

SMART SOLUTIONS

Intelligent energy solutions for
buildings, networks and districts



Your challenges

Responding to the challenge of climate change

The relentless increase in the demand for energy is the major driver of change in the current energy landscape. With the gradual depletion of fossil fuels and the increasing emphasis on the reduction of greenhouse gas emissions, it is vital that we change the way we live and work – developing cleaner energy sources, learning how to consume more effectively and committing to use less of the energy that we produce.

Identify savings

Energy represents a growing cost for all individuals and organisations. To minimise these costs, we must start with the measurement of our consumption. By analysing accurate, real-time data and implementing optimisation scenarios it is possible to make substantial gains across multiple points of consumption.



Guarantee the energy supply of every user

Delivering a guaranteed energy supply to domestic users and businesses is a priority for regional energy companies and Government bodies. The evolution of our electric networks towards smarter technology will support this objective and will help to improve our quality of life.

Successful transformation of the energy of a district

The transformation of the energy sector is a tremendous opportunity for every district to take control of its energy supply and demand, to enhance its natural assets and, therefore, to reinforce its appeal. With the massive growth in local renewable energy production, energy optimisation is becoming increasingly important across cities and entire districts.

Our solutions



Smart City

Future-proof your district

Socomec solutions encourage responsible energy usage and allow the district to be self-sufficient in terms of managing supply and demand.



To find out more



FLCO-URL 131 A GB

www.socomec.com/smart-solutions_en.html



Smart Building

Control your consumption and your budget

With Socomec solutions, you can reduce your consumption, store the photovoltaic electricity you generate onsite and intelligently manage how you exchange electricity with the national grid.



Smart Grid

For a network that's flexible and secure

Socomec solutions integrate distributed renewable energy generation and improve the flexibility of your electrical distribution grid.



Socomec, your **best asset**

Socomec, a family-owned manufacturer for over 90 years, is an industrial group with a global workforce of 3,200.

As specialists in providing solutions for power control, safety, performance and availability of low voltage energy, Socomec can fully meet the requirements of the industrial and large-scale service sector.

With nearly 10% of sales revenue ring-fenced for R&D, our company has a key asset: the capacity to offer custom products, solutions and services.

ENERGY
SPECIALIST
SINCE 1922

Control your consumption and your budget

Buildings represent 40% of the European Union's end energy consumption. The Smart Building is the main route through which you can achieve the objectives of the climate/energy package and reduce your energy bills.



Your building produces energy

- It produces green energy.
- You maximise your own consumption.
- Energy bills are reduced.

Your building stores energy

- Manages fluctuations of production
- Allows for peak shaving during consumption and production.
- Encourages load shedding.

Consumption is controlled

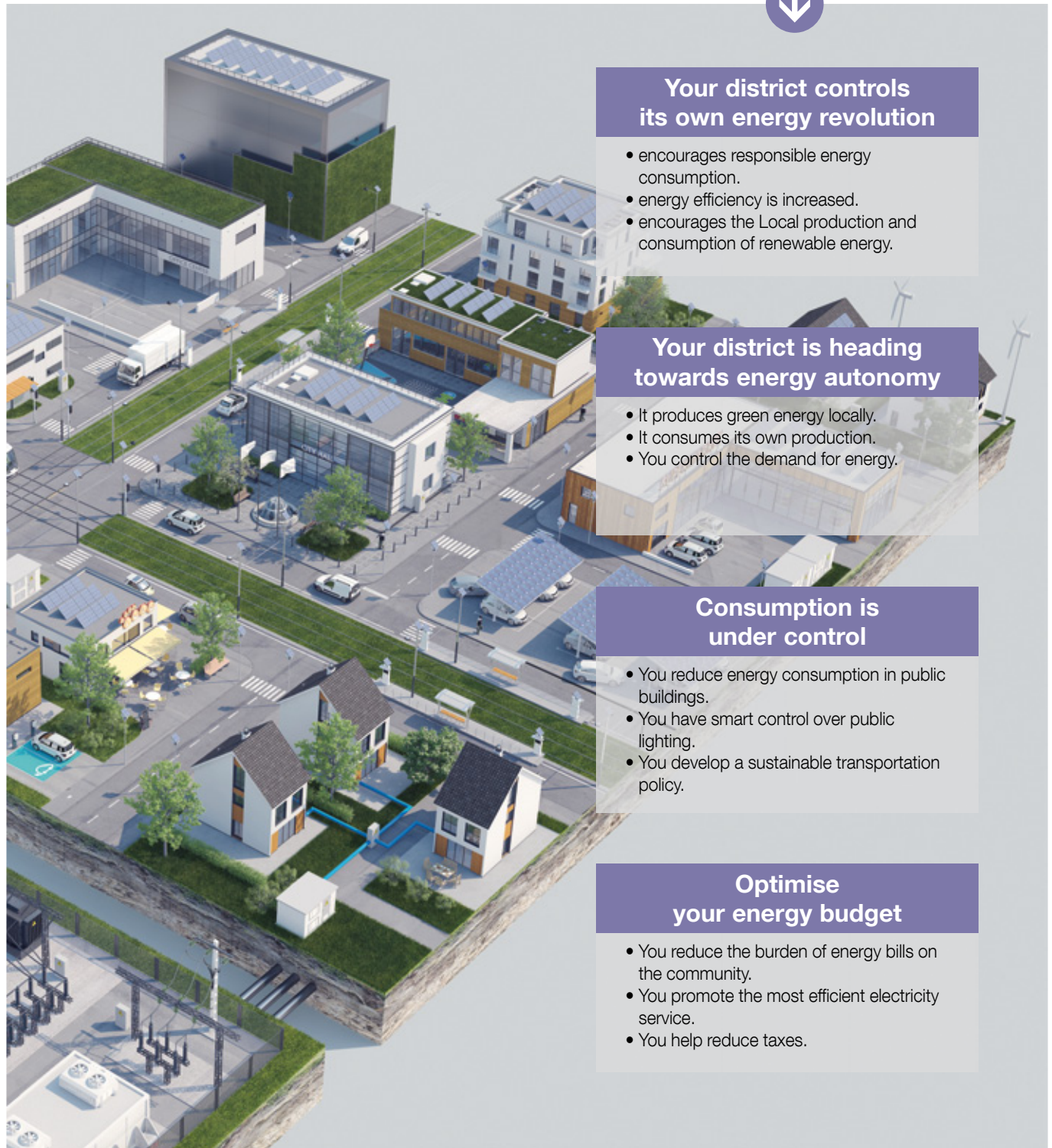
- The building accurately measures its consumption.
- You analyse the collected data.
- You maximise your energy output.

Optimise your energy budget

- You control the input and output of power on the grid.
- Complete control over your costs.
- Your estate goes up in value.

Future-proof your district

Cities house 50% of the world's population (two thirds by 2050) and are responsible for 75% of its energy consumption. Socomec solutions encourage responsible energy usage and allow the district to be self-sufficient in terms of managing supply and demand. The Smart City will encourage responsible energy consumption and an attractive cost proposition for everyone.



Your district controls its own energy revolution

- encourages responsible energy consumption.
- energy efficiency is increased.
- encourages the Local production and consumption of renewable energy.

Your district is heading towards energy autonomy

- It produces green energy locally.
- It consumes its own production.
- You control the demand for energy.

Consumption is under control

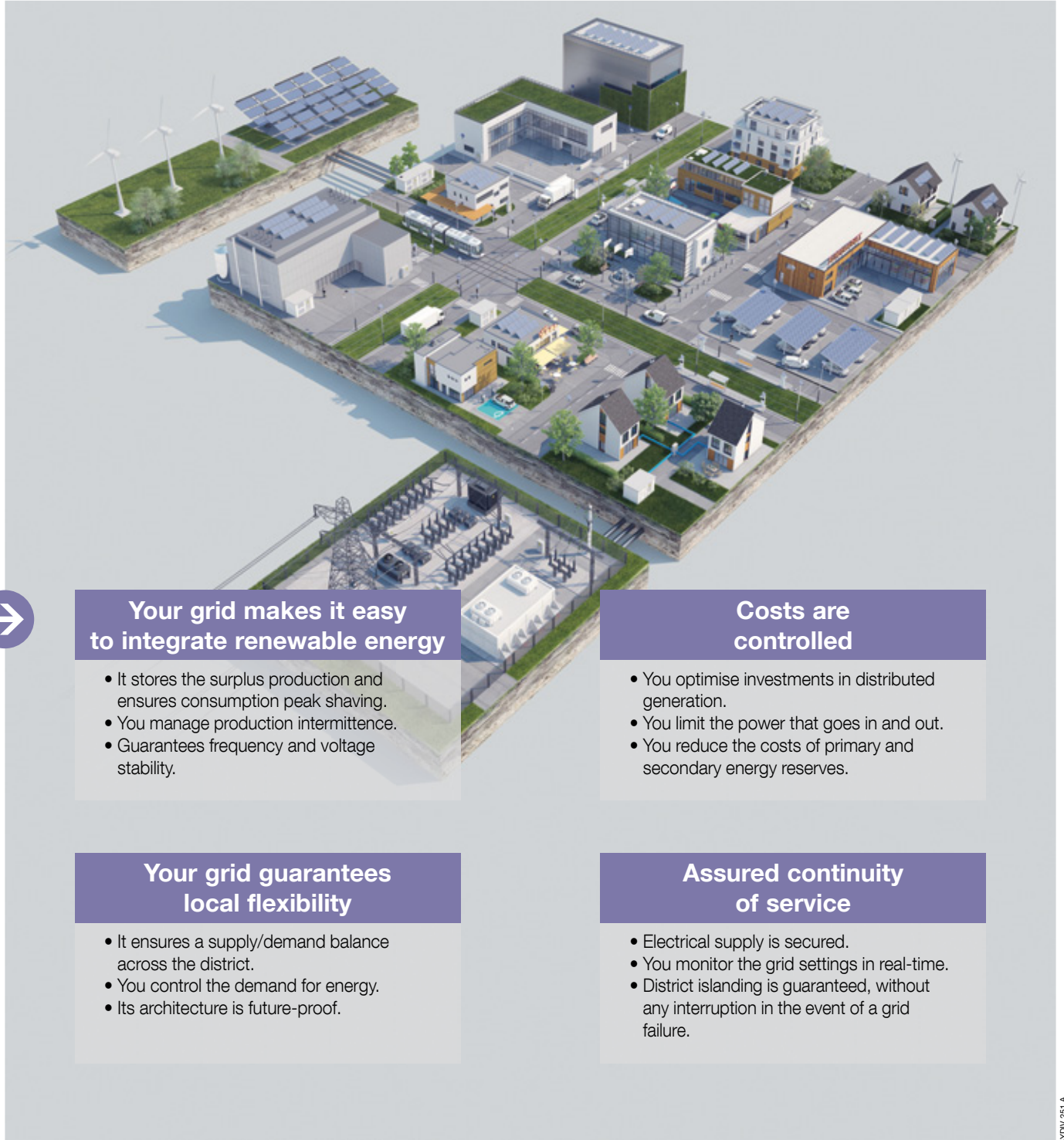
- You reduce energy consumption in public buildings.
- You have smart control over public lighting.
- You develop a sustainable transportation policy.

Optimise your energy budget

- You reduce the burden of energy bills on the community.
- You promote the most efficient electricity service.
- You help reduce taxes.

For a network that's flexible and secure

The large scale integration of decentralized renewable energy sources into electrical grids at a localised level is a key step in bringing the distribution of renewable energy production closer to consumers. The Smart Grid is the right response to guarantee electricity supply at a reasonable cost to society.



Your grid makes it easy to integrate renewable energy

- It stores the surplus production and ensures consumption peak shaving.
- You manage production intermittence.
- Guarantees frequency and voltage stability.

Costs are controlled

- You optimise investments in distributed generation.
- You limit the power that goes in and out.
- You reduce the costs of primary and secondary energy reserves.

Your grid guarantees local flexibility

- It ensures a supply/demand balance across the district.
- You control the demand for energy.
- Its architecture is future-proof.

Assured continuity of service

- Electrical supply is secured.
- You monitor the grid settings in real-time.
- District islanding is guaranteed, without any interruption in the event of a grid failure.



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Storage for integrating renewable energy and islanding, a proven reality



© NICE GRID

Easy to use, this 33-kW storage container is installed on the low-voltage network.



© NICE GRID

The city of Nice on the Côte d'Azur has put energy control at the heart of its regional planning policies.

In Carros, the NICE GRID project provides various stakeholders with the means to massively integrate renewable energy and ensure optimal energy management.

The challenges of the project

- Maximise photovoltaic production to the local grid using all the roof surfaces available.
- Minimise investments in infrastructure.
- Ensure a continuity of service, even if the main grid fails.

Socomec's smart energy storage management solutions are key to the innovative system implemented in the NICE GRID project. During the day, the surplus photovoltaic production is stored in batteries. The available energy allows you to increase the flexibility of the grid and overcome any interruptions in supply.

Across the district, the Socomec storage converter allows islanding or the creation of a Microgrid.

Nice Grid: some figures

- Budget: €30 M
- Project duration: 4 years
- 2,500 smart electricity meters
- 2.5 MWc of PV power
- 2 MW storage capacity
- Load shedding capacity: 3 MW
- Location: Carros – Nice, France





© SOREA

Paradise, a smart network **for the local community**



© SOREA

The smart grid takes into account those buildings which sometimes feed in power, sometimes extract it.

The brainchild of CEA INÉS*, the Paradise project** rethinks the evolution of an electrical grid with a fully distributed approach: it gives us the option of managing the intelligence of the grid at municipal and intermunicipal level with the notion of electricity clusters.

This approach allows us to cope better with the new challenges:

- More and more buildings are either producers or consumers of energy;
- The electrical grid must take into account mobile energy consumers, such as electric vehicles.

The challenges of the project

- Define a new grid architecture to support the massive integration of distributed renewable energy and electric vehicles.
- Model the production, storage and control of an electrical grid across the community: the electricity cluster.
- Propose technical solutions to achieve clusters using the potential of electronic power and information technology.

Socomec solutions are at the heart of the electricity cluster concept. This innovation offers storage converters that incorporate the cluster control elements and have defined rules of conduct to ensure the stability and interoperability of the clusters.

* National Institute of Solar Energy.

** Photovoltaics grid integration with distributed storage.

Paradise** in figures

- Budget of €7.5 M
- Consortium of 7 partners
- Project duration: 4 years
- Deliverables:
 - Converter control strategy
 - SOREA grid technical/economic assessment
- Location: Rhône-Alpes





CORPO 438 A

Solenbat optimises the active energy efficiency of buildings



APPLI 744 A

The Smart Building is controlled by an energy information system (EIS). The data is displayed on screens placed at various locations in the building.

Solenbat in figures

- Budget: €4 M
- Consortium of 7 partners
- Project duration: 3 years
- 4 demonstrators: 2 in residential and 2 in commercial sector, 2 new and 2 under renovation
- Socomec's new office building: 50 kWp of photovoltaic production, 70 kWh of storage in Li-ion batteries, islanding of the building
- Old commercial building: 30 kWp of photovoltaic production, 32 kWh of storage in lead batteries
- Location: Alsace



The Solenbat project aims to maximise the capacity of a building to become an energy provider. Studies and experiments focus on reducing consumption, local PV electricity production, energy storage and smart management of the exchange of electricity with the public grid.

The challenges of the project

- Measure and analyse energy consumption, in accordance with the five uses of L2 Building Regulations.
- Maximise photovoltaic production and self-sufficiency from the renewable energy produced by Smart Buildings.
- Optimise the electrical flow exchanged with the grid according to fluctuations in the price of electricity.
- Define technical solutions and economical optimisation models that are easy to reproduce.

Socomec energy storage solutions have been used in the four demonstrators of the Solenbat project.

Developed under this project, Socomec's new industrial and logistics centre automatically adjusts its production and energy consumption according to outside weather conditions (current or forecast) and to the number of people on the premises (week, weekends, number of occupants...), while maintaining the thermal comfort of the occupants.

Smart Solutions



A specialist in energy performance, Socomec offers innovative equipment for the smart management of buildings, electrical grids and districts.



**Measure and monitor
electrical installations**



Complete energy efficiency solutions

- Metering
- Energy measuring and monitoring
- Analyses
- Data centralisation and communication
- Software solutions and cloud storage

Latest innovation:

Multi-circuit plug & play measurement and monitoring system

The DIRIS Digiware system has revolutionised the world of measuring:

- Highly flexible installations
- Easy connection and wiring
- High measuring accuracy



Store energy



Power conversion and storage system

SUNSYS PCS² two-way converters and their innovative control systems follow a load and discharge profile to suit your needs.

- From 33 kW up to several MW
- High performance: maximum efficiency of 98%
- Flexibility with a modular rack solution
- Compatible with multiple battery solutions
- Quick and secure maintenance

Services

Socomec technicians, engineers, project managers and consultants are striving to maximise the availability and performance of your low-voltage installation for its entire lifecycle.



→ A strong partner



APPLI 571 A



SITE 588 A



CORPO 288 A

On-site intervention management

- 55,000 service operations per year (mainly preventive visits)
- 99.3% Service Level Agreement compliance rate
- 94% first-time fix rate

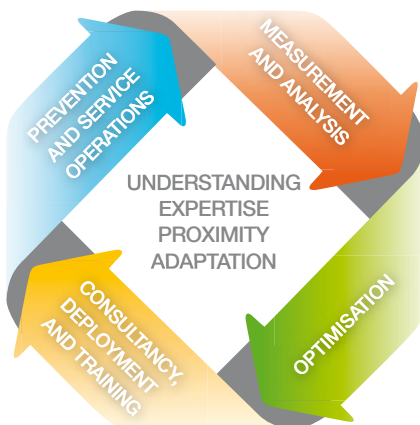
Technical hotline network

- 20+ local languages spoken in Socomec technical call centres
- 3 advanced technical support centres
- 90,000+ incoming calls handled per year

3,500 hours of technical training per year

- Products
- Methodology
- Safety

→ Choose your solution



SYDNY 184 B GB



Consultancy, deployment and training

- Technical support and advice
- Commissioning and onsite testing
- Training



Prevention and intervention

- Preventative maintenance
- 24/7 on-call service – response time guaranteed
- LINK-UPS remote monitoring service
- Replacement of consumable parts
- Battery service
- UPS rental
- Multi-brand support



Measurement and analysis

- Power quality audit (PQA)
- Thermal imaging
- Energy efficiency assessment



Optimisation

- Continuous improvement approach
- Product renewal
- End-of-life management

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