



**ACCESS**

Achieving Circularity in Cities through  
Environmental Sustainability of Sports

# ENERGY COMMUNITIES

Hey neighbour, got some energy?



Energy communities aim to achieve several goals related to sustainable energy transition and environmental impact reduction. Energy communities can align with local or regional strategies and plans for sustainable development, energy transition, and climate action. Measurable targets within energy communities can include carbon emissions reduction, amount of energy shared, grid independence. These measurable targets provide a way to track the impact and success of the energy community initiatives over time.

## GENERAL DESCRIPTION OF THE PRACTICE

FC Porto selected Greenvolt Communities for the creation of an innovative project in terms of sports clubs, which combines the creation of two integrated Energy Communities with an electric vehicle charging solution, contributing significantly to the energy transition objectives of the Club and the Cities of Porto and Vila Nova de Gaia.

- "Estádio do Dragão Community"

More than 1000 photovoltaic solar panels will be installed in an area of about 7,200 m<sup>2</sup>. These panels will have a total capacity of more than 568 kW, being able to generate 778 MWh/year and reduce 206 tonne CO<sub>2</sub>/year, the equivalent of planting 9.141 trees.

In the first phase, this will be an "intra community", in that everything produced is shared among the producers and consumers of the club itself, thus highlighting the involvement of the various points / facilities of the club, which reinforces once again the values of "community" previously described.

In a second phase, Greenvolt Communities will bring more producers and consumers into the Community, allowing them to share clean and cheaper energy with the Club and its neighbours. FC Porto can aim to reach 100% local renewable energy in the next 5 years.

This Community also reconciles the electric mobility solution with 22 chargers, which makes the project even more special given its innovation. With the possibility of charging electric vehicles on the company's premises, it will allow the decarbonisation of the fleet through the Community's solar energy.

- FC Porto Olival Training Centre Community

The initial Producer Member of this Community is the FC Porto Olival Training Centre, which will also be a consumer and will share the surplus with the families and companies that are in the vicinity of the Centre.

More than 1000 photovoltaic solar panels will be installed in an area of about 7,200 m<sup>2</sup>. These panels will have a total capacity of more than 600 kW, being able to generate 802 MWh/year and reduce 213 tonnes CO<sub>2</sub>/year, the equivalent of planting 9.426 trees.

From the beginning, this Community will generate surplus, which will be shared with about 580 families in Vila Nova de Gaia. This sharing will help these families to reduce their electricity bill, creating a better quality of life for the inhabitants of this city.

In a second phase, Greenvolt Communities will gather more producers and consumers for the Community, allowing to share clean and cheaper energy with the Club and its neighbours. FC Porto can aim to reach 100% local renewable energy in the next 5 years. It should be noted that all CAPEX investment was on Greenvolt's side, which allows FC Porto to focus their own financial resources in the core business.



## CHALLENGE

The motivation behind the emergence of energy communities stems from a confluence of factors: growing concerns about climate change, the desire for energy security, and a shift towards more participatory and decentralized approaches to energy production and consumption. The inspiration comes from a vision of a more sustainable and locally controlled energy system, coupled with the recognition of the limitations of traditional centralized energy models.

The practice typically addresses both internal challenges, such as achieving local energy goals, and broader needs within the wider community. By providing cleaner energy options, economic benefits, and participatory decision-making, energy communities contribute to the overall well-being of the community while aligning with broader sustainability targets.

## RESULTS

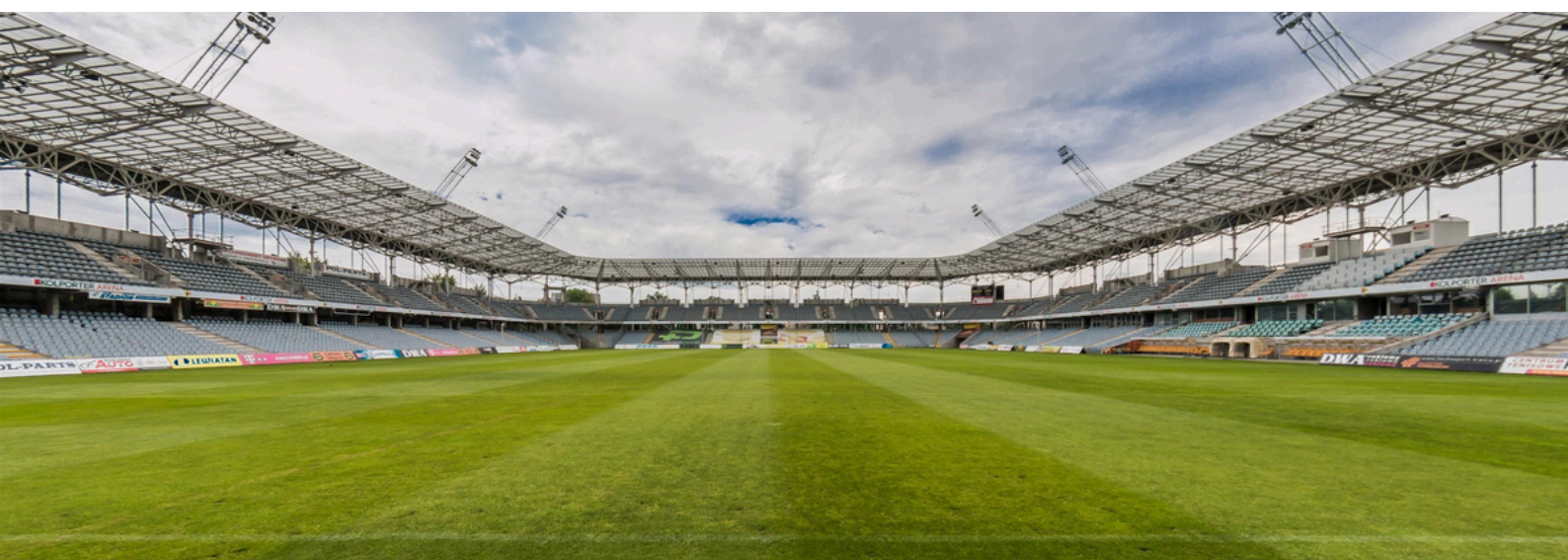
The following table shows the results:

|                                    | "FC Porto Olival<br>Training Centre<br>Community" | "Estádio do Dragão<br>Community" | Total |
|------------------------------------|---------------------------------------------------|----------------------------------|-------|
| Panels installed                   | 1101                                              | 1043                             | 2144  |
| Area (m²)                          | 5405                                              | 7200                             | 12605 |
| Total production (kWp)             | 600                                               | 568                              | 1168  |
| Estimated annual production (MWh)  | 802                                               | 778                              | 1580  |
| Emission reduction (tonCO2)        | 213                                               | 206                              | 419   |
| Grid independence                  | 47%                                               | 14%                              | 18%   |
| Energy shared with community (kWh) | 578                                               | 0                                | 578   |

## REPLICABILITY POTENTIAL

Certainly, this approach is promising to be replicated among different clubs or entities, provided that there is a suitable space with favourable solar orientation on their premises, and that proximity to any building, no matter the usage, that can use the excess energy is ensured.

However, it is essential to recognise that the legislative context of each country can impact on the implementation of community energy projects. Hiring an expert may prove critical to navigating the complexities of licensing.





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## This factsheet is a part of a larger collection of good practices available on the project's website

[www.access-cc.eu](http://www.access-cc.eu)

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The **ACCESS project** is one of the latest European projects which explores and challenges environmental sustainability and environmental management in sports. Co-funded by the European Union's Erasmus+ programme, ACCESS is looking at narrowing the gaps between the current environmental performances of sport organisations, their strategies, and practices on one side and strategies and targets of their respective cities or regions with the overall objective – making these sport organisations a reference point for sustainability in sports in their countries and turning them into replicators of solutions for achieving it.



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