

Cepsa and CSIC to research the planting of energy cover crops in rural areas to produce 2G biofuels

- **A study will determine the areas where crops that do not compete with food can be grown to supply the raw material needed to produce second-generation (2G) biofuels.**
- **Through these crops, Spain's depopulated areas could diversify their sources of income while improving soil quality and increasing rainwater retention capacity.**
- **These biofuels have up to 90% lower CO₂ emissions than traditional fuels and are key to the decarbonization of air, maritime and land transport.**

Cepsa and the Spanish National Research Council (CSIC) have signed an agreement to research the viability of planting energy cover crops in different rural areas across Spain. These crops are known as "cover crops" because they protect the soil from erosion between the main planting periods, and "energy crops" because they provide the organic matter needed to produce second-generation (2G) biofuels.

The objective of this collaboration, the first of its kind between the scientific institution and an energy company, is to conduct a technical and economic study of different parts of the country and determine where these crops could be planted. In addition to analyzing their viability, the study, which will last one year, will determine the most suitable types of crops for each area and their CO₂ absorption capacity, identifying the most beneficial in environmental terms.

This will complement Cepsa's sources of raw materials to produce this type of biofuels, one of the industry's main challenges, while also promoting Spain's greater autonomy in terms of energy supply and independence.

According to Javier Antúnez, Cepsa's Biofuels Manager: "The objective of this agreement with the CSIC is to expand the availability of circular raw materials for the production of second-generation biofuels. This will help to further the decarbonization of sectors where electrification is complex, such as heavy ground, maritime or air transport, while generating new economic and development opportunities for Spain's rural areas."

Leonardo Velasco, researcher at the CSIC's Institute for Sustainable Agriculture (IAS), said: "In Spain there is potential for growing non-food crops on land not used for food production, or at times of the year when the soil is not cultivated. Research groups from the CSIC have spent years studying new crops that can provide raw materials for the production of biofuels as part of the sustainable management of natural resources such as soil and water. In addition to providing renewable energy sources, these crops help protect the soil from erosion and improve the carbon balance on farms."

The CSIC's participation in this project is part of the organization's policy of transferring its research results to the private sector, the main way for public research to have a real impact on society. This initiative is led by the [Green Horizon Interdisciplinary Thematic Platform](#) and involves, from a multidisciplinary perspective, researchers from three CSIC centers: the Institute for Sustainable Agriculture (IAS), the National Institute of Agricultural and Food Research and Technology (INIA) and the Instituto de la Grasa (IG).

Opportunity for rural development

Cover crops are grown between the planting periods of main crops in order to protect the soil from erosion. They also offer other advantages for agriculture and environmental protection, such as increased soil fertility by providing nutrients and improving soil texture, higher rainwater retention capacity and greater CO₂ absorption. These crops can also be grown on degraded lands, such as those affected by fires, helping them to recover.

These crops are considered "energy crops" because part of the biomass produced can be used to generate energy, in addition to being used to produce livestock feed. As the harvested product is not needed for food, it can be used to produce second-generation biofuels.

Growing this crop type helps farmers to maximize the profitability of the same piece of land, increasing its quality, diversifying their income and maintaining their activity throughout the year. In addition to generating raw materials for second-generation biofuel production, planting this type of crop is an incentive for people to remain in Spain's depopulated rural areas, as it creates jobs and boosts economic development.

Introduced in 2023, the Common Agricultural Policy (CAP) rewards farmers and livestock farmers who carry out at least one voluntary sustainable practice, including the development of cover crops among woody crops, such as olive groves or fruit tree plantations.

2G biofuels to decarbonize transport

The use of biofuels can reduce CO₂ emissions by up to 90% compared to traditional fuels, making them a key element in enabling a fair energy transition and promoting the decarbonization of transportation, especially in sectors where electrification is complex, such as heavy road, air and maritime transportation.

This agreement is in line with Cepsa's goal of leading 2G biofuels manufacturing in Spain and Portugal by 2030. The company will then have an annual production capacity of 2.5 million tons of biofuels, of which 800,000 tons will be sustainable aviation fuel (SAF), enough sustainable jet fuel to fly over the planet 2,000 times.

As part of its 2030 Positive Motion strategy, the company is driving the development of an ecosystem focused on accelerating its own decarbonization and that of its customers, through the production of green molecules, mainly renewable hydrogen and 2G biofuels, to become a leader of the energy transition.

In its strategic plan, the company has established a roadmap to cut its emissions, which places itself among the most ambitious companies in its sector. Specifically, in 2030, it



will reduce its CO₂ emissions (scope 1 and 2) by 55% and its carbon intensity index by 15-20%, with the objective of achieving net zero emissions by 2050. Cepsa wants to go beyond net zero and have a positive impact, adding value in the communities where it operates by enabling its customers and other stakeholders to move forward in the right direction.

These objectives are related to the [basic research carried out at the CSIC](#), where several teams are working to further the energy transition towards a model based on renewable energies and less dependent on fossil fuels. Key lines of research include those exploring new methods to produce hydrogen from renewable energies (green hydrogen), to capture CO₂ emissions linked to industrial activity, to transform waste from the agricultural and forestry industries into biofuels, or to recover essential raw materials in the process of transport electrification.

The development and use of biofuels contributes to several of the 2030 Agenda's Sustainable Development Goals: Affordable and clean energy (SDG 7); Decent work and economic growth (SDG 8); Responsible production and consumption (SDG 12); and Climate action (SDG 13).

Cepsa is a leading international company committed to sustainable mobility and energy with a solid technical experience after more than 90 years of activity. The company also has a world-leading chemicals business with increasingly sustainable operations.

In 2022, Cepsa presented its new strategic plan for 2030, Positive Motion, which projects its ambition to be a leader in sustainable mobility, biofuels, and green hydrogen in Spain and Portugal, and to become a benchmark in the energy transition. The company places customers at the heart of its business and will work with them to help them advance their decarbonization objectives.

ESG criteria inspire all of Cepsa's actions as it advances toward its net positive objective. Over the course of this decade, it will reduce its Scope 1 and 2 CO₂ emissions by 55% and its carbon intensity index by 15-20%, with the goal of achieving net zero emissions by 2050.

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