

enel x

**SMART URBAN
FURNITURE**



INTERCONNECTED, MODULAR, MULTI-FUNCTIONAL

A CITY THAT COMMUNICATES

For Enel X, in the city of tomorrow, new technologies will be used to instill “**intelligence**” in the urban ecosystem. By enabling sensors, infrastructures and management systems to dialog and exchange information with one another, it becomes possible to manage the available resources in a sustainable way, both economically speaking and in terms of energy consumption.

What better opportunity to put this idea into action than to use infrastructures connected to the urban furniture in our cities, so constantly integrating and enabling the newest solutions and services?

For example, the capillary public lighting infrastructure can become a physical support for environmental

sensors, video cameras for urban security or smart parking, digital screens for communicating with citizens and e-mobility charging stations. The key element of our proposal is the **modularity of our offering**: the many combinations of products available enable us to respond to the specific needs of each city.

Thanks to Enel X, each and every element of our cities becomes an **opportunity**: a chance to connect, inform, help, evolve, improve.

“Changing to a connected, multifunctional urban furniture is a scalable strategy that transforms a “dead resource” (one that consumes energy and money), into a “live asset” (one that generates knowledge and above all, new opportunities).”

“Senseable Genova Whitepaper” Carlo Ratti Associati

The advantages

The Enel X smart urban furniture solutions make it possible to:

-  **rationalize the available resources**, by integrating several services in the same infrastructural base, thus promoting energy efficiency and sustainability;
-  **increase public security**, by adding smart video cameras to elements of urban furniture, connected in real time with the competent departments;
-  **communicate better with citizens**, by including digital screens in the assets present locally;
-  **collect data for activating and optimizing services**, such as mobility, tourism and security;
-  benefit from **new economic revenues** to be reinvested in additional services, for example by increasing the value of advertising spaces;
-  guaranteeing a clean, **tidy aesthetic**, with attractive, customizable designs, always in line with the surrounding urban context.

Our solutions

By maintaining a close focus on the efficiency and optimization of resources, Enel X is pleased to propose a new set of **integrated solutions** that offer many services, based on the same infrastructural base. All with a careful eye on the **digital** and **design** aspects, with a view to constantly modernizing and enhancing the beauty of our urban scenarios.

Enel X offers 3 families of products, which can be combined in modular offers and enable personalized services.

-  **Juice Solutions:** the urban furniture that integrates e-mobility charging stations.
-  **Smart Solutions:** thanks to integrated sensor technology, these urban furniture solutions optimize consumption, activate new services and, when interconnected via a digital platform, provide information that can be used to manage the city.
-  **Off-Grid Solutions:** urban furniture powered by solar or wind energy.

Juice Solutions

 **Enel JuiceLamp:** a perfect example of a multifunctional street lamp combining cutting edge public lighting with no less than two e-mobility charging stations.

 **Enel JuiceLamp Plus:** also with camera, environmental monitoring sensors and Wi-Fi.

 **Enel X Juice Media:** combines one or two e-mobility charging stations with a high resolution **LED/LCD screen** that can be used as a **digital interface** between the Public Administration and citizens and/or tourists. The Juice Media can integrate other added value solutions such as Wi-Fi, environmental sensors, security cameras and use them to enable **Urban Advertising** services.

 **Enel X JuicePark:** the **photovoltaic smart shelter** for covering car parks and charging cars, scooters, bicycles, which can also be extended to accommodate electric buses.



Smart Solutions

 **Enel X SmartPole:** a street light that also becomes a **multifunctional totem**. It includes many IoT services and sensors: video analyses and smart security, environmental monitoring, connectivity and info point displays in one single solution and control panel.

 **Enel X SmartShelter:** our new concept of the bus shelter that also becomes a **smart or multifunctional area**. It can be integrated with video surveillance cameras (for example with alarms for signaling abandoned objects, people counters etc.), USB sockets for charging smartphones/tablets, sockets for charging electric bicycles or scooters, displays for info points or advertising, integrated photovoltaic panels, Wi-Fi hotspots and much more.

 **Enel X SmartBike:** a convenient, user-friendly **bike sharing station** composed of a totem and a rack for charging electric bikes. This can become even greener, if photovoltaic panels are integrated, and can provide information to citizens and tourists, by introducing LED screens or information totems.

 **Enel X CardioPila:** the built-in automatic defibrillator helps make cycle paths and parks into cardio-protected spaces.

 **Enel X SmartBench:** the **smart bench** that can integrate a wide variety of services, including connectivity, night lighting, environmental monitoring sensors, LCD displays, defibrillators and bike racks in a single element.

Off-Grid Solutions

 **Enel X SolarPole:** the multifunctional street light that integrates photovoltaic panels capable of powering various sensors with solar energy, for a greener, more sustainable city.

 **Enel X WindPole:** an attractive design for a lighting system with a micro wind power system, powered only by **wind energy**.

 **Enel X SolarBench:** the **smart bench** can also be used off-grid thanks to the **photovoltaic panels** built into the seat. This means that there is no need for changes to be made to the infrastructures of the public spaces in which it is installed, and that all its functions run on **solar power**.



THE VALUE OF COMMUNICATION

URBAN ADVERTISING: INFORMING AND PROMOTING THE TERRITORY

A digital window on our streets

- > **Providing useful information or messages of public interest** to the tourists who visit our cities is of crucial importance.
- > **High priority communications** about security and mobility.
- > Messages promoting local activities designed to boost the social and economic development of the territory.

The potential opened up by Urban Advertising and the Enel X related solutions offers many benefits for city authorities:

- > helping them feel **closer** to the citizen;
- > presenting **targeted contents** for the various user types (residents, tourists, workers, etc.);
- > promoting the **territory** and the activities of the local associations and businesses;
- > enhancing the **value** of the infrastructures and maximizing the economic revenues, which can be reinvested in additional services for the citizens.

Communicate with whomever you want, whenever you want.



Our solutions

Enel X offers a series of wide-ranging solutions for digital urban advertising (or in jargon “Digital Out of Home”):

- > **advisory regarding the positioning of the screens:** Enel X provides digital tools such as City Analytics, which can analyze Big Data to estimate the analysis of the flows of residents and tourists and identify the key points where the solutions should be installed, with a view to maximizing the value of the advertising space;
- > **customization of the offer:** the Enel X “Juice Media” can integrate various added value services, including charging stations for electric vehicles, smart video cameras for video analyses and surveillance, Wi-Fi, environmental sensors;
- > **creation of digital info point solutions:** for the promotion and dissemination of messages of public interest using interactive, innovative methods;
- > **management of advertising spaces:** Enel X collaborates with the various partners of the sector to create and manage local and themed advertising circuits;
- > **maintenance of the installed infrastructures.**

The advantages



Optimization of the advertising spaces and the installation costs, via the integration of screens, charging stations, video cameras and sensors on the same infrastructural support.



Local marketing: making the most of the technologies provided by Juice Media to promote the excellences of the territory as effectively as possible.



Promotion of the local area.



Self-financing: the costs of the infrastructures required to activate Urban Advertising can be partially reduced or even fully offset with the revenue generated by licensing the advertising spaces.

Case studies

Smart urban furniture can be used to renew entire areas of the city. How? By proposing new looks, optimizing the existing services and offering new ones, increasing security and therefore, for example, prolonging the period during which the area is used.

GREEN PARKS

Our parks have never been as green

Giving back our parks to the citizens has never been so important. According to the World Health Organization (2016 study), interventions that promote green urban spaces have the potential to:

- > reduce our exposure to environmental risks;
- > improve our lifestyle and quality of life in general;
- > safeguard the health and wellness of citizens.

The proposals of Enel X

Energy efficiency policies combined with integrated solutions including:

- > video surveillance;
- > improvements in terms of lifestyle and quality of life in general;
- > charging points for electric devices and defibrillators;
- > smart urban furniture.

They can turn the park into a **multifunctional space** that meets the needs of everyone: young people, the elderly and families alike.

“City parks often have poor artificial lighting systems, a situation that limits their use in the daytime because they are not perceived as safe in the evening. Many cities around the world, from Los Angeles to Amsterdam, have transformed their urban parks into new hubs for citizens, places where events can be organized, also in the evening and at night.”

“Senseable Genova Whitepaper”, Carlo Ratti Associati

OUTDOOR SPORT FACILITIES

Responsible, safe wellness

Sport is an activity that promotes inclusion and social cohesion, as well as proposing itself as an important element of education for today's young people. Sports centers and facilities are essential urban meeting places: inside, the connection networks which are formed are the foundations of a city's social fabric.

The proposals of Enel X

Smart solutions that integrate investments in energy efficiency with additional functions including:

- > LCD displays;
- > electricity connections;
- > video analyses;
- > defibrillators and benches powered by photovoltaic systems with USB charging points.

They have the potential to transform sport centers into multipurpose and multifunctional meeting places. These solutions, in addition to proposing the highest standards of sustainability, also respond just as effectively to the needs dictated by the performance of the sporting activities, such as the possibility to adapt the facilities to new uses, such as hosting musical events.

CYCLE PATHS

Sustainability and responsible tourism

The use of the bicycle is a zero-emission and sustainable form of mobility that is beneficial for both the environment and the citizen's health. Encouraging the use of bicycles as a means of urban mobility also requires us to invest in the usability of our cycle paths.

The proposals of Enel X

Solutions featuring:

- > smart lighting;
- > video analyses;
- > multifunctional urban furniture;
- > defibrillators.

They enable energy efficiency policies to be implemented and, at the same time, increase the visibility and safety of the cyclists. These 'smart' paths offer additional opportunities for using the urban space as a venue for recreational activities and initiatives designed to support tourism. E-bike sharing stations can be added to the offering, to encourage people to use the path and to promote sustainable urban mobility solutions.



SMART SQUARES / DISTRICTS

The reflection of an "illuminated" city

The squares in the city center are the main visiting cards of any city, and the nerve centers of the activities carried out therein. They are investments geared to promoting energy efficiency, combined with integrated solutions capable of developing additional energy optimizations and adding functions to the basic infrastructures, offering functional, environmental and communication opportunities.

The proposals of Enel X

Energy efficiency policies combined with integrated solutions including:

- > video analyses;
- > charging sockets for electric devices;
- > defibrillators;
- > smart urban furniture.

They can transform the city center into a multifunctional space that meets the needs of everyone, citizens and tourists alike.

CHRISTMAS MARKETS

The best Christmas gift for our citizens

Crowded squares, full hotels and restaurants, development of the small businesses and traditional food and drink of the local area are only some of the side revenues generated by Christmas markets for the city that hosts them.

A trend that is rapidly gaining popularity, and one that offers citizens a chance to enjoy themselves and gives tourists a further reason to visit. For example, in 2018 the city of Trento broke the record for the highest tourist flow, hosting more than half a million visitors. The fact that the market is well-lit and frequented by families brightens up the neighborhood and acts as a deterrent for small-time criminals, who generally seek isolated, poorly lit spaces.

The proposals of Enel X

The installation of public lighting solutions with integrated charging stations enables the stands to be connected to a power supply and eliminates the use of generators. Video cameras built into the pole can also perform video surveillance functions.

This would increase the energy efficiency and sustainability of the Christmas initiative, making the market a safer, more welcoming place for everyone.

Connecting the stalls to the electricity sockets of the Municipality would reduce costs for the exhibitors, who previously used generators, and generate new economic revenue for the Administration.





LOCAL STREET MARKETS

The reflection of an “illuminated” city

Sustainable Markets

Local street markets instantly evoke the characteristic scents, values and traditions of the place that hosts them. They offer a snapshot of the city’s culture.

However, the use of generators to power the food stalls leads to problems such as the pollution of the atmosphere, noise pollution and potential issues linked to the safety of its users.

The proposals of Enel X

The installation of public lighting solutions with integrated charging stations enables the stands to be connected to a power supply and eliminates the use of generators. Video cameras built into the pole can also perform video surveillance functions.

This would increase the energy efficiency and sustainability of the market, as well as making it a sustainable, more welcoming place for everyone.

Connecting the stalls to the electricity sockets of the Municipality would reduce costs for the exhibitors, who previously used generators, and generate new economic revenue for the Administration.

CAR PARKING

Endless benefits

Enel X firmly supports the view that electric mobility plays a key role - in both the public and the private sphere - on our journey towards making our urban centers sustainable. One of the most effective investments for promoting electric mobility is the installation of charging stations for electric vehicles in urban car parks.

The proposals of Enel X

By maintaining a close focus on the efficiency and optimization of the resources, Enel X proposes a new set of integrated solutions for car parks, which offer many services, provided using the same infrastructural base. Sockets for charging electric vehicles, video cameras for video surveillance, and information displays can all be integrated in the same device, for example, the lamppost.

With a single investment, such as improving the efficiency of the lighting system in the car park, we can fulfill the triple objective of:

- > promoting the city’s energy efficiency;
- > incentivizing electrified mobility;
- > integrating additional services such as video surveillance and communication to the citizen.

The Enel X offering also extends to smart photovoltaic, multifunctional shelters for covering car parks and for charging electric cars, bicycles, scooters, and buses.

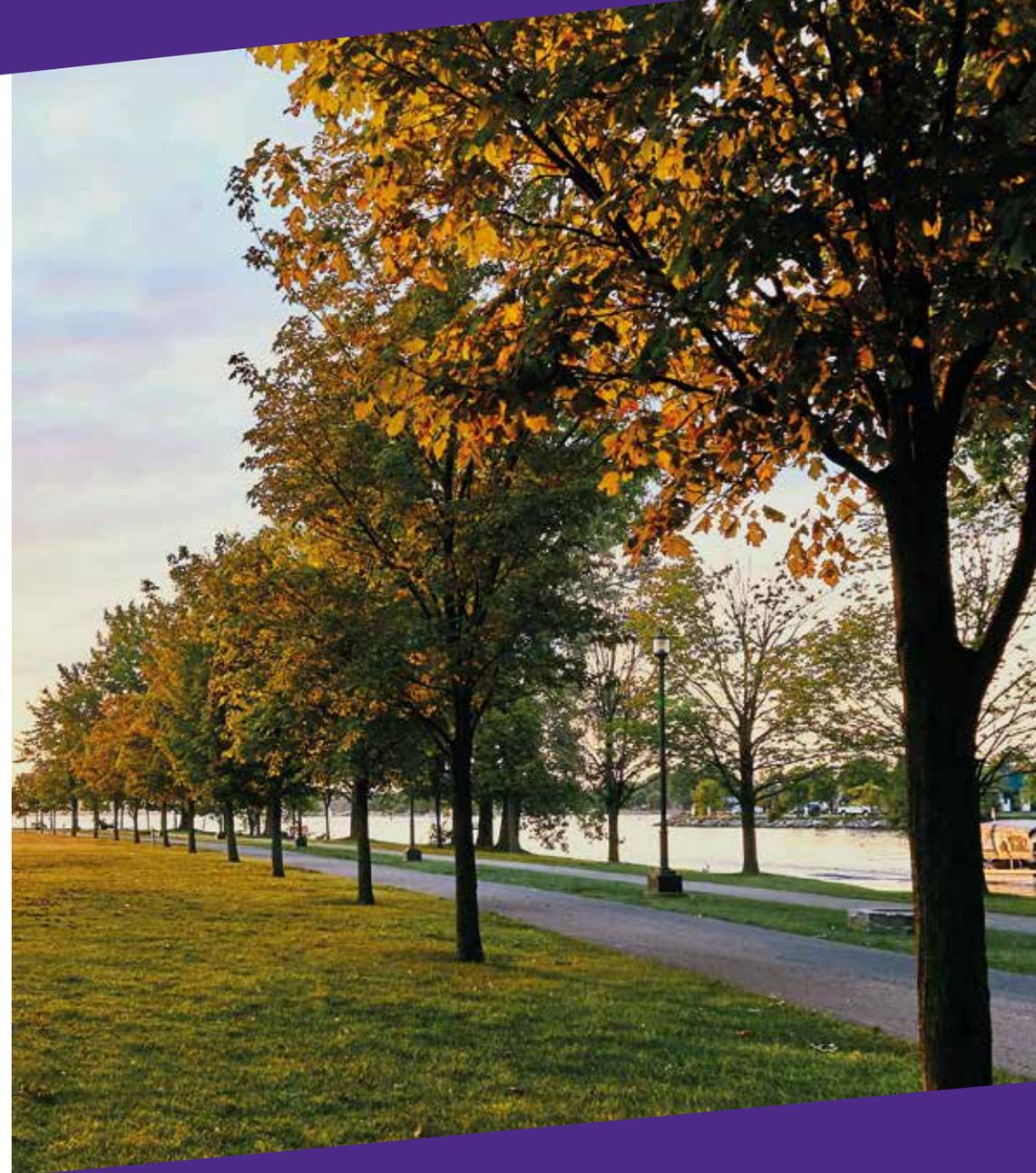


How much does it cost?

A lot, not much or nothing. For us, designing solutions together means being able to modulate the extent of the investment, the duration and the service level in order to meet the authority's spending targets. Any example?

With the **Urban Advertising** model we can partially or fully sustain the initial investment in smart urban furniture if we offset the costs generated by the advertising broadcast on the digital display. Additionally, we can manage the advertising spaces to sustain local businesses, thus participating in the dynamics of the local economic development.

Another possibility is that of using the **Project Financing** tool: thanks to research performed on plans for boosting the efficiency of public buildings and lighting systems, the saving made in the energy bills would be adequate to offset the investment in urban furniture.



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For further information visit the section dedicated to City on our website www.enelx.com

