

The Spanish horticultural sector is redefining its future through renewable energy

- Renewable energy is emerging as a key pillar for the Spanish horticultural sector amid growing geopolitical uncertainty



<https://ecomercioagrario.com/en/the-spanish-horticultural-sector-is-redefining-its-future-through-renewable-e...>

Julia Álvarez García

Lunes, 04 mayo 2026

If anything has become clear in the few months we've had so far this year, it is that if any sector was bound to benefit from relentless geopolitical shifts, it was renewable energy.

Energy —particularly in the Spanish horticultural sector— has gone from being an assumed cost to becoming a factor that directly determines profitability. In this scenario, renewable energy is no longer a long-term option but an immediate tool. Looking back at 2025, according to data from Red Eléctrica de España, more than 55% of the electricity generated came from renewable sources, driven largely by solar photovoltaics. Nearly 10 GW of new capacity were added that year alone, consolidating the role of this technology within the energy mix and extending its impact into rural areas.

The expansion of renewables has taken place largely in rural territories, where land availability and high solar radiation have turned the countryside into one of the main stages of the energy transition. And within this process, irrigated agriculture has become one of the largest energy consumers in farming —not so much out of innovation, but out of necessity.

How has the role of renewable energy evolved in the Spanish horticultural sector?

The growing volatility of energy prices, together with European regulatory demands on sustainability —such as the European Green Deal and the Farm to Fork Strategy— has accelerated the adoption of renewable solutions in horticultural operations. In this context, Spain has always held an advantage

thanks to its climatic conditions, placing the country in a strategic position to lead this transformation at the European level.

However, this process has a longer history than it may seem. The first steps in renewable energy development in Spain date back to the 1970s and 1980s, driven by rising environmental awareness and the need to find alternatives to fossil fuels. In horticulture, one of the earliest milestones took place in Almería, where in 1981 one of the first solar platforms linked to greenhouse production was installed.

Example of horticultural crops and agrivoltaics

Today, decades later, the scale of the phenomenon is entirely different. According to data from the Ministry of Agriculture, Fisheries and Food (MAPA), included in the report *“Extension and evolution of photovoltaic parks in Spain”*, the area occupied by photovoltaic installations reached around 50,000 hectares in 2023 –an accumulated growth of 166% since 2016– with projections under the PNIEC suggesting it could reach 114,000 hectares by 2030 if currently evaluated projects move forward.

The advance of photovoltaics and pressure on land. This development is not evenly distributed across the territory. Castilla-La Mancha and Extremadura concentrate nearly half of this surface – each with more than 11,000 hectares– consolidating themselves as the main hubs of photovoltaic deployment in Spain. In many cases, this growth takes place on agricultural land. In fact, between 2012 and 2022, more than 80% of new hectares allocated to solar installations came from dryland farming areas, followed by irrigated land and, to a lesser extent, forest or non-agricultural soils, according to the Ministry.

A context that has intensified the debate within the sector on how to integrate energy development with agricultural activity without creating territorial imbalances.

Not long ago, the SOS Rural platform launched a “pioneering macro-lawsuit” in Spain to halt what it described as the “disordered and speculative” spread of photovoltaic projects on farmland –a movement aimed at highlighting the tensions these infrastructures are generating in certain productive areas.

On the other hand, the energy sector downplays the impact on agricultural land and shifts the focus to the implementation model. Martín Behar Kölln, director of studies and environment at UNEF, argues that there is “a false myth about competition between photovoltaics and agriculture.” He explains that even if the 2030 targets were met, the occupied area would represent barely 0.5% of Spain’s usable agricultural land, leaving virtually all farmland available for agricultural use.

Agrivoltaics: the key to reconciling farming and energy?

At this point, shared land use is gaining prominence in the debate. Agrivoltaics, still in development, proposes a model in which agricultural production remains the main activity while energy generation acts as a complement. UNEF highlights that this approach enables a more balanced integration, where both activities do not compete but can become mutually beneficial. “The shade from the panels can reduce heat stress on crops, improve water efficiency and optimise farm performance,” Behar notes.

Beyond this idea, studies suggest that these systems can also improve growing conditions. The layout of the panels can act as a barrier against extreme events —high temperatures, hail or wind— while contributing to better water management and crop stability in increasingly variable climatic scenarios.

However, its application is not uniform, as the suitability of these systems depends largely on the type of crop and its solar radiation needs. In horticulture, where the balance between light and shade is particularly delicate, the design of the installations becomes a decisive factor to ensure that energy generation does not compromise production.

It is worth remembering that the development of these solutions is not recent, but the result of a long process that has consolidated over the past decades. The period between the mid-2000s and the following decade marked a turning point in the deployment of renewable energy, driven by regulatory frameworks and the sharp cost reduction of technologies such as photovoltaics, which became more than 80% cheaper in just a few years.

Today, this process has advanced to the point that it is difficult to understand the agri-food sector — and particularly horticulture— without the support of these technologies. UNEF stresses that photovoltaics has become a key tool not only to improve energy efficiency but also to mitigate the impact of climate change, which already causes losses exceeding €1 billion annually in the Spanish agricultural sector, according to the Agricultural Insurance System.

In this context, agrivoltaics is emerging as one of the main pathways to reconcile agricultural production with energy generation. “The ability to produce energy on the farm itself allows growers to reduce costs, gain independence from market volatility and move towards a more sustainable model,” UNEF highlights, in line with the objectives set by the European Union.

International geopolitics continues to set the pace

Following recent international events —from the war in Ukraine to tensions surrounding the closure of the Strait of Hormuz and disruptions in energy supply— the debate on renewables points to an imminent and necessary structural shift. According to the International Energy Agency, nearly 90% of new energy projects in 2024 were more competitive than those based on fossil fuels.

In Spain, however, despite being a key player in renewable integration, the country remains highly dependent on fossil fuels —especially in horticulture, due to its weight in the production system and its reliance on agricultural diesel. This fuel remains essential for water pumping and machinery use, exposing the sector directly to geopolitical instability.

The recently approved RDL 7/2026 includes price-containment measures to prevent increases and potential supply chain disruptions. However, these measures act only as temporary relief.

For this reason, the challenge is no longer limited to generating clean energy, but to advancing toward the real electrification of farms. Because in a context marked by international volatility, the competitiveness of the horticultural sector will depend not only on how much it produces, but on how it manages its energy.

Article available in ECA FRUITS Magazine, Issue 29.

Descargar Revista ECA FRUITS 29