

Electric communities to reduce electricity prices

A near future in Spain they are still an anecdote, but experts predict a rapid creation of small individual or neighborhood facilities for the generation and management of renewable energy. You save, you recover the investment in a maximum of seven years and you are independent of the large companies.

With the price of electricity at maximum in Spain, a country that now consumes twice as much energy as in the 1990s, the future bet of scientists is to create miles of small communities that generate their own electricity. An idea that is beginning to make its way into government offices, which will dedicate 100 million euros in grants over the next three years to try to tackle the problem. It also begins to be an option for citizens, unaware of the environmental cost of each kilowatt until it has started to appear on the bill.

"There are many ways to develop community energy, from informal cooperatives to associations that own the electricity system," explains Vanesa Castán, a researcher at the University of Sheffield and a member of the IPCC. "They use renewable technologies, such as solar panels, turbines or wind generators, and the beneficiaries have a high degree of control over the management of the service that allows them to save, because it provides all the energy for their houses. They can also create a small business that sells what they have left over to the national network".

With experience in the UK and Mozambique, Castán has tried to find partners in Spain. "It has been very difficult," she says. "I imagine a decentralized system in which everyone generates their own energy. Although it will be difficult to displace the Spanish model, things change fast. Electricity was discovered just over a century ago, and power grids were consolidated after World War II, with service liberalization beginning in the 1980s. These processes are faster than they seem".

Within less than a decade, Spain could produce 148,000 Gwh (gigawatts per hour) of this type of energy, if at least one electricity community were installed in each municipality (about 8,200), says Friends of the Earth in its report 'Community energy', "which is equivalent to almost 100% of the electricity demand of the domestic and tertiary sectors."

In effect, "with the area that exists to install renewable systems, the entire residential demand could be covered, which is 30% of the total," says Tomás Gómez, director of the Research Institute in Energy Engineering at the Polytechnic University of Valencia. In fact, "there is three times more renewable energy generation than demand. We have more than 100 Mwh (megawatts per hour) installed and we consume about 40. The reduction in emissions would be equivalent to 17 million tons of CO₂, calculates Friends of the Earth, as if more than seven million cars circled the planet.

Savings and subsidy

Where electric power communities function they fulfil a dual role: saving consumers money and reducing CO₂ emissions. For example, in Great Britain there are 424 energy communities with an installed capacity of 319 Mwh of renewable electricity, and it is estimated that its 358,000 beneficiaries saved 3.4 million euros on their bills in 2020. About ten euros less on the bill of electricity per year per family, similar to the increase experienced in Spain in the last two months.

Although in Spain the creation of electricity communities is at a minimum, with a few specific self-consumption facilities in rural areas -heating in warehouses or agricultural irrigation-, it is expected that there will be a boost with money from the 'Recovery, Transformation and Resilience Plan' « for local energy communities, with the aim of democratizing the energy system », respond from the Institute for Energy Diversification and Saving (IDAE), attached to the Ministry for Ecological Transition. The "new help lines" of 100 million euros, they say, will come out "soon."

The Vice President of Ecological Transition Teresa Ribera endorsed this past Thursday her support for energy communities. This "collective adventure" has the advantages "of producing local energy, managed by people who know their territory and can find a balance between the environment and the economy," said Ribera, who envisions a network of 500,000 rooftops in the short term, in "each of the towns, communities and industrial estates", which "reduce consumption and increase user comfort." The minister announced that she will reserve almost 10% for these associations in the energy auctions.

However, "for most people, accessing grants is super difficult," says Castán. "The way the energy system is developing is very opaque. The giant companies have created an impossible to navigate legal map, which is coupled with a lack of skills from users, whose relationship with energy is just flipping a switch.

The possible investment in the next five years is immense. For the "just and inclusive energy transition", 9.2% of the 69,500 million euros of European funds will be allocated, indicates the 'Recovery Plan'. "We'll see which companies take the 'next generation' funds," says sceptical Eugenio García-Calderón, founder of Light Humanity, a private initiative for self-consumption.

1,500 euros plus batteries

The creation of Spanish energy communities faces "two major problems: costs and administrative management," Gómez analyzes. The first is beginning to be resolved because, on the one hand, the prices of the components fall. "The investment is variable. On average, per family of four with a normal life would be around 1,500 euros, although it depends on the power of the plant," Gómez calculates. "If you want to not depend on the electricity grid, you have to buy batteries to store energy, which represents another 3,000 euros. However, with electricity prices around 70 euros per Mwh, the investment is recovered in about seven years. With the current prices, it would take half".

The management of energy communities constitutes the second obstacle to their development in Spain. The great wall comes when it is intended to sell electricity to the grid. "The regulations in Spain have existed for a short time, but they are confusing and the small details are not tied up," says Alejandro Díaz, general director of the Vagalume group, responsible for a 700 kwh energy community in the Novo Milladoiro industrial estate (Galicia).

In these eleven industrial buildings, Vagalume began the photovoltaic installation at the end of 2020. "But what do we do with the surplus?" Díaz wonders. "To sell it we depend on a marketer and a distributor. As there is a tremendous oligopoly, they pose a lot of problems. We have been trying for twelve months to legalize the facilities as collective self-consumption to move surpluses between one user and another. In theory, it can be done legally. But it is a fantasy. They are not interested in people joining together to pay less.

At present "the support of public institutions is uncoordinated and scarce," says García-Calderón. «The history of Spanish self-consumption is a delusion. First, he got on the world's winning horse in photovoltaic installation and technology development, but then the Government retroactively

removed its support and, to top it off, in 2015 it removed the 'sun tax', a toll on photovoltaic panels. It has been a ten-year break. There are still people who think it is illegal.

"In Spain, energy communities go slowly, but they are going to jump and go very fast, due to three factors: high energy prices, cheap renewable generation and public awareness," continues Gómez. «It has already happened in Germany and Denmark. It could also happen that there is a reaction from the market, which lowers prices to stop their expansion and maintain dominance.