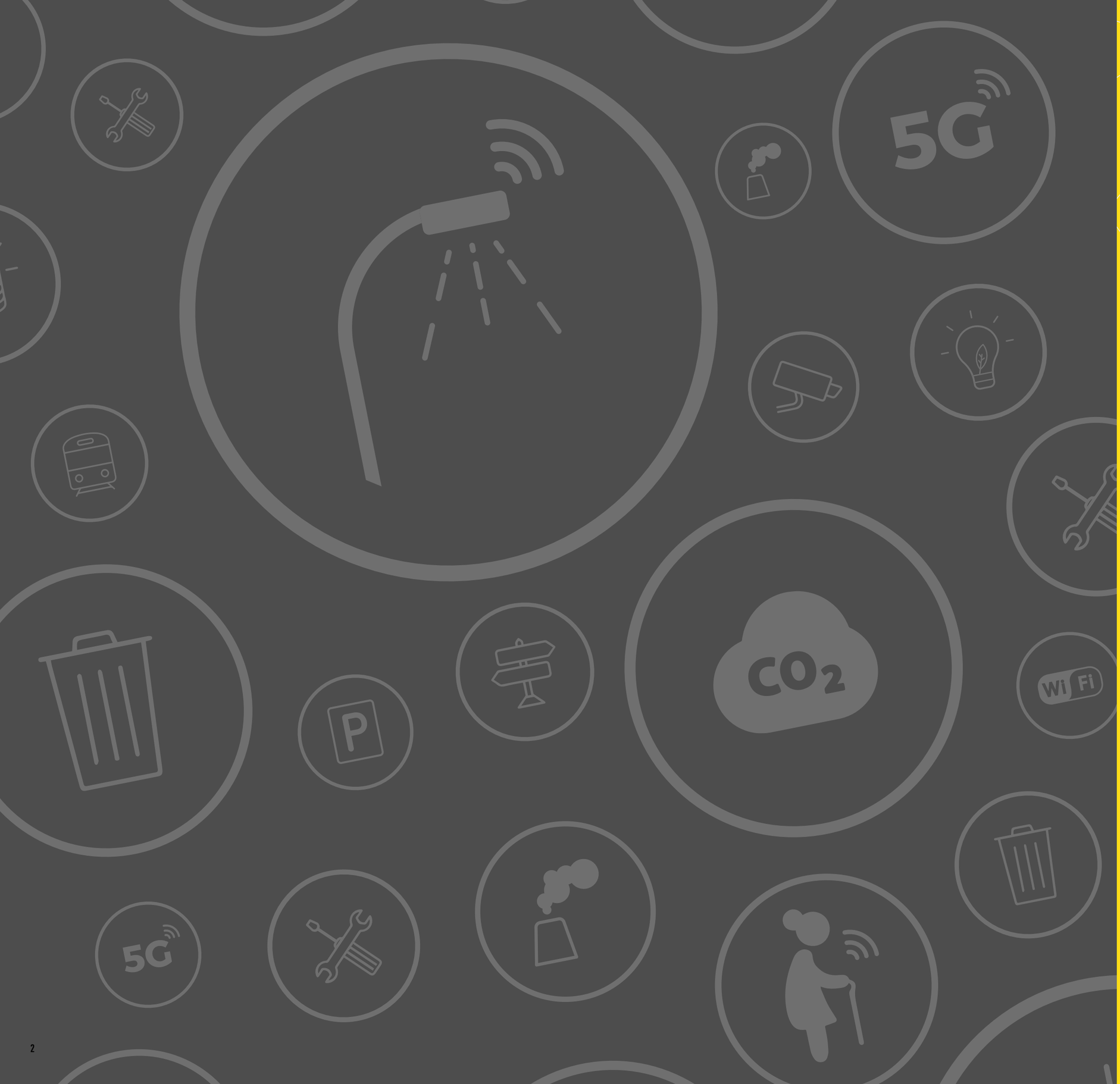

Smartec® by salvi
An interconnected city



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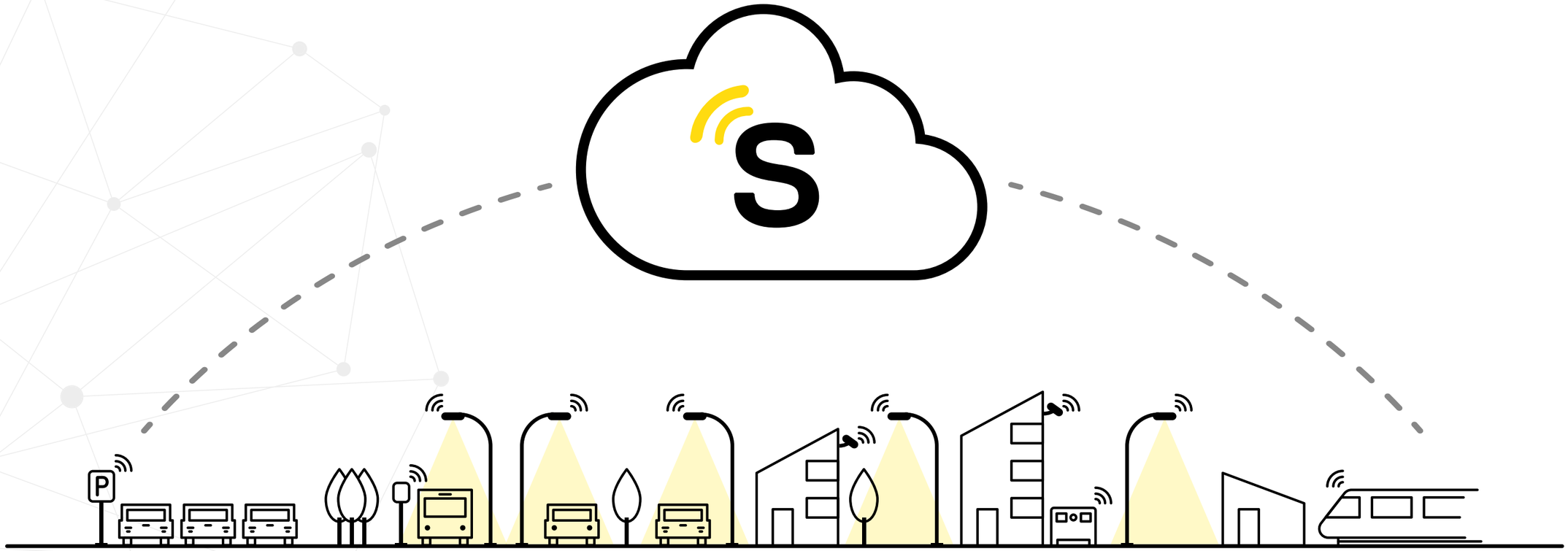


SMART CITY
INTELLIGENCE AT TOWN

Smart cities are those that use the potential of design technology and innovation, as resources to make them more effective, promote sustainable development and improve the citizen's quality of life.

The Internet of Things (IoT), big data, mobile apps, industry 4.0... are managing to improve the efficiency of cities, while using them intelligently. In this direction a city manages technology to improve people's lives and more specifically to achieve benefits such as: respect for environment, optimization of public services, expenditure saving, management improving, business attraction and communication improvement towards citizens.

For any municipality to be considered a smart city, it must meet these conditions:

- **Sustainable and harmonious economic, social and environmental development**
- **Optimal management of natural resources through the participation of citizens**
- **Citizens and institutions committed to the end objectives**
- **Infrastructures and institutions equipped with advanced technology solutions to make easier lives of citizens**

SMART LIGHTING
ENABLING SMART CITY

For the operation of a smart city the key piece is to meet the requirements of its citizens. By meeting citizen's needs with active use of provided services the city itself meets its smart objectives.

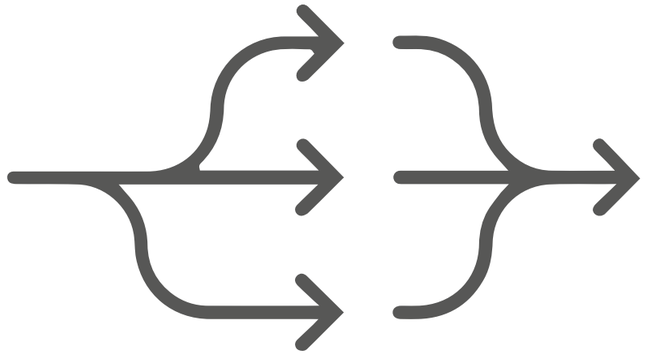
The application sectors **of** smart **cities** are very broad but many are intrinsically **linked to outdoor lighting**:

- Environment
- Urbanism
- Administration and government
- Security
- Tourism and leisure

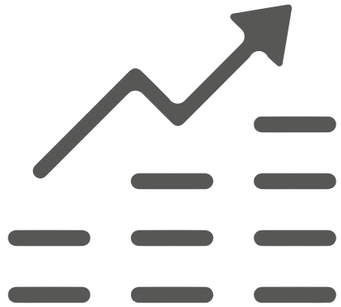
These sectors have common needs where smart outdoor lighting provides an effective solution.

- **Energy and public expenditure saving CO_2 reduction**
- **Consumption optimization**
- **Better mobility**
- **Easy management through a single open system**
- **Improved safety**
- **Grouping of luminaires and use of time strategies**
- **Event strategies regulating different areas: commercial or residential.**

SAFE



OPEN



SCALABLE

SAFE, OPEN & SCALABLE

The population is increasing considerably. According to United Nations data, 55% of the world's population lives in cities or urban areas, and this proportion will grow to 68% by 2050. Urban areas are absorbing almost all of the future growth of the world's population.
Given the UN's projections, this means that in just three decades, some 6.6 billion people will be living in cities while the world's total population today is 7.7 billion.

Thanks to technological development, through effective and smart public lighting, many ways are offered as to contribute to smart objectives and generate benefits for all stakeholders.

REPLYING TO YOUR NEEDS

CITIZEN

Smartec management and control capabilities® make a city much better informed about the good health and performance of its lighting infrastructure and make improvements to improve the well-being of citizens. Smart lighting, and in particular dynamic lighting, an make citizens feel safer and more comfortable.

CITY

Smart Lighting is helping cities to achieve huge savings in energy, operations, and maintenance, while helping to create a more attractive and secure environment. Smart lighting allows to monitor and control the entire lighting infrastructure while getting information about its performance.

FUTURE PROOF LIGHTING
AS A STARTING POINT

New technologies are transforming the way we conceive our environment. The introduction of LED technology within the outdoor lighting market and the progressive disappearance of discharge lamps is an evidence of this digital revolution.

Smartec® estimates that in next half decade the market is offering only smart lighting solutions as public lighting represents the best distributed electricity infrastructure in towns and cities across the world. All this thanks to the backbone of a city that connects more than 360 million luminaires worldwide with access to the energy grid.

With Smartec® you **convert** your **network 12/7 to shared networks 24/7** where it is made possible to install a safety camera, an environmental sensor, a traffic counter or an electric vehicles charger on a lighting point while the energy still flows along the street.

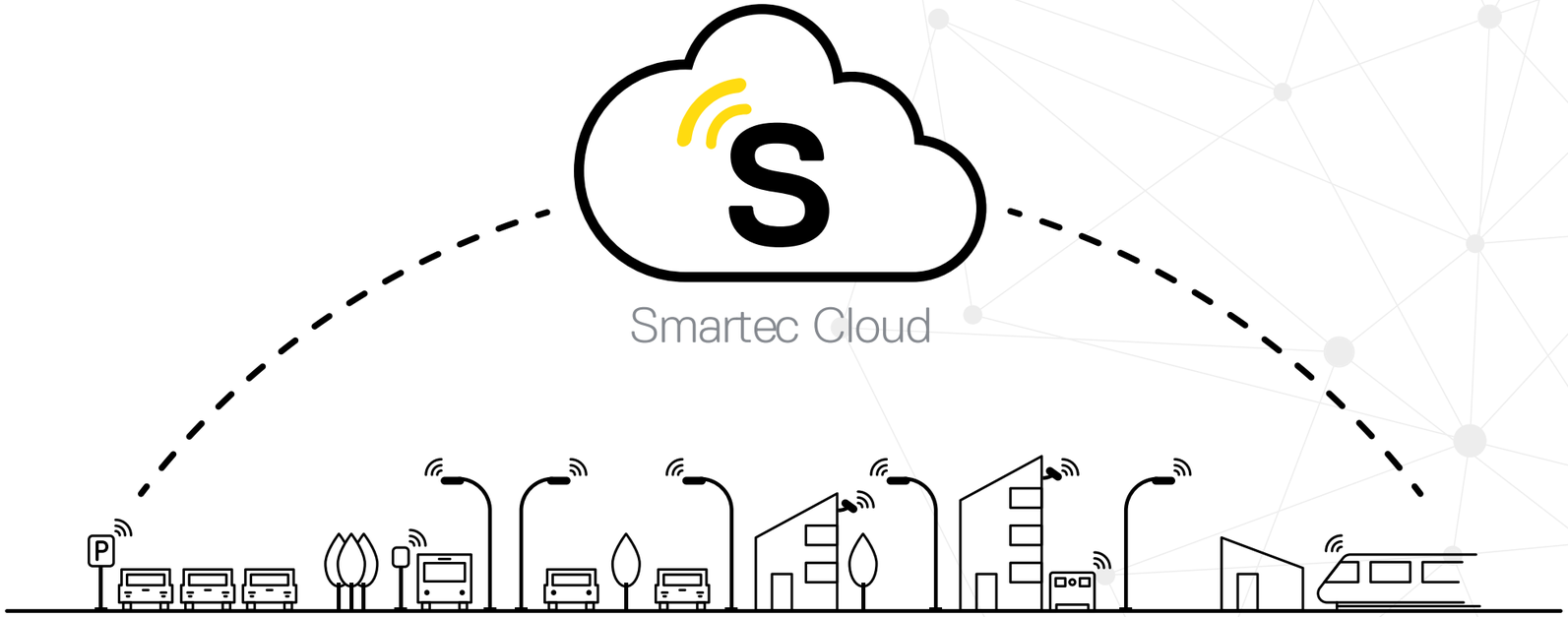
“WHERE PUBLIC LIGHTING NETWORK IS DEDICATED CONNECT SMART DEVICES WITH SMARTEC® AND CONVERT CITY’S DEDICATED NETWORK INTO A SMART GRID 24/7”

WHAT ABOUT SMARTEC® CITY

CONTROL OF THE CITY IN YOUR HAND

Through Smartec® hardware and software integrated in the city infrastructure, it is possible to enable adaptation to the global and specific needs of citizens, enabling the knowledge of devices' real-time status, data collection, energy saving, and fast decision process.

Smartec® software consists of an open database resident in the cloud or in the city's physical server as to access from anywhere and integrate with different brand software solutions, unlike devices' manufacturers and services providers.



Smart Lighting

Information signs

Pollution Control

Security

Smart garbage

Parking inteligente

WiFi Connectivity

Smart Transport

> *IT IS PROVEN **THAT** IN THE EARTH PLANET THERE ARE ALREADY MORE TECHNOLOGICAL DEVICES TO COLLECT DATA THAN HUMAN BEINGS*

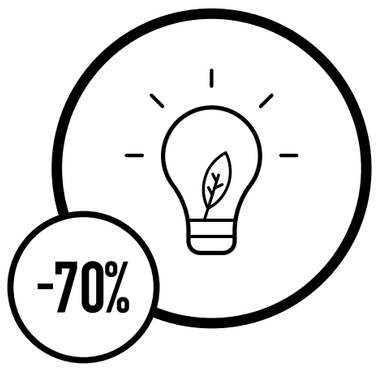
WHAT ABOUT SMARTEC® LIGHTING

FOR A FIT LIGHTING

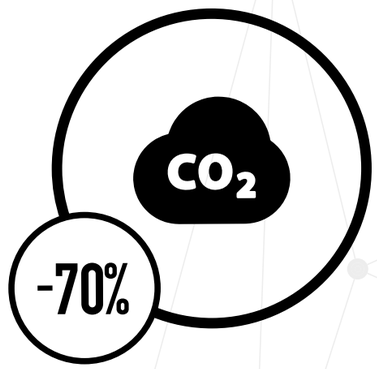
Smartec® Lighting allows the city to control and manage lighting installation by switching off and on, applying power regulation strategies, setting power saving and knowing status in real time.

Main objective is flexibility, sustainability, and care to energy saving while increasing efficiency.

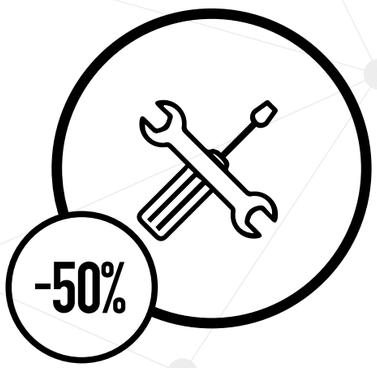
> *SMARTEC® ESTIMATES THAT IN 5 YEARS THE MARKET **IS OFFERING** JUST SMART LIGHTING SOLUTIONS*



ENERGY



POLLUTION



MAINTENANCE

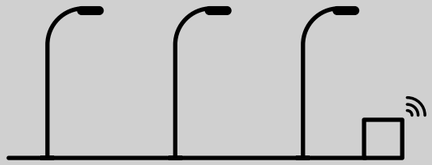
PUBLIC EXPENDITURE

SCALABLE SOLUTION

SMARTEC®

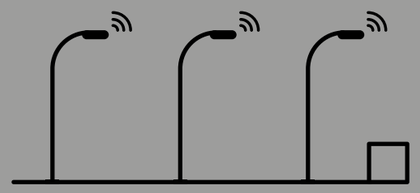
- Installation management by electrical panel, by luminaire using colored interactive icons
- Knowledge of current energy data by periods, by time interval or by electrical line
- Analysis about energy savings in power and Cost
- Display of consumption data for each luminaire in real time: current, voltage, power and power factor
- Real time commands and polling
- Flexible luminaire dimming, strategies storage, preset strategies, execution at selected date and time interval.
- Possibility of programming luminaires by dimming stages according to individual, group or gateway requirements
- Create levels of security by users
- Email alarms forwarding
- Statistical data download in different format
- Error and failure log and calendar
- CMG management gateway as to visualize status of power lines and measurements for the control panel

CONTROL PANEL MANAGEMENT



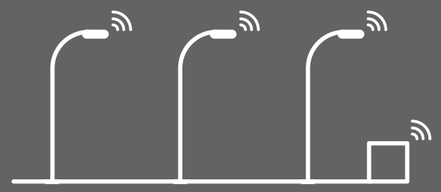
- *REMOTELY POWER ON -OFF*
- *ASTRONOMICAL CLOCK SWITCH*
- *ELECTRICAL MEASURES READING*
- *ANOMALIES AND LINE ALARMS (EMAIL)*

DOTDOT MANAGEMENT



- *INDIVIDUAL AND GROUP MANAGEMENT*
- *ENERGY SAVING %*
- *LUMINAIRE FAILURE ALERT (EMAIL)*
- *REAL-TIME MONITORING*
- *ACCESS FROM ANY DEVICE VIA WEB BROWSER*
- *COMPATIBLE WITH DIFFERENT TECHNOLOGIES*
- *LIGHTING OUTPUT DIMMING*
- *PRE-PROGRAMMING AND ADJUSTMENT*

GLOBAL CONTROL



CONTROL PANEL MANAGEMENT + *DOTDOT MANAGEMENT*

INTEGRATION
PLUG & PLAY

We guarantee adequate implementation of the system, providing full support during the hardware installation and performing configuration of the software.

TRAINING
ALL YOU NEED TO KNOW

We offer training over our solutions so final user can take full advantage of the capabilities of the Smartec® system.

SECURITY
DATA PROTECTION AND RELIABILITY

Smartec ensures security and reliability in data transmission protecting storage of the same.

DAILY USAGE
AN EQUIPMENT TUNED ON NEEDS

Manage daily the installation reading reports, tuning dimming strategies, analyzing alarms and programming onsite interventions.

HOW WE MAKE IT?

Different Smart Services

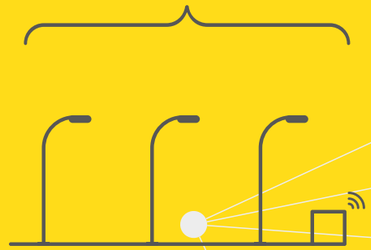
Smartec Cloud

Gateway / Modbus

DotDot Management

Gateway installable wherever the lighting manager team needs: within the control panel or in the control room. Maximum of 300 Meters distance the first node required.

Control Panel



Control Panel Management

Installation of the control panel module needs to be onboard the same unit to be controlled. This way final user is remotely controlling power on and off, and checking consumption data.

A SINGLE SOLUTION
FOR MULTIPLE NEEDS

For the operation of a smart city the key point is to meet the needs of its citizens and the city. By meeting one of the needs with active use of installed services we will meet our Smart objective.

- **Energy savings achievable goals**
- **CO2 pollution control**
- **Flexible dimming strategies**
- **Tailor made lighting for better mobility**
- **Easy management through a single open system**
- **Better lighting quality for increased safety**
- **Luminaires grouping and calendar strategies regulating different areas: (i.e. commercial or residential)**

CITIZEN:
Smartec® management and control features make a city much better informed about the health and performance status of its infrastructure as to improve the well-being of citizens. Smart lighting, and in particular dynamic lighting, can make citizens feel safer with a more comfortable and efficient lighting.

CITY:
Smartec® can help cities as achieve savings in energy, operations and maintenance, while helping to create a more attractive and secure environment. Smartec® allows the city to monitor and control the entire lighting infrastructure and get information about its performance.

MAINTENANCE:
One of the main benefits of intelligent lighting is increased performance knowledge, automated failure management and real time status reporting.

This will allow the city to automate the maintenance and repair services optimizing the on duty technical team workflow by allowing significant savings.

OPEN SOFTWARE
FOR ANY PURPOSE

When talking about smart cities, as the name suggests, we imagine an interconnected city. Smartec® features different applications other than cities.

Today different infrastructures are ready to the use of control software such as Smartec®.

- **Tunnels and underpasses**
- **Sports installations**
- **Architectural lighting**
- **Main Roads and Highways**
- **Parking**

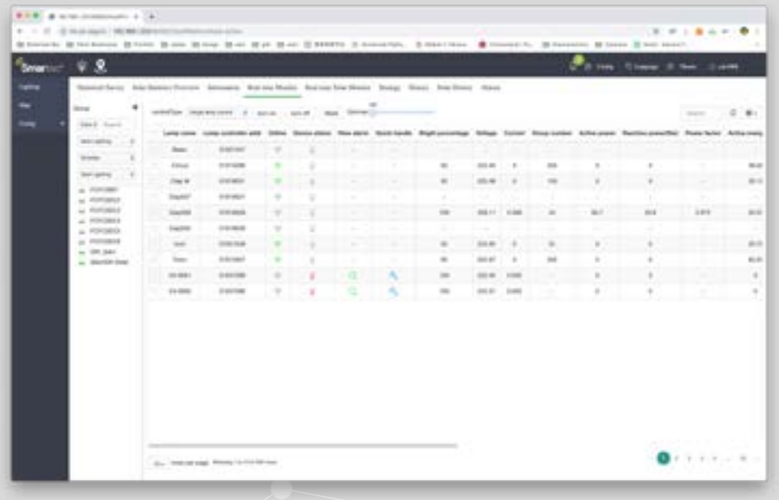
Connect your smart service to Smartec®.

> *WHATEVER INFRASTRUCTURE WILL BE, SMARTEC® PROVIDES CONTROL, MONITORING AND DATA VISUALIZATION OF THE WHOLE INSTALLATION*

CONTROL

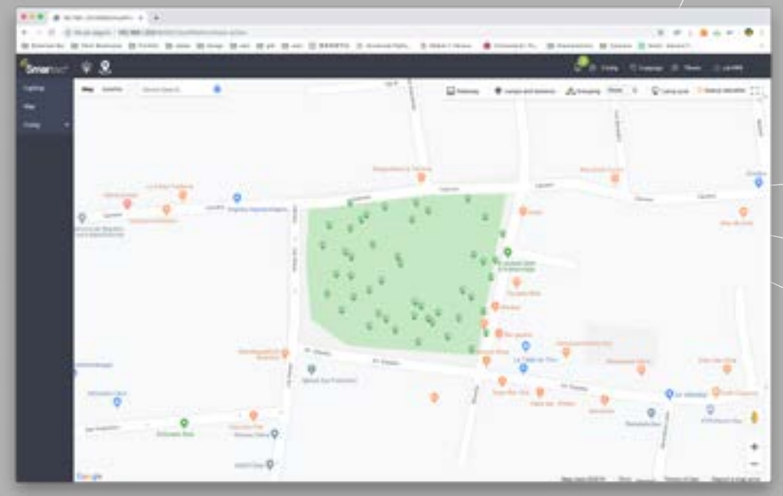
The intuitive user interface allows to control and program lighting levels and strategies for each individual luminaire, street or entire neighborhood.

Depending on the specific need, lighting levels can be increased as to improve safety and visibility, or attenuated as to save energy and prevent lighting pollution



MONITORING & ALARMS

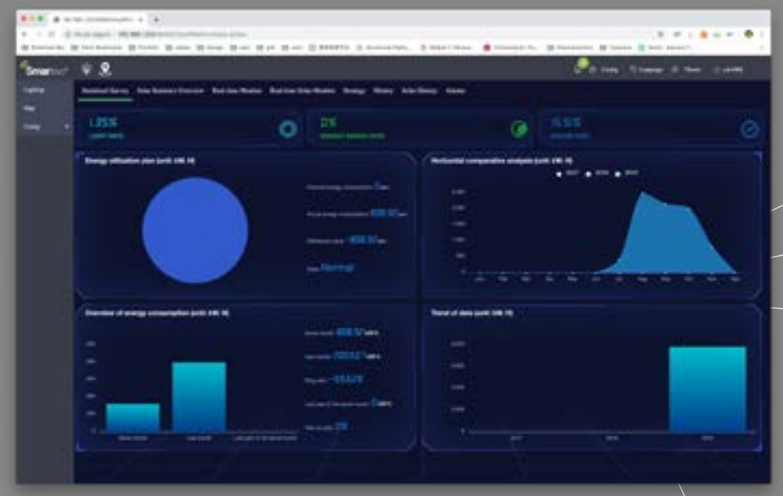
User will be automatically informed if an alarm occurs, which will allow to program maintenance process. The system offers configurable alarm types with different strategies, as to know how exactly the luminaire has failed, with complete information and history of that luminaire.



DATA REPORTING

Information on energy and savings, by measuring or calculating each luminaire or individual cabinet is being displayed. This helps the city manager to evaluate ongoing energy strategies and plan for the future.

Accurate energy measurement helps energy bills monitoring.

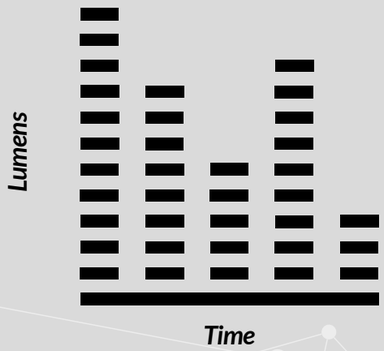


APPROPRIATE LIGHTING
WHEN YOU NEED IT

Cities are constantly moving and evolving as to meet the changing needs of citizens, businesses and visitors. Cities also have to comply with most recent regulations and standards. Smartec® provides to the city a strong flexibility in lighting management, while meeting energy-saving requirements, now and in the future.

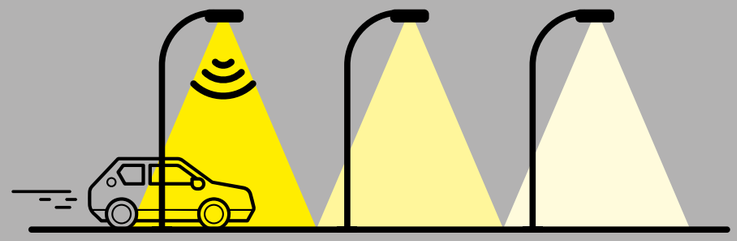
DIMMING STRATEGIES

Smartec® may specify an exact dimming profile or strategy for a single luminaire or group, with an intuitive and easy-to-use interface. It is possible to ensure full lighting over main roads during crowded hours, while residential areas remain at lowest allowed dimming levels during sleeping hours. Commercial areas may be differently managed by applying lowest dimming at crowded hours and highest dimming after working time.



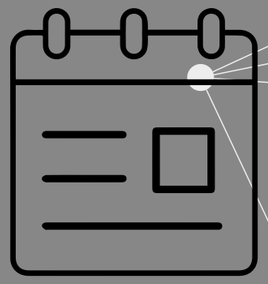
LIGHT ON DEMAND

By integrating Smartec® sensors, the city can evolve lighting infrastructure into dynamic system, responsive to human and vehicles presence, maximizing energy savings and optimizing lighting availability when and where it is needed. Research shows that sensor-based lighting has a huge impact on energy saving and a positive effect on citizens' perception of safety.



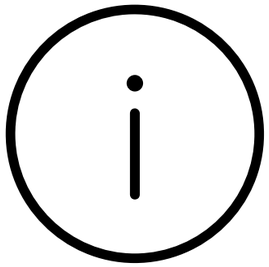
CALENDAR & TIME STRATEGIES

Smartec® allows calendar-based scheduling (time strategy) This lets individual profiles to be set per day for each luminaire or group of luminaires.
For example, it is possible to create different scenarios for any season (winter strategy, summer strategy…) or lit for longer on weekends or holidays nighs and so on (event strategy).



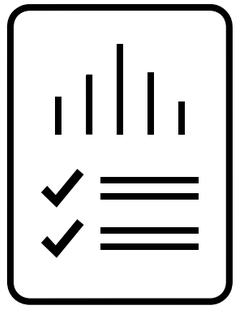
MAINTENANCE *PLUG&PLAY*

Smartec® allows you to monitor the state of lighting throughout the city, through a single CMS panel. The performance and behavior of the street lamps are recorded in customized reports for you. The platform automatically generates notifications in case of errors or failures, allowing real-time and well-informed actions, as well as reducing the need for night patrols.



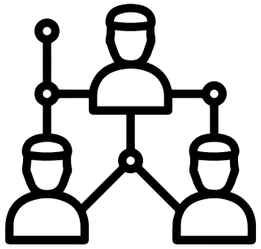
STATUS REPORTING

Smartec® provides real time information with status of each gateway and luminaire. Failures and alarms are automatically recognized, while notifications are sent to the on-duty team as to plan action.



REPORTS

Smartec allows ro track city's lighting performance, luminaire and cabinet status, power consumption and savings in different locations and within customizable time periods.



FLEET OPTIMIZATION

Smartec® allows you to further improve management of lighting your city through information detailed about your infrastructure, what which helps to better manage the repairs and improves the efficiency of all workflows related to lighting.

ADMIN & USER PROFILES

Smartec® allows to create different management profiles for different users by activating different username and password with different permissions for improved security.

SAVING BY LIGHT ON DEMAND

ADAPTIVE LIGHTING

Luminaires are incorporating a smart node, (CPU, GPS, radar, luxmeter), detecting the passage of vehicles and pedestrians, determining speed and direction. Nodes are communicating with their neighbors, turning luminaires on and dimming according to configurable parameters.

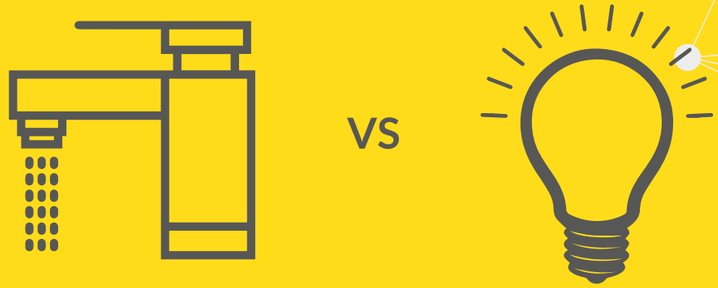
System allows to disable this function remotely by passing control to individual point-to-point control, or fixed lighting level.

- In low-traffic or low-crowded situations it allows energy savings of more than 80%
- Increases road safety as adapts lighting to actual and real-time road and traffic conditions
- Reduces light pollution, intrusive light, and CO2 emissions
- Reduce la contaminación lumínica, la luz intrusa, y las emisiones de CO2.

COMPLYING TO EU STANDARD

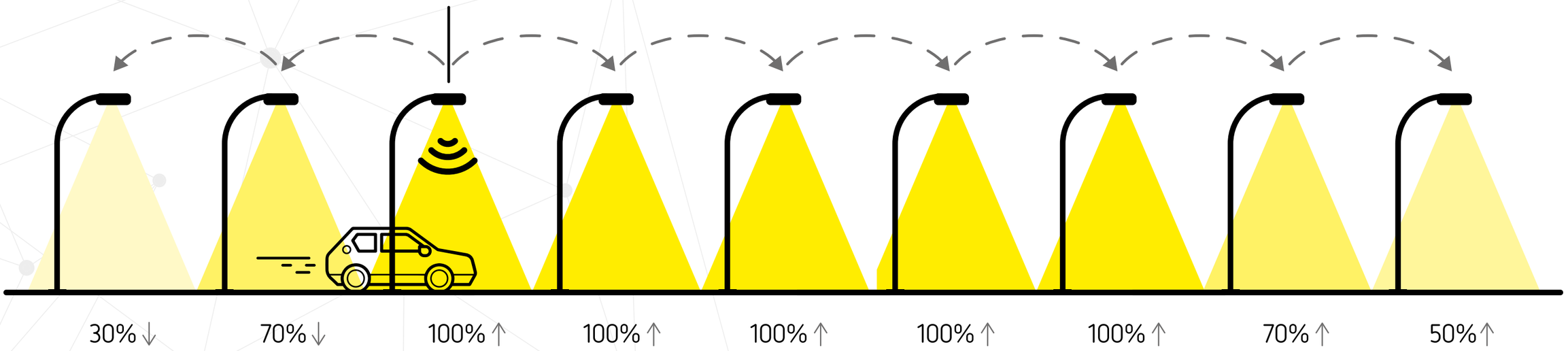
Adaptive lighting EN 13201:2016: “changes in luminance level and real-time controlled lighting in relation to traffic, time, weather conditions and other parameters”.

WHY AFTER CONSUMING WATER WE CLOSE THE TAP, WHILE WE LEAVE THE PUBLIC LIGHTING LIT-ON ALL NIGHT LONG?, EVEN WHEN NO ONE IS USING IT?



ACTUAL TECHNOLOGY NOWADAYS ALLOWS TO SAVE THIS RESOURCE

Detection and propagation



TAKE CARE OF YOUR CITY
FROM ANY SITE

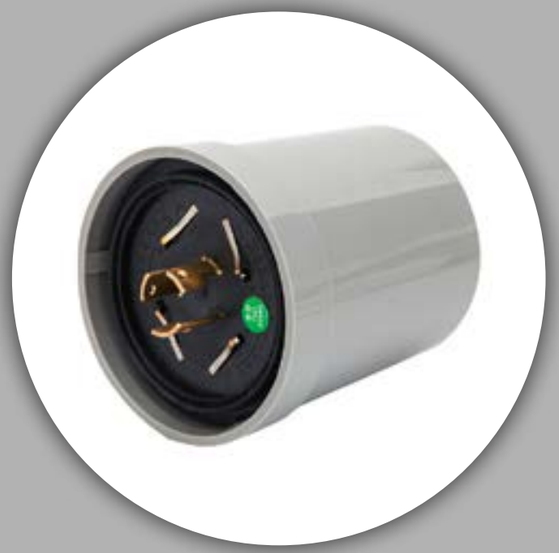
Working in environmental defense has been a natural choice since the beginning of Smartec®'s activity. Operating in accordance with the principle of providing "adequate light as needed, when and where required", means optimizing lighting energy costs, reducing gas emissions reducing air & light pollution: installing our lighting controllers means making an ecological investment.

Respecting nature has never been more advantageous!

HARDWARE
LIGHTING NODES

In order to use the point-to-point solution it is necessary to install one of these devices in each of the luminaires.

INTEGRATED INTERNAL ANTENNA



NEMA 7 PIN 1/10V

ZHAGA DALI II

HARDWARE
COMMUNICATION GATEWAY

In order for our solutions to work properly, it is necessary to install one of these devices in the panel, depending on the contracted solution.

DOTDOT MANAGEMENT

Communication gateway with network nodes
(ZigBee – Dotdot - Lora)
(Gprs/3G/4G/ Ethernet/ Wifi)

CONTROL PANEL MANAGEMENT

Measure electrical parameters, remote power off, astronomical clock, alarms and saving history
(Wifi – LAN - 4G - Lora)
Communication gateway with network nodes
(ZigBee – Dotdot - Lora)

For more information:

www.smartec.com.es

salvi
lighting barcelona

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