

## Intelligent Lighting @ Wavre (Belgium)

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**Year of commitment** : 2016

**CO2 Impact** : 82% electricity savings

**Green energies** : Electricity

**Digital services** : Other, Cloud data solutions, Mobility, Comfort, Safety

**Sustainable mobility** : Pedestrian Mobility, Urban roads, Bicycle path, Parking, Urban furniture, Smart park



227 000 €

**Builder**

SmartNodes

**Manager / Dealer**

Wavre Energies Network

### GENERAL INFORMATION

The Wavre 2030 project is underway. In this context, the Smart LED Lighting was installed in the residential area of 400 houses (4 km of road and 27 closed at 50 ° 42'45.6 "N 4 ° 33'30.0" E). This system adapts public lighting dynamically or "on demand", that is to say only in the presence of road users, whether pedestrian, bicycle or Of a car.

The Smart LED Lighting contains 282 management modules that analyze the data received from the various sensors and exploit the results in real time.

Initially, the project is part of the EU's climate targets for 2020, which aim to reduce energy consumption, CO2 emissions and light pollution.

Thanks to the adaptation of the intensity of light to the type of user and the distance of illumination according to its speed, visual comfort and safety gain in quality

with the key, environment. While preserving the need for lighting in urban areas, respect for nightlife and biodiversity adds real value to dynamic lighting management.

Sensor systems and embedded communication tools make this system a fully-fledged ICT device. The analysis of the recorded data (such as traffic counting) and the related services that are exploited, make the Smart LED Lighting a unique and innovative project in Belgium.

There are no other such installations on this scale in Belgium combining all these elements.

## Progress Status

Delivered

## Data Reliability

Self-declared

## Funding Type

Public

## Infrastructure Video

Browser not compatible Browser not compatible

## Website Enterprise / Infrastructure

<http://www.smartnodes.be>

## Sustainable Development

### Attractiveness :

The project is part of a futuristic vision of a smart city based on its public lighting network widely deployed on its territory. By combining dynamic management of this lighting with the needs of users with the use of the lighting network to convey a certain amount of information, the project is linked to the various "Smart Cities" themes:

- Economy: energy performance of the solution without sacrificing to the comfort and safety of the users but also the whole of this infrastructure contributes to the collection and sharing of data necessary to the piloting of the city. The solution makes it possible to adapt resources as close to needs as possible and thus to better control budgets;
- Environment: reduction of CO2 emissions and reduction of light pollution;
- Mobility: better traffic management thanks to traffic statistics collected, preventive signaling according to traffic and faster intervention if necessary;
- Governance: resource management and use of information and communication technologies (ICT);
- Human capital: an interactive user and mobile relationship without sacrificing visual comfort and safety;
- Housing: a better match between the need for lighting in urban areas and respect for a nightlife of biodiversity but also the need for harmony and aesthetics of lighting in the urban landscape.

### Well Being :

The City of Wavre project meets these objectives in every respect:

- Basically, one would like to have to light the roads only when a user is present, and otherwise extinguish - or at least maintain an extremely low level. This is why the SmartNodes technology (Smart Lighting System) is innovative. By creating bubbles of light that accompany users of public space, the technology solves many problems inherent in static lighting. As lighting stays at the minimum level by default, energy consumption is greatly reduced (up to 80%) and maintenance costs (around 30%). Unlike other solutions, this result is not achieved by reducing the comfort and safety of users of the public space. They will always receive adequate lighting regardless of the time and place where they are.
- Light pollution is also significantly reduced, thereby minimizing the impact of lighting on the plant and animal biotope and should delight the many amateur astronomers.
- Finally, the wireless communication between the control modules and the on-board intelligence in each module will allow the development of a series of services relating to traffic, signaling, maintenance, etc.

### Social Cohesion :

The participatory nature of the project is envisaged after the phase of renovation of the lighting in the residential area of the Village Expo, the Windsor subdivision and the Coulant d'Eau lane:

- The technology is configurable (level and duration of illumination, etc.). Citizens' markets and round tables will be proposed to evaluate, validate or modify these parameters. It will be essential to federate the population of these neighborhoods or street to this new type of intelligent lighting.
- The technology is scalable. An exchange of views could also be proposed to a group of inhabitants to explain the new services related to intelligent lighting, their uses and interests for the community but also for the inhabitants themselves.

In short, a participatory project, not a concept, but a concrete and experimental realization. Demonstrations of any new intelligent and interconnected lighting technology are needed to explicitly demonstrate the potential benefits that the City of Wavre will derive from being part of the smart city concept.

### Preservation / Environmental Improvement :

The project of the City of Wavre was also inspired by the objectives of the European Commission described in its report of June 2013 "Enlighten cities: accelerating the deployment of innovative lighting in European cities"

- This report takes up the ambitious objective of increasing energy efficiency by 20% by 2020.

- In addition to the use of light-emitting diode (LED) lighting, it advocates the deployment of innovative solutions that are interconnected with other urban networks and that adapt dynamically:
- The report also discusses the influence of lighting on health and well-being, and the risks that blind exploitation of light causes to our biological rhythms, both at the individual scale of ecosystems. Conventional lighting generates a light pollution of our environment that some scientists have described as genocidal of our ecosystems and disturbing the discovery of starry skies. It is recommended to work to "reconcile the shadow with the light" to mitigate these negative impacts

#### Responsible use of resources :

Decreased energy consumption

## Testimony / Feedback

Browser not compatible

## Governance

City of Wavre

**Holder Type :** Local Authority

SmartNodes

**Builder Type :** Other

Wavre Energies Network

**Manager / Dealer Type :** Public

## Sustainable Solutions

Smart Lighting System

#### Description :

SmartNodes offers a new way to illuminate public spaces: "*Light where and when needed*". Unlike continuous lighting or even reduced lighting during off-peak hours (which therefore operates permanently and independently of traffic), SmartNodes is innovative in offering "on demand" lighting. That is to say only in the presence of road users.



The proposed technology is innovative at different levels and overcomes many limitations of competing solutions. By offering a decentralized solution and an autonomous decision by luminaire, the energy savings are maximum and can reach 80%.

The proposed technology is designed to be scalable and takes a straight line in the context of a smart city by also offering remote monitoring and telecontrol services that go beyond the aspect of simple public lighting by providing information for better traffic management.

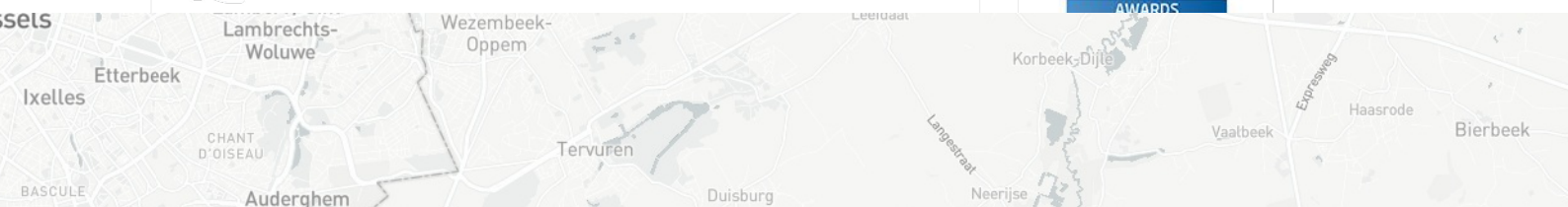
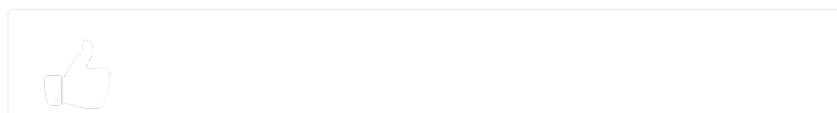
The SmartNodes solution has already been the subject of numerous installations in industrial parks or car-pooling parks. It is now deployed in Wavre in a residential area: the most important deployment in Belgium of intelligent public lighting including remote management aspects.

- Quality of life :
- Mobility :
- Smart city :
- Energy/climate :
- Citizen participation
- Security
- Infrastructure
- Digital services
- Citizen-awareness
- Urban Lighting

**Company (es) Website :**

## Contest

## Building candidate in the category



Coup de Cœur des Internautes



Grand Prix Infrastructure Durable

