



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

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<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](http://metropole.nantes.fr/mysmartlife)

## Digital



Action leader  
**Nantes Métropole**

Contact  
**guillaume.chanson@nantesmetropole.fr**

## ACTION OVERVIEW



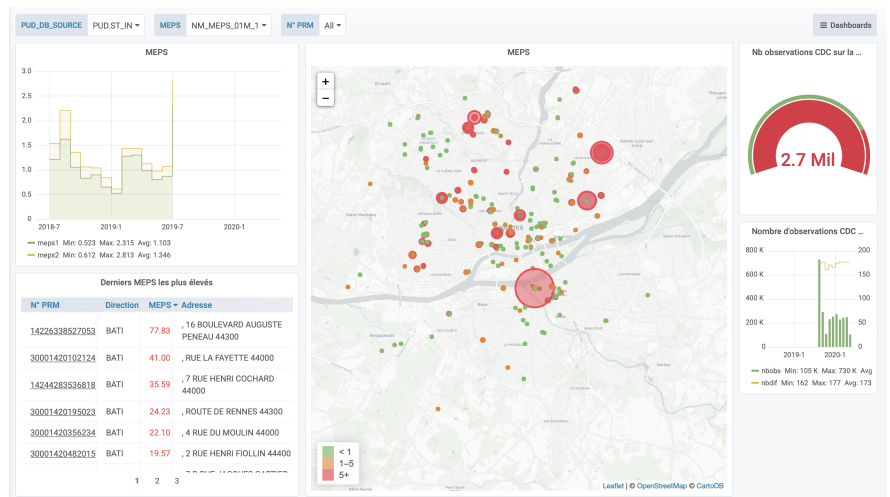
# Electricity contracts optimisation

This experimentation was carried out internally in Nantes Metropole, as part of the Energy Datalab, and of the search for use cases of Nantes Metropole's Urban Data Platform. More complete information can be found in reports D2.11 and D2.8: <https://mysmartlife.eu/publications-media/public-deliverables/>.

## ► OBJECTIVES

- To experiment with a new use of data from the electrical load curves of public buildings.
- To adjust electricity contracts to actual consumption
- To achieve financial savings

## ► IMPLEMENTATION



## CHALLENGE / CONTEXT

Thanks to the deployment of smart electricity meters in metropolitan France, Nantes Metropole can access the electrical load curves of public facilities (public buildings, public lighting, etc.). Nantes Metropole manages several thousand electricity contracts for its equipment, whose consumption changes over time, making it difficult to regularly monitor all of these contracts. An automatic comparison of electricity contracts with actual consumption would simplify this task, which could ultimately lead to financial savings.

## SOLUTIONS

The Urban Data Platform developed (see the corresponding action overview) as part of the project collects, via the Energy DataLab (see action sheet), the load curves of nearly 300 public facilities in Nantes Metropole. The solution consists of:

- 1) using these load curves to determine the electricity consumption profiles of 300 public facilities
- 2) compare, in an automated way, electricity contracts with load curves to identify those with the greatest margins for optimisation

An algorithm to detect sub-optimisations was developed with the departments of public lighting and public buildings. It is based on the average deviation to subscribed power, a formula adapted to identify non-optimized electricity contracts by giving an indicator of the level at which consumption is under- or over-estimated.

Depending on the case:

- › The actual electricity consumption of the equipment is lower than the subscribed power, and consequently the subscribed contract costs more than necessary. An indication of potential tariff optimisation is provided.
- › The actual electricity consumption is higher than the subscribed power, which must necessarily lead to a modification of the contract for contractual and/or security reasons.

## MONITORING

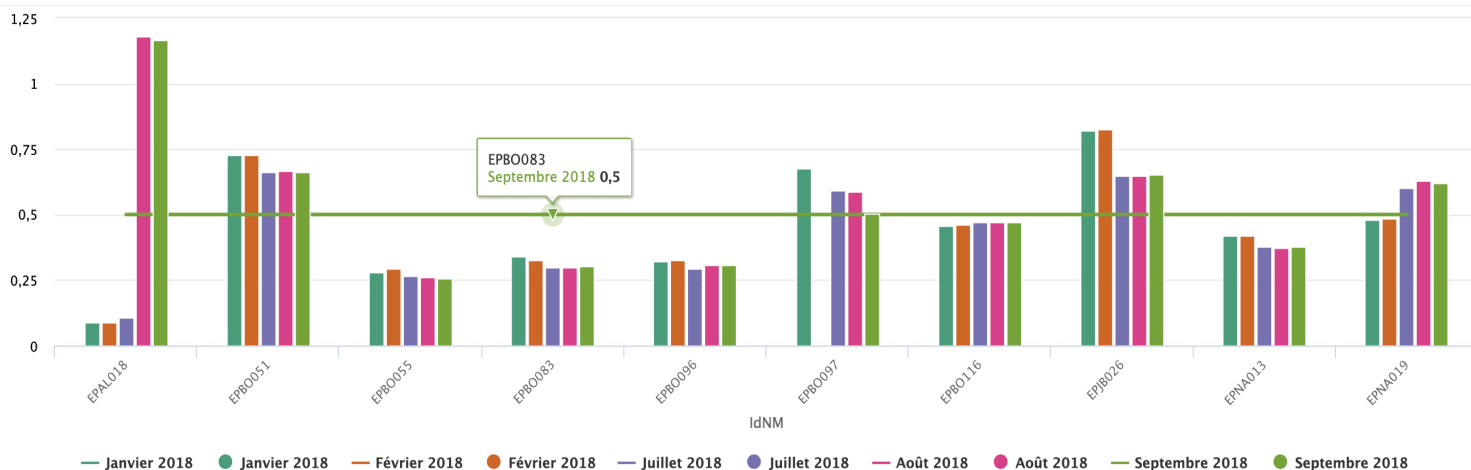
This experimental action is monitored at two levels:

- › Relevance and use of the prototyped service: are the parameterised thresholds adequate to the operational realities? Is the shared approach for the two departments relevant? Does the service integrate well into the business processes, and do the users take ownership of it, or does it remain a prototype that is struggling to find its place? All these questions will be followed up during the course of the experimentation with an assessment to conclude and decide on the continuation of this experimentation.
- › The functioning of the process of experimenting with new services based on the data available in the Urban Data Platform: in connection with the previous point, but more generally, the capacity of this process to meet the concrete needs of the public services must be studied in order to contribute to the improvement of the data experimentation process and to evaluate its effectiveness.

## ▶ BENEFITS

This experimentation

- › allows to make savings by adjusting our electricity contracts to actual consumption.
- › contributes to building the Urban Data Platform (see the corresponding action overview) based on real needs.
- › contributes to acculturation, to developing a data oriented approach, and with an internal (or external) valuation method.



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

metropole.nantes.fr