



An European urban transition project towards more sustainable cities through innovative solutions, in the fields of mobility, energy and digital.

Smart City

Global project

Coordination: Cartif
European grant: 18 M€
30 partners, 6 countries
Period: Dec.2016 - Nov.2021
Demonstrators: Nantes, Hamburg, Helsinki

@mysmartlife_EU
<https://mysmartlife.eu/>

Nantes demonstrator site

Coordination: Nantes Métropole
European grant: 4,5 M€
10 partners

Coordinator:
benoit.cuvelier@nantesmetropole.fr

metropole.nantes.fr/mysmartlife

Energy



Action leader
ENGIE

Contact
natachat.javalet@engie.com

ACTION OVERVIEW



Organic solar power plant

This action has been implemented by ENGIE in March 2020, in collaboration with Nantes Métropole, the Cité des Congrès and the company ARMOR. A deliverable (D2.7) has been written and described in detail this action and is available at: <https://mysmartlife.eu/publications-media/public-deliverables/>

► OBJECTIVES

- › To allow experimentation of new innovative technologies developed in Nantes Métropole area, and related to the energy transition
- › To speed up the development of RES on Nantes Métropole territory

► IMPLEMENTATION



CHALLENGE

Nantes Métropole roadmap for energy transition sets 33 commitments, including No.11 aiming at reaching 50% of local renewable energy by 2050.

Photovoltaics is developing in the Métropole area, in particular on the roofs of buildings. However, the implementation of solar plants on roofs may face structural issues: the existing buildings are not built to support the solar panels weight, and the extra costs of structural works often hinder the development of such projects. On the other hand, it could be interesting to integrate photovoltaics into other surfaces and street furniture.

SOLUTIONS

A solar demonstrator made of organic photovoltaic films has been implemented by Engie at the Cité des Congrès in Nantes.

The photovoltaic films are light, which allows answering to the structural and weight issues. They are also flexible and semi-transparent, thus they can be installed on any kind of materials and support, and in any orientation. Their environmental impact is quite low, thanks to an energy-efficient manufacturing process, and their composition based on organic polymers.

The films were glued on the solar awnings fixed on the mezzanine windows of the Cité des Congrès. The energy production is stored on a 1000Wh-battery which alternately powers a video totem pole for recharging phones and a rechargeable battery for temporary lighting.

The Nantes-based company ARMOR and its photovoltaic films ASCA have been chosen for the implementation of this action.

MONITORING

The energy production of the photovoltaic demonstrator will be followed during the monitoring period of the mySMARTLife project. The films have been installed according to different exposures to the sun to be able to assess their behavior with these exposures. This facility will also make it possible to verify the durability of the films over time. The Key Performance Indicator (KPI) is the electrical production of the films. This indicator will be aggregated with those of all the actions of the Nantes-based mySMARTLife demonstrator to give a consolidated result of the overall impact of the project.

This evaluation period is essential to assess the impact of the action, and its replicability opportunity.

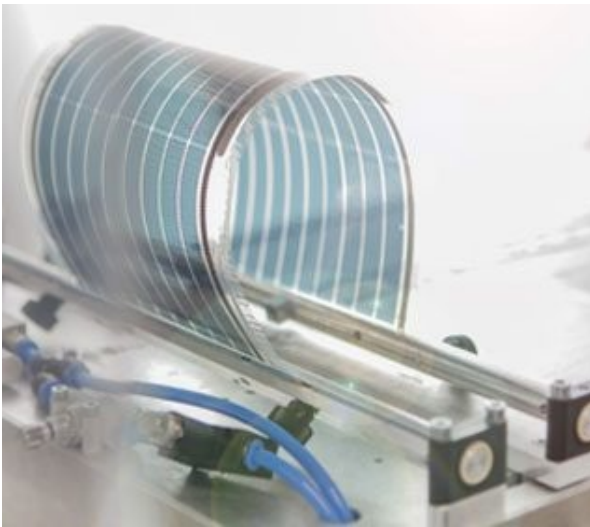
► BENEFITS

Environmental

- › Development of RES
- › Full-scale test of a new technology of renewable energy production
- › Raising public awareness of the Cité des Congrès on renewable energies.

Economic

- › Experimentation of new local technology, to be able to deploy it more widely afterward.



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2 cours du Champ-de-Mars
Nantes 44 923 CEDEX 09
Tél. : 02 40 99 48 48

metropole.nantes.fr