



Country-specific Policy Recommendations: Italy

The Challenge

Italy has the third biggest EU agricultural sector with an output value of €71.9 billion in 2023.¹ It has over 12 million hectares of Used Agricultural Land, over 900.000 farmers and at least 822 labels for regional products.² The livestock sector is a key segment of Italian agriculture, contributing to 28% of total EU farming output and to 21.7% of the number of farms.³

The country's agricultural sector faces challenges. At least 28% of the Italian territory shows signs of desertification due to rising temperatures and droughts linked to climate change. Most of this land is in the south of the country, where desertification leads to soil erosion and loss of soil fertility that put at risk food production and farmers' livelihoods.⁴ Regions in the north of Italy, meanwhile, have experienced irregular rain patterns and floods over the past years.

Another threat is the low and fluctuating prices of key products such as milk, cheese, beef and pork. Reasons for this vary, including the removal of milk production quotas and increased imports of meat products, which have contributed to low profitability across the sector. This in turn has created a lack of generational turnover in Italian farms, with the proportion of young farmers decreasing steadily. Price volatility also discourages farmers from making investments, thereby keeping productivity and incomes low.⁵

Renewable energy and sustainable farming practices can support farmers to tackle these environmental and economic challenges. For this, Italy needs the right policy measures and targeted investment.

Technological Level

Thermal management for livestock farms

Energy costs in Italy and the rest of Europe reached historic highs in late 2021 as the start of Russia's war on Ukraine approached.⁶ While they have come down since then, natural gas remains expensive and farmers are likely to struggle to cover their thermal needs over the coming years.⁷

¹ Eurostat, 2024. [Performance of the agricultural sector](#)

² Terranova Horizon 2020 project. [L'agricoltura Italiana in numeri](#)

³ European Federation of Animal Science, 2024 [Agriculture and Animal Farming in Italy](#)

⁴ ISPRA, 2022. [Press release on ISPRA study](#)

⁵ Presentation at RES4LIVE workshop by Marco Alberghini (Bologna, 2024). [La Transizione Energetica negli Allevamenti: Problematiche e Prospettive](#)

⁶ Trading Economics, 2024. [EU Natural Gas TTF](#)

⁷ Eurostat 2024. [Natural gas price statistics](#)



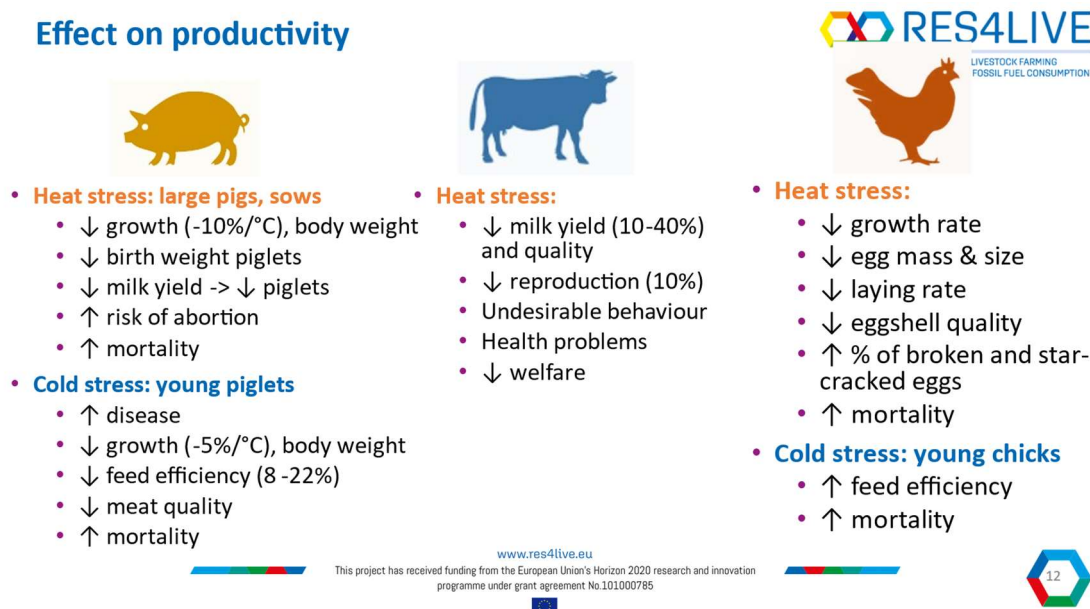


Inadequate thermal management in livestock farms decreases significantly both farming productivity and animal welfare (see graphic below). For fully grown pigs, cows and chickens, temperatures above 20°C are typically uncomfortable.

Two measures that can significantly reduce energy costs from heating and/or cooling for livestock farms are installing renewable energy in the farm and taking energy efficiency measures to improve the insulation and ventilation of barns. Some of the technologies that can enable farmers to be energy independent are photovoltaic (PV) installations, photovoltaic-thermal (PVT) systems, biogas plants, heat pumps and wood/pellet boilers. Recovering and co-digesting manure has the added advantage of significantly reducing methane emissions from livestock rearing.

Livestock rearing has considerable thermal requirements that need to be within specific temperature ranges to avoid heat stress and cold stress. It is important to provide targeted support for livestock farmers to invest in insulation and sustainable heating systems to protect farmer's livelihoods and animal welfare. Investment for livestock farms should be earmarked in the post-2027 Italian Common Agricultural Policy (CAP) Strategic Plan, the upcoming Social Climate Fund that will support SMEs from 2027, as well as other relevant national and regional investment funds.

Figure 1: Effect of thermal management on rearing of pigs, cows and chickens



Source: RES4LIVE [Workshop in Montichiari, Italy, 2022](#)



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Carbon farming

In addition to producing food and renewable energy, farming practices can also store organic carbon: using organic fertilizers, reducing tilling and planting deep-rooted crops can significantly increase the organic-rich topsoil layer. Livestock farming can make a sizeable contribution via carbon-rich manure, preferably after treating it in biogas plants. Adopting practices that improve carbon content in soil (so-called “carbon farming”⁸ – by which the stored quantities may be vast) can increase a field’s fertility and its water retention capacity, thereby directly countering the effects of desertification. In this context, agriculture experts at the RES4LIVE project workshop called for policies from the Italian government that reward farmers for storing carbon in their soil.⁹ To achieve this, it is necessary to define standardized methods to measure carbon content in soil over time, to fix carbon accumulation objectives and to link the latter to remuneration systems for farmers. The green architecture of the Common Agricultural Policy, in particular Eco-schemes, can support carbon farming.¹⁰

Combining remunerated carbon farming with the production of food and renewable energy (biogas) can create more environmentally and economically resilient farms. These holistic land-management systems are likely to attract a new generation of skilled young farmers.

Policy recommendations:

- *Provide targeted financial support for livestock farmers to invest in insulation and sustainable heating systems, including biogas, solid biomass, PVT systems and heat pumps.*
- *Energy investments for livestock can come from the post-2027 CAP, the Social Climate Fund starting in 2027, as well as national and regional investment funds.*
- *Create a legal framework to support “carbon farming” that includes standardized methods to measure carbon content in soil over time, defined carbon accumulation objectives and linked remuneration systems.*
- *Use the CAP to support carbon farming.*

Government level

Renewable energy tenders

In August 2024, the long-awaited decree for the “Incentivisation of renewable source plants that are innovative or have high generation costs and low environmental and territorial impact” ([FER II Decree](#)) came into force. The law sets out the rules and annual rates of feed-in tariffs between 2024 and 2028 for innovative renewable energy technologies. The decree gives significant support to biogas (233 €/MWh) and solid biomass plants (246 €/MWh) with small to moderate sizes with electric capacities up to 300 kW that would fit well in many Italian farms. Farms with available water surface could benefit

⁸ Food and Agriculture Organisation. [Global Soil Sequestration Potential \(GSOSeq\) Map](#)

⁹ RES4LIVE project [workshop](#) in Montechiari, 2022

¹⁰ EU CAP Network, 2022. [Policy Insights - CAP's Green Architecture components](#)





from tenders for floating photovoltaic installations on inland waters with 90 €/MWh for installations up to 1000 kW of electric capacity.

Two innovative technologies important for the farming sector that are missing and should be added to the FER II decree are agrivoltaics and PVT systems. We recommend making a limited review to add both technologies to the decree, ideally in time for the 2025 renewable energy call.

Figure 2: Reference tariffs and conventional useful life of plants in FER II

Fonte rinnovabile	Tipologia	Potenza	Vita utile convenzionale degli impianti	Tariffa
		kW	anni	€/MWh
Geotermica	Tradizionale con innovazioni	Tutte le potenze	25	100
	A emissioni nulle	Tutte le potenze	25	200
Eolica	<i>Off-shore</i>	Tutte le potenze	25	185
Fotovoltaica	<i>Off-shore floating</i>	Tutte le potenze	20	105
	<i>floating su acque interne</i>	$1 < P \leq 1000$	20	90
		$P > 1.000$	20	75
Biogas	utilizzanti sottoprodotti e prodotti di cui alla tabella 1	$1 < P \leq 300$	20	233
Biomasse	utilizzanti sottoprodotti e prodotti di cui alla tabella 2	$1 < P \leq 300$	20	246
		$300 < P \leq 1.000$	20	185
Energia mareomotrice, del moto ondoso e altre forme di energia marina		Tutte le potenze	20	180
Solare Termodinamico		$1 < P \leq 300$	25	300
		$300 < P \leq 5.000$	25	240
		$P > 5000$	25	200

Source: [Decree FER II, 2024](#)

Legislation on photovoltaics

In May 2024, the Italian government asserted the need to prioritize food production over other land uses, in the context of advancing land desertification by passing a [decree](#) introducing a “ban on the installation of new photovoltaic systems with modules placed on the ground and the increase in the extension of existing ones, in areas classified as agricultural”. The ban does not include farmland with agrivoltaics, as the land can maintain its agricultural use and because the technology increases shading from the panels that helps to keep humidity in the soil.





To avoid reducing the deployment pace of photovoltaics in Italian farms, we recommend that the government moves swiftly in 2025 and provides clear legal guidelines on how to deploy agrivoltaics and incentives to support this technology. We also advise that the government identifies suitable areas of non-agricultural land (i.e. areas not covered by the decree's ban) to build ground-mounted PV installations in line with [REPowerEU](#).

Policy recommendations:

- *Undertake a limited review of decree FER II to extend favourable support terms to agrivoltaics and photovoltaic-thermal systems.*
- *Government should prepare clear guidelines and rules on agrivoltaics in 2026.*
- *Government should identify and prioritize suitable non-agricultural areas to deploy ground-mounted PV.*

