovabili e zone agricole (Ovvero della destinazione del suolo agricolo per la produzione di energia)*, in *Riv. giur. edilizia*, 4, 2015, 157 ss.; G. MANFREDI, *I limiti all'insediamento nelle aree agricole degli impianti di produzione di energie da fonti rinnovabili*, in www.giustamm.it, 6/2015; C. MAINARDIS, *Competenza concorrente e fonti secondarie nel "governo" delle energie rinnovabili*, in www.osservatoriosullefonti.it, n. 3/2020; G. MARCHIANÒ, *Regolazione dell'energia elettrica da fonte rinnovabile in particolare nei terreni agricoli*, in www.AmbienteDiritto.it, 4/2020; E. SARTORE, *Agrivoltaico e transizione energetica: una soluzione concreta per uno sviluppo sostenibile?*, in *Diritto agr.*, 2022; 261 ss.; V. DI STEFANO, A. COLANTONI *Produzione di energia rinnovabile e agro-fotovoltaico: considerazioni alla luce del Piano nazionale ripresa e resilienza e del d.l. semplificazioni bis*, in *Dir. e giur. agraria, alimentare e dell'amb.*, 1, 2022; P. MASTELLONE, *La disciplina in materia di fonti di energia rinnovabili e la tendenza "decentralizzante": quale ruolo per lo Stato?*, in *Ceridap*, 1, 2024; L. AIELLO, *Paesaggio, agricoltura, energia: il modello dell'agrivoltaico*, draft, 2024. For an examination of the issues that arise on the topic of wind power, see F. DE LEONARDIS, *Criteri di bilanciamento tra paesaggio e energia eolica*, in *Dir. amm.*, 2005, 889 ss.; V. MOLASCHI, *Paesaggio versus ambiente: osservazioni alla luce della giurisprudenza in materia di realizzazione di impianti eolici*, in *Riv. giur. ed.*, 2019, 171 ss.

such as the same environmental interest connected to the construction of renewable source plants¹⁹.

In this regard, a solution that is proposed is that of agrivoltaics in technical terms, but also, and this is the object of this reflection, in legal terms.

3. Agrivoltaics systems are solar photovoltaic-based land co-use systems in which the spatial scheme of the modules, and therefore the distance between them and the density with respect to the unit of land considered, the height from the ground, determine a substantial recalibration in relation to the largest area dedicated to agricultural production or livestock, to combine food and energy production on the same land in a synergistic way.

As a result of this technique, the surface of the soil remains permeable and therefore reachable by the sun and rain, therefore fully usable for the normal needs of agricultural cultivation²⁰.

These systems, in fact, are designed in such a way as to leave a significant surface of land free for agricultural activities, allowing the use of land both to produce solar photovoltaic energy through the installation of solar panels and also to carry out pastoral and crop farming activities.

It follows that, compared to traditional solar photovoltaic systems placed on the ground, a radically different possibility opens up: that of combining the production of renewable energy and agricultural productivity, in some cases recovering abandoned land and combating desertification and hydrogeological instability.

18 The new text of the art. 9 of the Constitution establishes that “1. The Republic promotes the development of culture and scientific and technical research. 2. Protects the landscape and the historical and artistic heritage of the Nation. 3. Protects the environment, biodiversity and ecosystems, also in the interests of future generations. State law regulates the ways and forms of animal protection”. About the reform see for all F. DE LEONARDIS, *Lo Stato Ecologico. Approccio sistemico, economia, poteri pubblici e mercato*, Torino, 2024, XV ss.

19 On renewable energy sources, in the extensive bibliography, after the Italian constitutional reform of 2001 see: E. BRUTI LIBERATI, F. DONATI (eds.), *Il nuovo diritto dell'energia tra regolazione e concorrenza*, Torino, 2007; C. BUZZACCHI (ed.), *Il prisma energia. Integrazione di interessi e competenze*, Milano, 2010; P. RANCI (a cura di), *Economia dell'energia*, Bologna, 2011; F. CORTESE, F. GIUNTELLA, G. POSTAL (eds.), *La regolamentazione della produzione di energie rinnovabili nella prospettiva dello sviluppo sostenibile. Sistemi giuridici comparati, dal livello sovrastatale al locale*, Padova, 2013; G. NAPOLITANO, A. ZOPPINI (eds.), *Annuario di diritto dell'energia 2013, Regole e mercato delle energie rinnovabili*, Bologna, 2013; E.A. CARNEVALE, P. CARROZZA, G. CERRINA FERONI, G.F. FERRARI, G. MORBIDELLI, R. ORRÙ (eds.), *Verso una Politica Energetica integrata. Le energie rinnovabili nel prisma della comparazione*, Napoli, 2014; L. CUOCOLO, *Le energie rinnovabili tra Stato e Regioni. Un equilibrio instabile tra mercato, autonomia e ambiente*, Milano, 2011; M.T. RIZZO, *La materia “energia” e la competenza legislativa Stato-regioni*, Napoli, 2013; M. COCCONI, *Poteri pubblici e mercato dell'energia. Fonti rinnovabili e sostenibilità ambientale*, Milano, 2014; C. BATTIATO, *Profili costituzionali delle fonti energetiche rinnovabili*, Pisa, 2017; G. DE MAIO (ed.), *Introduzione allo studio del diritto dell'energia*, Napoli, 2019.

20 For the first definition of the concept see A. GOETZBERGER, A. ZASTROW, *On the Coexistence of Solar-Energy Conversion and Plant Cultivation*, in *Int. Journal of Solar Energy*, 1, 1982, 55 ss, more recently see S. SCHINDELE, M. TROMMSDORFF, A. SCHLAAK, T. OBERGFELL, G. BOPP, C. REISE, C. BRAUN, A. WESELEK, A. BAUERLE, P. HOGY, A. GOETZBERGER, E. WEBER, *Implementation of agrophotovoltaics: Techno-economic analysis of the price-performance ratio and its policy implications*, in *Applied Energy*, 2020; K. W. PROCTOR, G. S. MURTHY, C. W. HIGGINS, *Agrivoltaics align with green new deal goals while supporting investment in the US' rural economy*, in *Sustainability*, 2021, 13, 137 ss.

This challenges into question the scheme which is optimised only as a function of energy²¹ and costs, therefore that of ground-mounted solar photovoltaics, with opposite effects on the quality of the land and desertification, thus determining an advantage instead of other performances which are deriving from agricultural production.

In other words, the three-dimensional spatial scheme is affected by varying it, thus allowing different requests to be expressed simultaneously: those linked to energy, but also those linked to the development of agriculture²² to which profitability and the protection of the landscape are added.

This represents a totally innovative approach that sees solar photovoltaic systems not only as technical structures for energy production, often invasive as they are superimposed on the landscape, but spatial systems that can be designed precisely according to quality objectives that are linked to the landscape.

A purely technical issue thus becomes a trans disciplinary challenge in which the culture of the territory, cultural traditions and livestock farming, sheep farming, bee breeding and agri-food production find their place.

These characteristics justify a peculiar and completely differentiated legal and financial regime, in terms of greater favour, compared to the ordinary regulation of solar photovoltaic which, as we will see, is preclusive in light of the regulatory evolution in Italy.

In line with constitutional and administrative jurisprudence - as we will see - it must be remembered that the function of landscape protection is inviolable from any form of mitigation determined by the balancing or comparison with other interests, even public ones, which may come into consideration from time to time: such attenuation, in the provisional translation, would illegitimately and paradoxically lead to giving less protection, despite the intensity of the landscape value of the asset, the more intense and strong the public interest in the transformation of the territory is or could be.

21 In general, for an analysis of the energy system in Italy, see again M. CLARICH, *Energia*, in *Enc. dir., I tematici*, cit., 438 ss.

22 In the perspective of the 'Fischler' reform of 2003. About this must be remembered, as G. PISCIOTTA TOSINI, *European common agricultural policy and animal welfare*, in www.giureta.it, 2024, 251 ss. lastly pointed out, that the Council Regulation (EC) No.1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and amending Regulations (EEC) No. 2019/93, (EC) No. 1452/2001, (EC) No. 1453/2001, (EC) No. 1454/2001, (EC) 1868/94, (EC) No. 1251/1999, (EC) No. 1254/1999, (EC) No. 1673/2000, (EEC) No. 2358/71 and (EC) No. 2529/2001 – began as an Agenda 2000 'mid-term review' serving to verify the effect of the 1999 reforms but, in reality, evolved into a more incisive reform of Agenda 2000 itself, considerably furthering the reorganisation of the tools and the very purpose of European farmers' financial support. The main objectives of the 2003 reform were: a) to improve European agricultural competitiveness; b) to reorient production toward the market; c) to promote sustainable and socially acceptable agriculture; d) to strengthen rural development; e) to simplify the agricultural support system; f) to make the CAP more responsive to WTO commitments. With the reform that the new concept of environmental cross-compliance was introduced, which aimed – through the granting of economic support – to reward and incentivise agricultural entrepreneurs' maintenance of environmentally respectful production practices: minimising waste and the degrading of soil and air while respecting ecosystems, biodiversity, future generations and, indeed, animal welfare through-out the agri-food chain.

In particular the Italian Council of State correctly noted that: «*the production of electricity from renewable sources is in fact an activity of public interest which also contributes not only to the protection of environmental interests but, albeit indirectly, also to that of landscape values*»²³.

4. The qualification of a so-called system “agrivoltaics” system to exclude the application of the technical regulations foreseen for traditional solar photovoltaic systems referred to in Legislative Decree no. 28 of 2011 even more so today after the entry into force of the d.l. n. 63 of 2024 and art. 5 which prohibited the construction of new ground-mounted solar photovoltaic systems in agricultural areas.

The matter finds initial regulation in the guidelines of the *Ministry of the Environment and Energy Security* (MASE)²⁴ of 27 June 2022²⁵ which have precisely identified the specific characteristics and requirements that must exist for the classification of these particular categories of plants, the promotion of which has been facilitated by the transposition in Italy of the RED II directive which set, among the objectives, the acceleration of the country's economic and sustainable growth.

It is worth remembering, in fact, that according to administrative jurisprudence the authorisation for the installation of electricity production plants on agricultural land, if linked to agricultural production (agrivoltaic), must be concretely evaluated in relation to a multiplicity of criteria which must be ascertained from time to time²⁶.

It is for this reason that the legislator has imposed limitations on their installation, in order to balance the interest in the exploitation of renewable energy systems with environmental protection.

Consequently, the structure of the plant must guarantee, on the one hand, the continuity of agricultural activities on the land being installed and, on the other, a significant energy production deriving from renewable sources. In this sense and in order to strengthen the synergies of the system, the project must include a monitoring system to regularly verify the actual continuity of the agricultural activity, the yield of the cultivation, the maintenance of the production direction, as well as the minimum electrical producibility.

From a technical point of view, the guidelines identify specific spatial requirements; in this sense, a free space must be guaranteed between the system and the ground, so that, by

23 Cons. Stato, Sez. IV 12 aprile 2021, n. 2983, see V. DI STEFANO, *Il Consiglio di Stato sull'agrovoltaico*, in *Salvis Juribus*, 2021.

24 Today “*Ministry of the Environment and Energy Security*” (MASE), so renamed pursuant to the d.l. 11-11-2022, n. 173, subsequently converted with law. 16-12-2022, n. 204, which in turn modified the nomenclature “*Ministry of Ecological Transition*” (MITE) previously approved with the d.l. of 1-3-2021, n. 22, then converted with law. 22-4-2021, n. 55, see A. MOLITERNI, *Il Ministero della Transizione ecologica: una proiezione organizzativa del principio di integrazione*, in *Giorn. dir. amm.*, 4, 2021, 439 ss

25 See A. COLANTONI, V. DI STEFANO, *Linee guida per l'applicazione dell'Agro-fotovoltaico in Italia*, Università degli Studi della Tuscia, 2021.

26 Most recently TAR Sicilia, Catania, Sec. I, decision 6 February 2024, no. 430: “*There is no regulatory prohibition on the location of photovoltaic systems in agricultural areas, however, it is required, to this end, the carrying out of a particular investigation specifically aimed at evaluating whether the installation of the system in an area affected by quality agri-food production, or in an agricultural context of particular value (including landscape and not just “agricultural”), could compromise, or in some way interfere, with the particular protection of the cultural heritage and rural landscape*”

developing in height, the impacts on the ground are minimised, as well as the distance between one module and another must be ensured so as to avoid frequent areas of shade that may negatively impact agricultural production.

Furthermore, the need to guarantee the continuity of agricultural activity means that at least 70% of the surface area subject to intervention must be allocated to agricultural activity; so that the installation of energy systems cannot cover the entire area affected by the energy rationalisation intervention.

The peculiar characteristics of the agrivoltaics system make the latter an optimal solution in light of the balance between the various interests involved, i.e., on the one hand, the production of energy with renewable sources, on the other, the protection of agricultural activity and landscape in general. A balance that cannot be considered only of a formal type (the co-presence of the two activities), but which must be explored, both on a technical and economic-business level, for both profiles which, in this way, must remain independently in balance²⁷.

The Administration must carefully weigh the compatibility of the system for the purposes of a positive conclusion of the authorization procedure, enjoying broad discretion, both from an administrative and technical point of view, the choice of which must, however, be promptly justified so that it can be subject to jurisdictional review only in the case of obvious logical flaws or evaluative deficiencies.

In particular, as clarified by recent jurisprudence of the supreme administrative Court the assessment must be carried out primarily on the basis of the need to guarantee the effective continuity of the two systems, as well as, at the same time, the coherence of the agricultural activity with the development of the territory.

In this sense, it is not sufficient to demonstrate the existence of the carrying out of a generic agricultural activity, but rather it is necessary to deduce from the project objectives elements that can be traced back to an effective compatibility of the system with the specific characteristics of each individual soil.

Furthermore, the circumstance according to which the installation of an agrivoltaics system is characterized by greater environmental sustainability compared to other energy production systems from renewable sources does not determine an automatic positive judgment of project implementation, given that every intervention must be evaluated concretely in relation to actual environmental-landscape sustainability, examining any possible prejudices to agriculture.

It is in this sense that the Administration could well preclude the installation of the plant where it is incompatible with the current cultivation structure, or in relation to the non-opportunity of the exploitation of further agricultural land, having regard to the existence of various energy plants coming from from renewable sources, both in reference to the provi-

²⁷ It is worth highlighting that agrivoltaics system remain industrial-type systems and are therefore subject to EIA. (if they exceed the power of 1 MW) pursuant to L.R. 11/2001 (Ann. B, letter B.2.g/5-bis), which defines environmental impact: "*the set of effects, direct and indirect, short and long term, permanent and temporary, single and cumulative, positive and negative that intervention plans and programs and projects of works or interventions, public and private, have on the environment understood as a complex set of human and natural systems*".

sions of the regional plan. which in its Guidelines expressly aims to prefer locations on roofs, facade coverings, industrial areas to be reclaimed, etc.

The project must, therefore, concretely demonstrate, through specific indications, the compatibility with the crops growing in the area which must be guaranteed continuously.

The agrivoltaics system, as a "hybrid" system - and the recent stop intimated by the Judges of the Italian Council of State is very precise in this regard - not only must the simultaneous existence of both the photovoltaic and the agricultural structure be ensured, but at the same time the former must be preordained and functional to the second, so that the objective pursued by the PNRR (NRPP) of increasing the competitiveness of the agricultural sector and reducing energy costs is achieved, positively impacting the climate and the environment²⁸.

As appropriately highlighted in the last ruling referred to, this does not mean that this type of system is free from limitations. On the contrary, according to the Judge's clear warning that emerges in the aforementioned ruling, the appropriate authorities must necessarily take into account the specific characteristics of the plant in order to limit soil consumption as much as possible.

As other administrative judge pointed out: *"In order for the agrivoltaics system to effectively carry out the incentive function that the legislator assigns to it, it must allow an implementation of the already existing agricultural activity and not lead to further consumption of fertile soil or in any case a decrease or impoverishment of the agricultural surface intended for identity cultivation"*²⁹. It is not simply a matter of placing two production models (the agricultural one and the energy one) in a binary way, even subordinating the production capacities (and the related proceeds) of the second to the first, creating a combination that is more of a verbal synthesis, but rather to structure a real synergy between the two production compendiums, which strengthens the company's production capacity³⁰. Only this pre-eminent profile can justify

28 Cons. Stato, Sec. IV, 30 august 2023 n. 8029, but also 11 september 2023, n. 8258 which in a similar sense underlines *"the competent Administration must take into account the innovative and distinctive characteristics of the designed agrivoltaics system, aimed at preserving the continuity of the agricultural cultivation activities and the "natural" elements of the installation site (such as the permeability of the soil and its irradiation by sunlight) guaranteeing, at the same time, the production of electricity from renewable sources and, therefore, ensuring, through the integration between agricultural activity and electricity production, the valorisation of both subsystems"*.

29 T.A.R. Puglia, Lecce, Sec. III, 10 march 2023, n. 322, see also before T.A.R. Puglia, Lecce, Sec. II, 25 October 2022, n. 1750 *"In particular, as clarified several times by this Section (see decisions nos. 586/22 and 1267/22), while in the case of photovoltaic systems tout court the ground is made waterproof, the growth of vegetation is prevented, and the ground agriculture therefore loses all its production potential, in agrivoltaics the system is instead positioned directly on higher poles, well spaced from each other, so as to allow the work machines to carry out agricultural cultivation both below the photovoltaic modules, and both between one and the other module"*, for a comment on this latest decision see G. MARRULLI, *Sulla realizzazione e sulle modalità di esercizio di un impianto agrivoltaico e relativa compatibilità ambientale*, in *Dir. e giur. agraria, alimentare e dell'amb.*, 2, 2023, In different direction T.A.R. Puglia, Lecce, Sec. II, 9 February 2023, n. 200, according to which: *"the agrivoltaics system is a sub-species of the genus of classic photovoltaic systems, and the only element that differentiates them is the derogatory regulations regarding state incentives"*.

30 In other words, these are *"innovative integrative solutions with assembly of the modules elevated from the ground, also involving the rotation of the modules themselves, in any case in such a way as not to compromise the continuity of agricultural and pastoral cultivation activities, also allowing the application of digital and precision agriculture tools"* described by the art. 65, paragraph 1-*quater* and 1-*quinquies*, of the legislative decree of 24 January 2012, n. 1, and subsequent amendments.

the belief that these systems are not subject to the environmental limits and constraints placed on photovoltaic systems.

Therefore, in view of the considerations made so far, the agrivoltaics system, although classified as such in harmony with national *guidelines*, must nevertheless be evaluated with reference to individual concrete circumstances, in which the existence of "real" agriculture must necessarily be ascertained which coexists with the energy system. A view to "mutual support" between energy and rural sectors.

5. The art. 20 of the Legislative Decree. n. 199 of 2021 establishes that the Ministry of the Environment and Energy Security in concert with the Minister of Culture and the Minister of Agricultural, Food and Forestry Policies, establishes by decree the principles and criteria for the identification of surfaces and areas suitable for the installation of systems to renewable sources which, accordingly, must be identified by law by the Regions³¹.

These are areas in which, subject to obtaining authorisation from the competent administrations, it is possible to install and build systems that produce renewable energy sources (so-called "FER" systems") in compliance with the limits established by the PNIEC.

As a priority, the ministerial decrees establish, in reference to suitable areas, "*the maximum portion of land that can be occupied by the aforementioned plants per unit of surface*". In fact, although the objective is to guarantee the maximum development of renewable sources envisaged by the *Integrated National Plan for Energy and Climate* (PNIEC), however, at the same time, it is essential to ensure the protection of the environment, cultural heritage and landscape of agricultural and forestry areas, such that the impact must be minimised.

In this sense, the risk that the production of energy from renewable sources leads to excessive land consumption and the compromising of the protection needs of assets must be avoided³². It seems appropriate to specify that each Region must identify suitable areas in compliance with the exploitation of their maximum potential and, at the same time, with the principles of minimizing impacts on the environment, territory, cultural heritage and landscape. However, regional legislation must always conform to state legislation without prejudice to the constitutional illegitimacy of the conflicting provisions.

31 The legislation provides that in the definition of the relevant discipline the suitable areas, the decree takes into account the protection needs of the cultural and landscape heritage, agricultural areas and forestry, air quality and water bodies, giving priority the use of surfaces of built structures, such as warehouses industrial buildings and car parks, as well as areas for industrial use, craftsmanship, for services and logistics, and verifying the suitability of areas that cannot be used for other purposes, including surfaces agricultural products that cannot be used, compatibly with the characteristics and the availability of renewable resources and infrastructures network and electricity demand, as well as taking into account the location of demand, any network constraints and the development potential of the network itself.

32 The co. 8 of the same provision, identifies the areas suitable by law, including, for example, for photovoltaic systems even with ground-mounted modules, in the absence of cultural and landscape constraints, the areas classified as agricultural, enclosed in a perimeter whose points do not differ more than 500 meters from industrial, artisanal and commercial areas, as well as quarries and mines (letter c-ter, point 1). While, pursuant to article 65, paragraph 1-*quater*, of the legislative decree of 24 January 2012, n. 1, converted, with amendments, by law 24 March 2012, n. 27, agricultural areas classified as PDO and PGI are "suitable" areas only for the purposes of installing agrivoltaics system.

Photovoltaic systems, unlike agrivoltaics, which, as mentioned, combine electricity production and agricultural cultivation, produce exclusively electricity. The art. 12, co. 7, Legislative Decree no. 387/2003, establishes that photovoltaic systems (and not only agrivoltaics) can also be installed in agricultural areas, provided that there is no direct landscape constraint or, even in the absence of the latter, that local agri-food traditions, the biodiversity, landscape and cultural heritage³³.

On the other hand, areas suitable for the installation of photovoltaic systems include industrial areas, uncultivated agricultural land, abandoned areas and other areas already intended for non-agricultural uses³⁴.

It is also specified that the Administration's assessment must take into account the expected indicators and the specific characteristics of the project, with the aim of guaranteeing compliance with environmental standards and compatibility with the objectives of renewable energy production³⁵. At the same time, the obligation to connect other agricultural areas to photovoltaic systems on agricultural land is introduced, with the aim of balancing land use and preserving agricultural activities.

The "agrivoltaics" system therefore allows us to ensure the implementation of the ecological transition and the needs of the "green economy", to expand the installation of photovoltaic systems in agricultural areas, with the need to combat the depopulation of internal areas, the desertification, the abandonment of land and the consequent hydrogeological instability, allowing agricultural companies, otherwise out of business, to achieve the right profitability³⁶.

33 Similarly, in point 16.4 of the Ministerial Decree. 10 September 2010 it is specified that the authorisation of projects in particularly valuable agricultural areas requires a scrupulous evaluation, as an assessment of the non-existence of serious interference with the cultural heritage and rural landscape is essential. In this sense, with decision 5 December 2018-15 April 2019, n. 86, the Constitutional Court declared illegitimate the regional legislative provisions of Basilicata which, among other things, provided for measures for the installation of photovoltaic systems, as well as the identification of suitable and unsuitable areas, without preliminary investigation and adequate evaluation of the places in procedural venue. In the same ruling, the Court highlighted how the issue of the construction of energy plants from renewable sources was particularly impacted by EU legislation which required States to dictate certain, transparent and non-discriminatory rules in order to promote the use of energy from renewable sources, without prejudice to the need to carry out adequate assessments also with reference to the environmental impact.

34 One of the biggest challenges for Italy is, after, the internal transmission grid development will be the transport of renewable electricity from the South and the islands to the Northern consumption points. In this context, the plan provides clear network planning of transmission capacities until 2030.

35 In general on this matter see J B. EISEN, *Advanced Introduction to Law and Renewable Energy*, Cheltenham, 2021.

36 In this sense, as appropriately underlined, the planting and conservation interventions of native, herbaceous and herbaceous crops trees, are useful for counteracting the erosive effects and desertification processes, which can concern large agricultural areas, especially if in state of abandonment, as often happens in southern Europe. The adoption of these solutions allows you to influence the effects on hydrological balances and soil temperature (so-called "microclimate"), mitigating it appropriately and consequently reducing the water consumption necessary for the activity irrigates. The result is the possibility of achieving contextual advantages in terms of production of renewable energy, environmental protection, biodiversity conservation as well as to avoid the consumption of agricultural land, see E. GIARMANÀ, *L'impatto delle fonti rinnovabili in agricoltura: eco-agro-fotovoltaico e consumo del suolo*, in *AmbienteDiritto.it*, n. 3/2022, 4-5.

This particular type of system, capable of guaranteeing the continuity or even recovery of agricultural activity, still requires careful assessments regarding the impact that it can produce on the traditions of land use and agriculture³⁷.

While it seems clear that the allocation of ground-mounted photovoltaic systems in agricultural areas, in addition to determining an irrefutable consumption of land³⁸, especially for large areas, gives rise to significant problems of landscape compatibility and is detrimental to agriculture. In this sense, the choice of the Italian legislator to preclude this possibility must be welcomed with absolute favour, in the belief that the eco-digital transition³⁹ can be achieved without damaging the soil in such a significant and incisive way, in the now consolidated context of social, environmental and generational benefit⁴⁰ that renewable energy sources receive⁴¹.

European Green Deal is still innovative project aiming at making Europe “the world’s first climate-neutral continent” by 2050, a process managing a transition from a “multidimensional crisis” of the European integration process to “the establishment of a new societal order”⁴², but this can happen by enhancing territorial structure, protection of landscapes, cultures, food traditions, experimenting with innovative solutions that combine respecting ecosystems, biodiversity, and future generations.

6.1. The regulatory option for agrivoltaics versus intensive photovoltaics takes on an even more significant meaning in the Italian island regions, in particular Sicily and Sardinia, but also in the smaller islands, characterized by uncontaminated landscapes and a flourishing and specialised. Agriculture.

37 This determines a declination of the importance attributable to the interest in decarbonisation compared to other public interests and, more generally, to the balancing of public interests, taking into due consideration those with which it may find itself in conflict, see in this perspective again E. BRUTI LIBERATI, *Politiche di decarbonizzazione, costituzione economica europea e assetti di governance*, cit., 441.

38 About this issue see for all P. CARPENTIERI, *Il «consumo» del territorio e le sue limitazioni. La «rigenerazione urbana»*, in *federalismi.it*, 2020, 1 ss.; ID, *Paesaggio, ambiente e transizione ecologica*, in *giustiziainsieme.it*, 4 maggio 2021.

39 On the interconnection between energy dynamics and technological innovation, see G.D.COMPORTI, S. LUCATTINI (eds.), *Orizzonti del diritto dell’energia. Innovazione tecnologica, blockchain e fonti rinnovabili*, Napoli, 2020, 15 ss.

40 R.J. HEFFRON, *The Challenge for Energy Justice. Correcting Human Rights Abuses*, London, 2021, translated into Italian *L’energia attraverso il diritto*, (by L.M. PEPE), Napoli, 2021, 20.

41 For example, in the case of an agrivoltaic system in an abandoned agricultural area the shade generated by the photovoltaic panels would not only protect the plants during the hottest hours, but would also allow for more efficient water consumption. In fact, plants exposed directly to the sun require greater and more frequent use of water than plants in the shade of the panels, which, being less “stressed,” require a smaller amount of water. Finally, you can plan to use part of the financial resources made available by electricity production to grow clover or alfalfa on the underlying soil, which do not require irrigation, as natural water supplies are sufficient. Since they are nitrogen-fixing species, they do not need nitrogen fertilisers, while the symbiosis of the nitrogen supplied with microorganisms present in the roots makes the soil naturally fertilised: the ideal condition to host the most profitable crops, including organic ones. See for all ASPEN GLOBAL CHANGE INSTITUTE, *How “agrivoltaics” can provide more benefits than agriculture and solar photovoltaics separately*, in <https://www.agci.org>

42 Again E. CHITI, *Introduction to the Symposium: Managing the Ecological Transition of the European Union*, in *Riv. giur., amb.*, 2021, 1, 9 ss.

As is known, in Italy the principle of island cohesion has found an explicit constitutional reference⁴³.

As a result of the path begun with the presentation of a popular initiative constitutional bill⁴⁴, the integration of Art. 119 of the Constitution was achieved. After the fifth paragraph was thus introduced the provision under which the Republic "*recognizes the peculiarities of the Islands,*" "*promotes the necessary measures to remove the disadvantages arising from insularity.*"

This is a constitutional amendment that is relevant both for its genesis, in that it comes from the people's initiative, and for its content; in fact, it constitutes a constitutional novelty: "*which strengthens the equality of people in the democratic dimension because, in recognising the differences determined by geographical conditions, it promotes and uses all the normative instruments to hold the Republic together*"⁴⁵. It should be recalled that the aforementioned popular initiative constitutional bill provided that the state was required to recognize "*the serious and permanent natural disadvantage resulting from insularity*" and, consequently, to provide "*the necessary measures to guarantee effective equality and real enjoyment of individual and inalienable rights*".

While the text reformulated by the I Commission of the Senate, and approved in the last reading, established: 1) that it is the Republic, and therefore in all components not only the State, that is responsible for public intervention in favour of the Islands; 2) the recognition concerns, in positive terms, the "*peculiarities of the Islands*" (and not only the "*serious and permanent natural disadvantage resulting from insularity*"); 3) the reference to the purpose of effective equality and real enjoyment of individual and inalienable rights is eliminated⁴⁶.

43 On the principle of insular cohesion, please refer to my contribution *Ubi insula, ibi jus speciale*. The principle of insular cohesion tested by differentiated regionalism, in G. CORSO, M. IMMORDINO, G. VERDE, G. ARMAO (eds.), *Il regionalismo differenziato*. cit., 259 et seq. and The perspective of insularity in EU Law, in <https://www.federalismi.it>, 22/2023, 23 et seq. A complete review of the now substantial bibliography on the subject, both legal and economic, can be found on the website of the EURISPES Observatory on Insularity, see <https://eurispes.eu>, see also the Dossier of the Research Service on the recognition of disadvantages arising from insularity, <https://www.senato.it>.

44 The explanatory report to the bill, A.S. No. 865, recalled as the motivation for the regulatory intervention: the disadvantaged situation in which Italian citizens living on islands find themselves; the need for the national community to recognize this condition and ensure any necessary action to guarantee them equal opportunities and equal rights of citizenship. The provision consequently placed on the state the task of recognising the situation of disadvantage and providing the necessary measures. Although the explanatory report evokes the recognition of this situation by the "*national community*," the assignment of this task to the state appeared consistent with the latter's similar function of identifying additional resources and carrying out special interventions under Art. 119, fifth paragraph, of the Constitution.

45 Thus G. DEMURO, *Il principio di insularità ritorna in Costituzione: opportunità e vantaggi*, in lacostituzione.info, May 18, 2022.

46 The Chamber of Deputies, on July 28, 2022, finally approved the popular initiative constitutional bill with an absolute majority of its components (A.C. 3353-B - A.S. 865-B) on: Amend. to Art. 119 of the Constitution, concerning the recognition of the peculiarities of the Islands and the overcoming of the disadvantages resulting from insularity, which had already been approved, in first deliberation, by the Senate and the Chamber and in second deliberation, with an absolute majority of its components, by the Senate on April 27, 2022. The text was then published in the following day's "*G.U.R.I. Serie generale*," No. 176, p. 33: Text of a constitutional law approved in the second vote by an absolute majority, but less than two-thirds of the members of each Chamber, bearing: "*Modifica all'articolo 119 della Costituzione, concernente il riconoscimento delle peculiarità delle Isole e il superamento degli svantaggi derivanti dall'insularità.*"

The text of the constitutional law concerning the recognition of the peculiarities of the Islands and overcoming the disadvantages arising from insularity was published in the "Gazzetta Ufficiale" on July 29, 2022⁴⁷.

Failing to achieve a qualified majority in all votes⁴⁸ within three months from the date of publication, one-fifth of the members of a Chamber, or five hundred thousand voters, or five regional councils could have required request that a popular referendum be held pursuant to art. 138 Const.⁴⁹ After this deadline the constitutional law n. 2 of 2022 has entered into force⁵⁰.

As already noted, the novella determines the re-constitutionalisation of the "*principe of insularity*," in the perspective outlined by the aforementioned pronouncement of the Constitutional Court No. 6 of 2019, and it is also in light of this jurisprudential development on the condition of insularity, although it refers to the interpretation of a legislative provision (art. 27 of Law No. 42 of 2009, as amended), that the constitutional provision will have to be applied.

One element seems useful to emphasize on the effects of this constitutional norm, so concise, but also relevant for the legal arrangement of the islands and even more so for the refluences - to date not all identifiable - that it will deploy in the system both in propulsive and preclusive terms.

Certainly the issue of differentiated regionalism, referred to in art. 116, third paragraph of the Constitution, having concluded the crisis determined by Covid-19 seems to find new life, will have to be declined, because of the explicit reference made by the same as the provision provides: "*further forms and particular conditions of autonomy [...] may be attributed to other regions, by State law, on the initiative of the region concerned, after hearing the local authorities, in compliance with the principles referred to in Article 119.*" It outlines, in fact, a context in which due consideration must still be given to the peculiarities of the Islands and the need to over-

47 The constitutional bill was approved, in first deliberation, by the Senate on November 3, 2021 and transmitted to the House, which approved it, in first deliberation, without amendments, on March 30, 2022, the text was then approved in second deliberation by the Senate, by an absolute majority of its members, on April 27, 2022.

48 It seems appropriate to point out that the Assembly of the Senate of the Republic, in its session of April 27, 2022, unanimously approved in second deliberation, the text of the proposed constitutional law, however, the votes in favor were 207, more than the absolute majority, but less than the two-thirds majority (214) thus supplementing the provision of Art. 138 Const. right that constitutional revision laws and other constitutional laws should be approved in the second deliberation by an absolute majority and that these should be submitted to a popular referendum when, within three months of their approval, one-fifth of the members of a Chamber or five hundred thousand voters or five regional councils have applied for it. In such a case, the law submitted to referendum shall not be enacted unless it is approved by a majority of valid votes. However, a referendum shall not be held if the law has been approved in the second deliberation by each House by a two-thirds majority of its members.

49 See N. LUPO, *Una legislatura "a ranghi ridotti", ma (per ora)*, in *Oss. delle fonti*, 3/2022, pp. 7 ff., which recalls that not having reached the quorum of two thirds of the members of the Chamber, it was necessary to wait for the three months required by art. 138 Cost. so that, in the absence of referendum requests, the text adopted would become the Constitutional Law no. 2 of 7 November 2022, which entered into force on 30 November 2022 and "*last of the four "punctual" constitutional revisions approved in the last two years of the eighteenth legislature, with which we amended, with micro-interventions, articles of all three parts of which our constitutional charter is composed (Art. 9, 41, 56, 57, 58, 59 and 119 Cost.)*".

50 "Official Gazette" 15 November 2022, in *gazzettaufficiale.it*.

come the disadvantages arising from insularity now expressly referred to in the norm and from which the "*principle of insularity*" emerges as a "*constitutional right to island status*"⁵¹.

The clear reference to the Republic in all its components imposes a strong inter-institutional (or according to European law: multilevel) connection through integrated actions that start from the level of the identification of resources to cope with financial provision, the provision of infrastructure and services, but even before that from an exact quantification of the territorial, infrastructural and social gaps and the conditions that substantiate the "*peculiarity*" referred to in the norm.

Recognition of these peculiarities imposes their partition between peculiarities characterising a value, a history, a tradition, a culture, a landscape and as such to be safeguarded and protected and connotations that instead result in permanent disadvantages and gaps that must be progressively resolved through financial interventions (development taxation), infrastructural (energy, digital, ports and airports), but also social with regard to the weak segments of the population.

Some notations imposes, finally, the relationship between special autonomy and constitutional recognition of the condition of insularity. If this factor is among the original foundations of specialty - and it is not, as recalled, a peculiarity of the Italian system - it can be envisaged that the inclusion in the Constitution of the recalled provision reinforces and "*re-signifies*" this specialty rather than discolouring it. Norms providing for equalising and compensatory interventions are, as is well known, already present in the statutes of Sardinia (Art. 13) and Sicily (Art. 38) *ab origine*, and from the introduction of the integration of Art. 119 Const. will only be able to draw reinvigoration.

In terms of application, it should be noted that the first budget law adopted by the Italian Parliament has substantially failed to comply with the consequences resulting from the constitutional rule just entered in figures on the condition of insularity.

On the subject of the implementation of the constitutional principle of compensation for insularity the budget law of 2023 (l. n. 197 of 2022) provided the establishment of a "*National Fund for the contrast of disadvantages arising from insularity*" (art. 1, par. 806 and ff.) divided into two sections: "*Fund for Strategic Investments*" and "*Fund for Compensation for Disadvantages*"⁵². But these appropriations are much smaller than those allocated, and at full capacity, already last year when still the process for the approval of the amendment of art. This circumstance cannot but be considered singular, to say the least.

Both Italian island regions are intervening on state policies of strong incentives for renewable energy: in addition to the aforementioned provisions of Legislative Decree no. 199 of

51 T.E. FROSINI, *Il diritto costituzionale all'insularità*, in www.federalismi.it, 16 November 2022, pp. 1-14. Although there is no lack in the Italian doctrine of who, while noting the sure interest of the initiative, since it is the first time that a bill of popular initiative amends the Constitution, but also of a certain complexity, not without a certain ease, "*why do the Islands deserve special consideration compared to other equally disadvantaged territories?*", in this perspective G.L. CONTI, *Note minime sulla sopravvivenza dei valori costituzionali alla loro costituzionalizzazione*, in *Oss. delle fonti*, p. 195.

52 With the meagre budget of € 2 million for three years, to which are added those of the fund to ensure the system of air links to and from Sicily and Sardinia, with an endowment of 5 mil. € for the year 2023 and 15 mil. € from the year 2024 - truly incomparable resources with the 200 million allocated to the regime for Sicily and Sardinia in the previous budget law (l. n. 234 of 2021, art. 1, par. 544 and 546).

2021, internal implementation of RED II, albeit with the precautions on photovoltaics mentioned above, and of the decree of the *Ministry of the Environment and Energy Security*, 21 June 2024 "Regulations for the identification of surfaces and areas suitable for the installation of renewable energy systems".

6.2. In particular: the Autonomous Region of Sardinia has approved the regional law of 2 July 2024, n. 5⁵³ establishes a temporarily suspends (for 18 months) the installation in Sardinia of new plants for the production of energy from renewable sources. The regional government will now have to choose the suitable areas. The next step is the adoption of the regional energy plan to achieve, together with the renewables plan, two other objectives: the closure by 2030, as per the commitments with the EU, of the two coal-fired power plants in Porto Torres and Portovesme and the methane gasification of Sardinia⁵⁴.

In this regard, it should be emphasized that art. 3 of the regional law provides that pending the approval of the regional law identifying suitable areas pursuant to article 20, paragraph 4, of Legislative Decree 8 November 2021, no. 199, it is prohibited to build new plants for the production and storage of electricity from renewable sources, in homogeneous urban areas A, B, C, D, E, F, G and H, in wetlands and protected areas, in agricultural areas affected by quality production, in areas subject to hydrogeological instability or risk, in areas less than 7 km from cultural heritage or other production and/or storage plants built or in the authorisation phase (1500 meters for the smaller islands), in the areas pursuant to art.142 Legislative Decree 42/2004.

Similarly, the following are excluded from the ban: RES production and storage plants in H zones that do not involve land consumption, maintenance and revamping interventions, energy community plants, plants functional to public transport or integrated with public works, agri-photovoltaic plants with a maximum size of 10 MWp serving agricultural companies⁵⁵.

This law was challenged before the Constitutional Court by the central Government, highlighting its constitutional illegitimacy and its conflict with Treaty on the Functioning of the European Union (Art. 4, 49, 56 and 194), with the Charter of Fundamental Rights of the European Union (Art. 16) and with EU Directive 2018/2001 ("*RED Directive*", Art. 15, 16 b and 16 septies) which provides for the obligation for Member States to implement the principle of the prevalence of the interest in the construction and operation of renewable plants over competing interests until climate neutrality is achieved.

53 "*Urgent measures for the protection of the landscape and of landscape and environmental assets*". See <https://buras.regione.sardegna.it/custom/frontend/viewInsertion.xhtml?insertionId=6980e9f8-eb77-41b7-92c7-9090c2e307bb>

54 Today, in fact, the island is the only Italian region not to have a methane gas distribution network: 75 percent of total production comes from the two coal-fired power plants, the remaining 25 percent from hydroelectric and renewables.

55 Pursuant to art. 2 of the same legislation, the Regional Council must approve the bill for the establishment of the Regional Energy Agency, with powers in the field of energy production, transport and distribution, within 180 days.

6.3. The Sicilian Region, moves more in tune with the state government on the objectives of ecological transition and strengthening of renewables, has however adopted some decisive choices to protect the landscape and agricultural and cultivation traditions, while the draft provision that identifies the suitable areas at the regional level is being studied.

It should be emphasised that the Sicilian Region has, by virtue of its autonomous statute, exclusive legislative competence in matters of land management and expropriations. This allows for specific regulation of the procedures for the compulsory acquisition of private property, which, in this case, is permitted only for the creation of connections between renewable energy plants and the electricity grid. In particular, the Region considers it pre-eminent to acquire the titles demonstrating ownership of the land already in the EIA phase, which must also be considered consistent with the basic principles of the administrative procedure, given that, otherwise, serious procedural inefficiencies would occur as well as potential distortions of the reference legislation.

In general terms, it should be remembered that the overall regulatory framework that governs administrative action has for years been designed to ensure forms of administrative simplification also in order to achieve the objective of containing the times of the procedure⁵⁶. Also in environmental matters, the Legislator has intervened on several occasions on the EIA procedures, in the continuous search for a fair balance between an adequate level of environmental protection and acceleration of the procedures of works of significant public interest⁵⁷.

In the European legal system, the promotion of renewable sources is a central instrument of energy policy and of the policy for the reduction of greenhouse gas emissions, and has been the subject of specific directives that have imposed on Member States the obligation to remove any obstacle to the production of electricity from renewable sources, reducing to a minimum the related costs and obligations for private individuals⁵⁸.

In accordance with what has been outlined so far, it must be considered that the hermeneutic solution does not constitute any illegitimate procedural burden, but ends up being consistent with the principles of administrative action of efficiency, speed and streamlining. It follows that the private individual must attach to his/her application every useful element to allow the adoption of the requested measure from the start⁵⁹.

56 This principle now represents a guiding criterion of administrative activity, requiring the administration to eliminate any unnecessary phase in order to guarantee the speed of adoption of the expressed provision and is closely linked to the principle of non-aggravation of the procedure.

57 It is evidently from this perspective that the provisions that have been introduced regarding the terms for the conclusion of the procedure and those relating to the regulation of the so-called "c.d." must be read. PAUR with the clear aim of ensuring the compression of the various procedural phases and, therefore, ultimately of the adoption of the final provision (see, among the many interventions, the amendments made to Legislative Decree no. 152 of 2006, already extensively amended by Legislative Decree no. 104 of 2017, implementing Directive 2014/52/EU, by Legislative Decree no. 76 of 16 July 2020, converted into Law no. 120 of 2020, also inspired by the need to overcome infringement procedure no. 2019/2308, as well as, even more recently, by Legislative Decree no. 77 of 2021, converted into Law no. 108 of 2021).k

58 See, first of all, Directive 2001/77/EC, whose subsequent amendments were consolidated in the subsequent Directive 2009/28/EC, in force since 25 June 2009 and implemented in Italy by the aforementioned Legislative Decree no. 28/2011.

59 It is no coincidence that, even in the matter of significant silence, the jurisprudence constantly states that «the silent consent is not perfected by the sole fact of the useless passing of the peremptory term starting from the presentation of the application, it must be accompanied by the prescribed documentation indicated by the law»,

By borrowing the aforementioned principles in the specific authorisation context, they outline from art. 12 of Legislative Decree no. 387/2003 it must be considered that the completeness of the request must be assessed with reference to the final provision and must also be ascertained within the first phases that make up the procedure as a whole.

In this regard, admitting that the EIA - which by express regulatory provision is included in the procedure referred to in the aforementioned art. 12 - can be carried out without any verification of the actual legal ownership of the land therefore conflicts with the basic principles of efficiency, effectiveness and economy as it would require starting a procedure (and adopting the related provision) without having previously ascertained that the project submitted for verification is objectively feasible (as the owner owns the land on which the plant will be located)⁶⁰.

Likewise with what was established by the Supreme Administrative Court of Sicily, the issue must be resolved by considering that not only does the regional law not act as a burden to the procedure but, on the contrary, it determines a beneficial effect by avoiding that procedures that could not have been initiated and would have seen a final rejection, instead are initially discarded, avoiding both a duplication of the administrative activity and an increase in costs for the proponent.

In line with the proposed interpretation, interpreting the elements of admissibility as if they were separate elements of the two "unified" procedures is not only inconsistent with national legislation, as it is contrary to the principles of simplification of administrative action, but even in conflict with the principle of efficiency of the public administration. A different interpretation, such as that followed by the state administration, must, on the contrary, be considered in conflict with the principles of non-discrimination and equal treatment between companies that intend to operate in the same territory but only with projects that are distinct in terms of the power of the plants⁶¹.

with the further specification that «*The production of such documentation is indispensable precisely for the purpose of verifying the subjective and objective requirements, the incompleteness of which precludes the formation of the enabling title by silentium*» (in these terms, T.A.R. Puglia, III, 14 January 2016, no. 37).

60 By virtue of the proposed interpretative solution, it also appears more consistent with the principles of simplification and streamlining of the administrative procedure, as confirmed by decision, 5 October 2023, no. 647/2023 where the Administrative Justice Council for the Sicilian Region ruled that "*The regional law does not even affect the timing of the procedures to obtain the Single Authorisation: the prior availability of the land, on the contrary, cuts the long times that ordinarily characterise the expropriation procedures, in compliance with the principle rule established by the aforementioned art. 12 to protect the speed of the procedures.*"

61 It should be remembered, in fact, that art. 3 *quinquies* par. 2 of the Environmental Code provides that "*The regions and autonomous provinces of Trento and Bolzano may adopt more restrictive forms of legal protection of the environment, if particular situations in their territory so require, provided that this does not lead to arbitrary discrimination, including through unjustified procedural aggravations*". It follows, in line with the decisions of the Constitutional Court (see no. 218 of 20 October 2017) which intervened on the limits of the legislative powers of the Regions in environmental matters, reiterating that the regions cannot regulate *in peius* environmental, but can always introduce regulations improving the environmental system that are more restrictive from the point of view of the protection of the environmental framework. In this context, the size of the plant becomes in this sense an element for assessing when legal ownership of the assets must be possessed.

The actual ownership of the land subject to intervention, consequently, takes on specific importance from a substantial point of view within the scope of the environmental assessment itself⁶².

In light of the aforementioned environmental legislation and the important contributions of constitutional and administrative jurisprudence, the principle of environmental precaution and anthropogenic risk as an environmental element to be analysed in terms of balancing assumes pre-eminent importance, and this right from the stage of environmental assessments. weighting, which therefore cannot be deferred, is limited to the sole phase of issuing the authorisation provision. It follows that it must therefore be considered that the availability of the land cannot constitute a mere administrative data, required only for the purposes of admissibility, but, as highlighted in the report of the regional legislation, assumes direct relevance also from a substantial perspective in the environmental impact assessment⁶³.

It therefore appears consistent with the reconstruction carried out, and with the principles of landscape and territory protection, that the regional legislator has identified an anthropogenic risk of vulnerability of projects of this type, therefore having to consider legitimate the adoption of the more precautionary requirement that requires the demonstration of ownership of the land already at the time of the initiation of the EIA procedure.

Beyond what is provided by the state legislation on ground-mounted photovoltaics in agricultural areas, which as highlighted will preclude their implementation in the future, the orientations that emerge in the two insular regions, particularly in Sicily, and by virtue of the prerogatives that arise from the special regional autonomy, allow us to identify a trend in environmental assessments in favour of agrivoltaics.

62 It is worth remembering in this regard that in the matter of environmental impact assessment, the precautionary principle, now codified also by art. 301, par. 1, of the Environmental Code, takes on fundamental importance, establishing that “*In application of the precautionary principle referred to in Art. 174, paragraph 2, of the EC Treaty, in the event of dangers, even potential ones, for human health and the environment, a high level of protection must be ensured*”, and intervenes - at the same time - to regulate the types and methods of application of the preventive measures that can be adopted (see art. 304 et seq. Leg. Decree no. 152/2006). In the context outlined, it should be emphasised that art. 5, par. 1, letter c), of the Environmental Code, “*environmental impacts*” are such as they determine “*significant effects, direct and indirect, of a plan, program or project, on the following factors: population and human health; biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; territory, soil, water, air and climate; material assets, cultural heritage, landscape; interaction between the factors listed above*”, further specifying that “*Environmental impacts include the effects deriving from the vulnerability of the project to the risk of serious accidents or disasters affecting the project itself*”.

63 In the aforementioned Report it was, in fact, highlighted, on the one hand, that “*(...) with regard to the demonstration by the proponent of the legal availability of the land involved in the construction of the plant, the guidelines for the authorisation of plants powered by renewable sources adopted with Ministerial Decree 10 September 2010 of the Minister of Economic Development in agreement with the Minister of the Environment and the Minister of Cultural Heritage, for wind and hydroelectric plants, provide for the activation of expropriation procedures for the areas involved in both the construction of the plants and the related works, while for the other types of plant it allows them exclusively for the related works*”; on the other hand, that “*The current regulatory framework determines an excessive proliferation of wind farms in the territory of the Region, as it does not provide for the exhibition of the legal title of availability of the plant areas but allows, through the activation of expropriation procedures, to occupy any territory, compressing private property in an uncontrolled manner*”.

7. As correctly underlined, agrivoltaics, in its various design forms, constitutes an important part of the energy transition strategy, precisely because of its ability to compose and integrate the food-energy (and water) nexus, making them compatible with the protection of the landscape, biodiversity, ecosystems and human well-being.⁶⁴

The development of agrivoltaics, far from having achieved a clear landing, still appears to be entrusted to a generic and in some cases perplexed discipline. Administrative jurisprudence has offered an important contribution to consolidate the institution which, however, before acquiring a consolidated configuration, will have to receive regulatory contributions that are hoped to be convergent, which offer a defined regulatory framework.

In this perspective, agrivoltaic systems are identified as land co-use systems based on photovoltaic solar energy in which the spatial scheme of the modules, and therefore the distance between them and the density with respect to the unit of land considered, the height from the ground, determine a substantial recalibration in relation to the greater surface dedicated to agricultural or livestock production, to synergistically combine food and energy production on the same land⁶⁵.

Agrivoltaic systems, in other words, thus allow the simultaneous valorization of different forms of production: those linked to energy, but also those linked to the development of agriculture, to which are added profitability and, with the necessary requirements, landscape protection. An interdisciplinary challenge in which the culture of the territory, the cultivation traditions and agri-food production, livestock farming, pastoralism, beekeeping find their place. Characteristics that justify a peculiar and completely differentiated legal and financial regime, in terms of greater favor, to date entrusted to a discipline, to state and regional guidelines, to the albeit specific orientations of jurisprudence.

This is a totally innovative approach that sees photovoltaic solar systems not only as technical structures for energy production, often invasive as they overlap with the landscape, but spatial systems that can be designed and built precisely on the basis of quality objectives linked to the landscape. A purely technical issue thus becomes a transdisciplinary challenge in which the culture of the territory, cultural traditions and livestock farming, pastoralism, beekeeping and agri-food production find their place⁶⁶

64 C. TOLEDO; A. SCOGNAMIGLIO, *Agrivoltaic Systems Design and Assessment: A Critical Review, and a Descriptive Model towards a Sustainable Landscape Vision (Three-Dimensional Agrivoltaic Patterns)*. in *Sustainability* 2021, 13, 6871.

65 These are therefore integrated systems that combine in a balanced way electricity production from alternative sources and agricultural or livestock activities, in fact, they leave a significant surface area of land free for crops and/or livestock farming, allowing the use of the land both to produce photovoltaic solar energy through the installation of solar panels and to carry out cultivation and livestock farming activities, allowing the recovery, in some cases, of land that is now unproductive and abandoned to desertification and hydrogeological instability.

66 As M. GOLA punctually recalls, *Pubblica amministrazione e agricoltura sostenibile quando il diritto produzioni futuro*, in M. IMMORDINO, N. GULLO! C. CELONE (eds.), *Democrazia, diritti umani e sviluppo sostenibile. Quale sfida in Italia e Brasile?*, Napoli 2024, 533 et seq. spec. 539: “it must also be a primary interest of those who practice agriculture not to consume the soil but to safeguard it and keep it alive for the continuation of their own activity. This observation should in theory simplify the relationship between the Public Administration and those who work in agriculture, starting from a convergence of interests that leads to collaboration between the two parties, public and private, in a perspective of horizontal subsidiarity. A new perspective is therefore strengthened, in implementation of what is expressly established by the aforementioned art. 9 of the Constitution with reference to the Republic and therefore, implicitly, to all the subjects that

In this perspective, it can be said, in the wake of a broader conceptualization of the environment, that agrivoltaics in particular, can represent an emblematic case of "*emergence of the law of intergenerational relations imbued with solidarity*"⁶⁷.

constitute it according to the enumeration provided for in the subsequent art. 114 to be combined with the criterion for the attribution of functions set out in the subsequent art. 118”.

67 For this perspective see F. FRACCHIA *Transizioni: il punto di vista del diritto amministrativo*, Napoli, 2024, 49.