

The Brunata logo graphic consists of four overlapping circles in a diamond arrangement: a green circle at the top, a blue circle at the bottom, a red circle on the left, and an orange circle on the right. These circles are connected by thin white lines that form a larger diamond shape. The background is a photograph of a city skyline with a prominent glass skyscraper on the left and a park with green trees in the foreground.

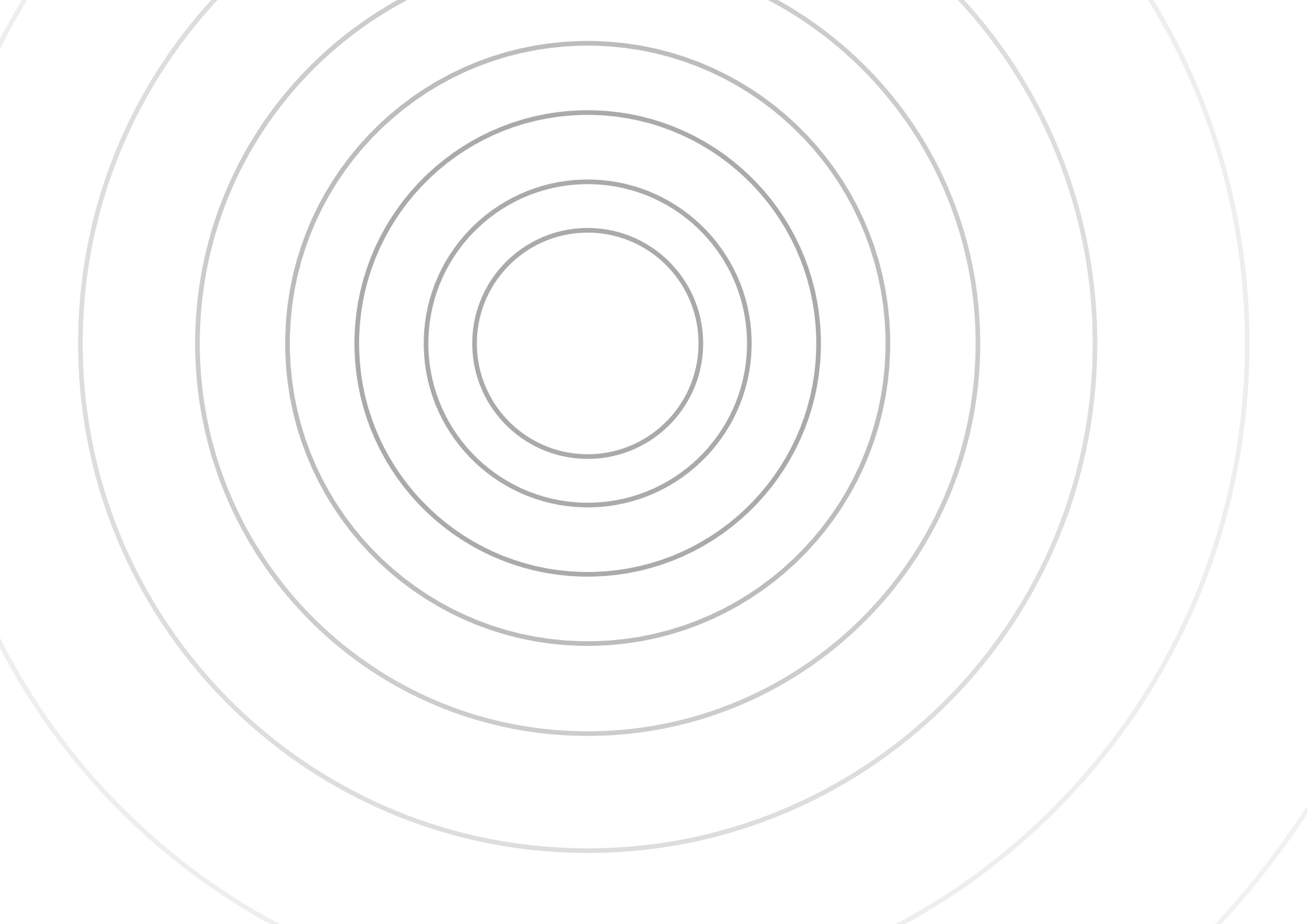
Industry

City

Community

Living

Brunata.One
Connecting solutions
for a connected world.



Index

The Brunata-Minol-ZENNER Group	4
Who we are	6
Brunata.One solutions	8
Brunata.One solution overview.....	10
Brunata.One City	12
Brunata.One Living	14
Brunata.One Industry	16
Brunata.One Community	18
Smart Mobility	22
Smart Building	30
Smart City	44

The Brunata-Minol-ZENNER Group: Here's what we do

Our roots can be traced back over 100 years and began with the development of devices for recording energy consumption.

Since then, we have perfected our knowledge of different energy forms, their measurement, the recording and evaluation of building data and all services based on this.

This journey has been marked by many pioneering inventions and patents, and our efforts are undiminished in pursuing this story packed with unfettered innovation and technological leadership.

We are a global player, boasting a workforce of around 3,900 employees all over the world, active with local part-

ners in over 60 subsidiaries in over 100 countries around the globe.

Using open standards, digital platforms and services, we provide smart answers to contemporary challenges faced by the housing industry, public utilities, municipalities and cities, industry and private end users.

Our solution portfolio encompasses both complete end-to-end solutions and all the modules contained therein in this case, from hardware and software to the services based on these.

IoT-pioneer and solution innovator

We make classic technology sectors intelligent connecting them to each other and enabling technological solutions in those areas where they previously did not exist.



Who we are

The Brunata-Minol-ZENNER Group is based on three enterprises, each with a different history.

Brunata

is a co-inventor of heat billing and an international service provider with its headquarters in Denmark and subsidiaries in other parts of Europe.



connect classical technologies with new communication possibilities, enabling smarter solutions that offer increasing levels of intelligence and possibilities to the customers

ZENNER

produces and markets measurement technology for global markets. The main target groups are energy providers and municipalities.



Innovative Start-Up & Spin-Offs



LPDG is your partner for consulting services in the areas of business intelligence and analytics (BI+A), digital transformation and system integration.



ZENNER Hessware GmbH is specialized on the development of embedded Linux systems. It offers IoT solutions based on LoRaWAN Technology for utility companies, public services and municipalities.



Minol ZENNER Connect is one of the largest LoRaWAN network operators for all your IoT applications in Germany.



Einhundert Energie provides solutions for leaseholder electricity, installing and operating photovoltaic systems in combination with digital metering technology for electricity, water and heating.



GP JOULE CONNECT is part of the GP JOULE Group and bundles a 360-degree offer associated with the core e-mobility, charging infrastructure and sharing products.



Whether Smart City or Industry 4.0, ZENNER IoT Solutions develops IoT solutions that transcend business sectors. The ELEMENT IoT open technology platform enables implementation of every conceivable IoT application scenario or expansion of dedicated LoRaWAN networks.



SmartMakers offers a broad range of IoT solutions for industry customers. A core competence is up to date IoT asset tracking technology.



Sycous is a UK-based provider of cloud-based billing and prepayment software solutions.



Sykosch AG develops cloud computing solutions for companies in the housing and real estate industry.



Brunata AG is a Swiss IoT specialist with intelligent global solutions for energy providers, public utilities, metering service providers, industrial enterprises and municipalities.



Minol Energie is the first provider of natural gas in Germany specialising in the housing industry on a federal level.



The Aktiver EMT GmbH offers digital solutions within the regulatory frame of energy supply. Your ISMS complies with all requirements of ISO 27.001 and the SM -PKI. This way you will comply with all topics of the BMWi and BSI agenda.

The diagram features a dark gray background with five concentric white circles. On the right side, three colored circles are arranged in a curved path: a green circle at the top labeled 'Industry', a red circle below it labeled 'Living', and an orange circle at the bottom labeled 'Community'.

Brunata.One Solution World

Brunata.One provides tailored Smart City, Smart Building and Smart Mobility solutions for four different segments and target groups.



City



City

Brunata.One City:

Perfectly coordinated end-to-end solutions for public utilities, municipalities and cities.



Living

Brunata.One Living:

A comprehensive portfolio for the management and administration of properties and, also, lessees and condominium community home owners.



Industry

Brunata.One Industry:

Special solutions and applications for business & industry from the areas of IoT, analytics/business intelligence and mobility.



Community

Brunata.One Community:

The complete range of modules that enable the drafting of even IoT use cases or testing of business applications before major IoT projects are commissioned.



Smart Mobility



Smart Building

	E-Mobility Expert Talk	E-Mobility Sketch	Funding consultation	Subsidy management	Profitability and feasibility analysis	Fleet management	Sharing	Charging infrastructure	Operation, service, maintenance of charging infrastructure	Charging station occupancy monitoring	Charging station analytics	CLS-connected charge point operator	CLS management / Active EMP	Energy provider data service – trusted data	Parking monitoring	Traffic Counting	Heating and utility billing	Integrated billing	Utility billing software for private customers	Information on consumption during the year: eMonitoring	Information on consumption during the year: Cloud2Cloud	Energy certificates	Drinking water analysis (Legionella testing)	Full smoke detector service	Oil level	Leakage	Boiler room monitoring	Fire doors	Room temperature & humidity	Garage door monitoring	Parking monitoring	Smart Energy Efficiency	Smart Building	Medicine cabinets	Refrigeration unit monitoring		
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	●	●	●	●	
	●	●	●	●	●	●	●	●	●	●	●				●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	●	●	●	●	
																●																		●	●	●	●



Smart Building



Smart City

Monitoring disinfection	Motion Detection	Indoor Climate Monitoring	Legionella Surveillance	Door and Window Monitoring	Temperature Monitoring of District Heating	dB-monitoring of Toilets	Push-button Messages	People Counting	Smart sub-metering	Multiple meter reading	Home e-mobility charging bundle	Home e-mobility charging with billing bundle	E-bikes	Plug & play solar system	LoRaWAN network operation	LoRaWAN network planning	Network management & hosting	Gateway management	Control & actuation as active EMP	Smart Water	Smart Water: Water quality	Smart Parking	Smart Waste	Manhole pit readouts	Monitoring of local network transformer stations	Smart Lighting	Tracking	Temporary power distributor	Swimming Pool Operation	Smart School	Measurement of road temperature	Distance Measurement	Smart Construction Site	Equipment usage	Smart Prepayment
●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	●	●	●	●	●				●	●	●	●	●	●																		●	●		
●	●	●	●	●		●	●	●							●	●	●	●	●			●	●	●	●	●	●	●	●	●		●	●	●	
●	●	●		●			●								●	●	●	●	●			●	●	●			●	●						●	

The smart #1 for everything.

We make cities smarter.

Perfectly coordinated end-to-end solutions for public utilities, municipalities and cities.



We make cities smarter.

Our Brunata.One City solutions and applications allow cities, public utilities and municipalities to construct digital infrastructures with ease and create added value for residents and customers.

Coupled with intelligent measurement and the latest communication technology, our holistic IoT solutions enable the achievement of innovative end-to-end solutions for energy suppliers and public utilities.

Application scenarios are to be found in Smart Mobility, the Smart City and Smart Building and range from composite selection through e-mobility and sharing to intelligent street lighting.



The smart #1 for everything.

We make living smarter.

A comprehensive portfolio for the management of properties and, also, lessees and condominium community home owners.

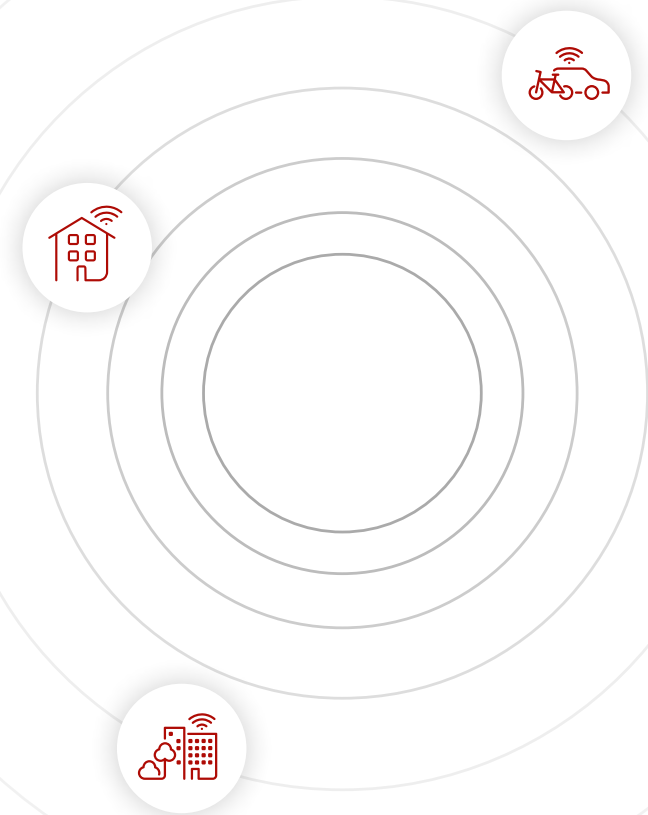


We make living smarter.

All solutions and applications in Brunata.One Living make living in residential buildings or districts more comfortable, efficient, safe and sustainable and ease the workload on owners, administrators and lessors.

Digital services, platforms, apps and the latest measurement and IoT services enable the digital administration of real estate that integrates seamlessly in your processes. Integration of modern mobility solutions such as sharing and e-mobility prepare living spaces to embrace the future.

We provide a tailored set of solutions for residents and private ownersfor the smart living of tomorrow.



The smart #1 for everything.

We make production & logistics smarter.

Special solutions and applications for
business & industry from the areas
of IoT, analytics and business
intelligence and mobility



We make working environments smarter.

Whether you are electrifying your fleet, making sites intelligent or simply wish to track important assets, Brunata.One Industry is a digital kit for very special industrial, business and logistical solutions.

All modules can be combined without difficulty with other solutions from Brunata.One Building, Brunata.One City and Brunata.One Community.





The smart #1 for everything.

We make development & exchange smarter.

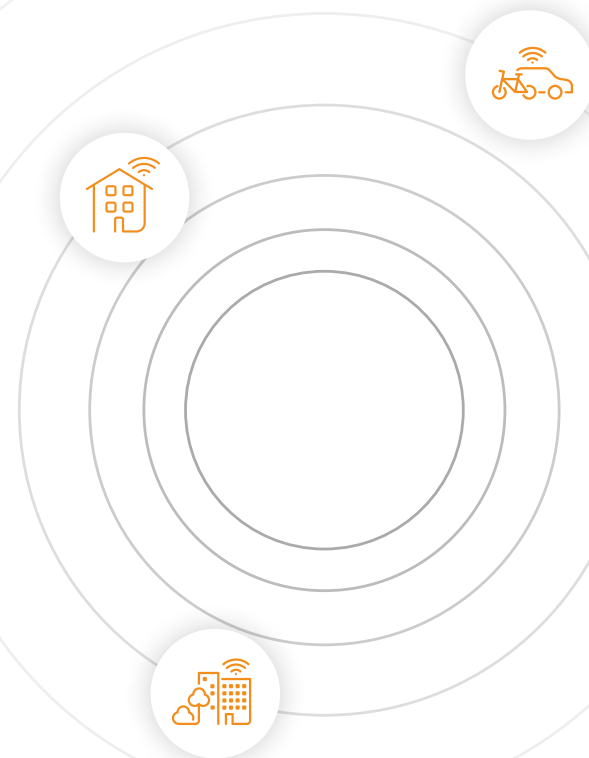
The complete range of modules that enable the drafting of even IoT use cases or testing of business applications before major IoT projects are commissioned.

Smarter together.

Brunata.One Community is, on the one hand, the playing field for anyone exploring the IoT for the first time and wanting to try things out.

IoT professionals can also find the modules here to develop and implement their own applications and share their experience with others.

Brunata.One Community lives from this sense of togetherness and the interest each individual member has in the IoT. Together, we promote digitisation in public spaces, in education and medium-sized businesses, in buildings and urban communities and establish the appropriate infrastructure.



Your first step towards a bright future

Brunata.One provides solutions for the latest hot topics relating to the areas of Smart Mobility, Smart Building and Smart City.

From IoT solutions for maintaining ambient conditions in refrigerators to a comprehensive concept regarding fleet management. We are ready to aid you through your project or individual application case. Whatever your need, we are ready to help.

If despite the variety of solutions we offer, you still believe the right one for you hasn't yet been included, then please feel free to talk with us. Our team is eager to help you find new and individually adapted implementation options. You can contact us at brunata.one/contact





Smart Mobility



Intelligent solutions for e-mobility and sharing. Solutions range from subsidy management and funding consultation to charging station analytics and traffic counting.

Read more on page 22-29



Smart Building



Innovative solutions for intelligent buildings with real added value. Solutions range from heating and utility billing to smoke detector service and boiler room monitoring.

Read more on page 30-43



Smart City



Sustainable and ecological management of the urban living space. Solutions range from LoRa-WAN network planning and operation to Smart Parking and Smart Lighting.

Read more on page 44-51





Smart Mobility

Intelligent solutions for e-mobility and sharing are brought to life with Brunata.One.



	Hardware	Software	Installation	Business	Service	Consulting	Premium-Option
Consulting	E-Mobility Expert Talk				●	●	
	E-Mobility Sketch				●	●	
	Funding consultation				●	●	
	Subsidy management				●	●	
	Profitability and feasibility analysis				●	●	
Full-service	Fleet Management	●	●	●	●	●	
	Sharing	●	●	●	●	●	
	Charging infrastructure	●	●	●		●	
	Operation, service, maintenance of the charging	●	●	●	●		
	Charging station occupancy monitoring	●	●	●			●
	Charging station analytics		●				●
Add-on's	CLS-connected charge point operator		●		●		●
	CLS management / Active EMP		●		●		●
	Energy provider data service – trusted data				●		●
IoT solutions	Parking monitoring	●	●	●/-	●	●/-	
	Traffic Counting	●	●	●	●	●	



E-Mobility Expert Talk

Our E-Mobility Expert Talk consulting module is the speedy, uncomplicated way to obtain efficient advice on the following issues:

- Charging stations infrastructure
- Charge, load and energy management
- Energy systems
- Operator model mobility and sharing solutions
- Fleet electrification
- Legal issues
- Subsidies and the political framework

E-Mobility Expert Talk also ensures that you receive complete documentation of results on completion.



E-Mobility Sketch

We examine a specific project or an implementation idea in detail with you in an interactive digital workshop. Tools such as the 4-field matrix and e-canvas model specially developed for this purpose provide support during structured reappraisal of the prerequisite and challenges. In addition, you will benefit from a direct knowledge transfer from our experts. Each E-Mobility Sketch includes a complete management summary and compact recommendation for action which you receive on completion.



Funding consultation

We provide you with comprehensive online advice regarding local, regional, national, and overarching subsidies for your planned project. Based on current regulations and funding sources, we discuss all available funding and any combination options with you, then make a specific recommendation.



Subsidy management

Complete one-stop subsidy management. We help you to identify the best funding options for your project and aid you every step of your way.

Choose whether we should only provide your own experts with our energetic support during the complete application process, or if we should take care of all negotiations during the entire application process, including calculation of the funding required and additional demands in a comprehensive carefree package.



Profitability and feasibility analysis

We check the profitability and feasibility of a specific project for you. With your assistance, we develop a comprehensive, goal-oriented concept that encompasses every issue of importance to you. You then receive the complete concept with a comprehensive list of action recommendations for implementation.



Fleet management

When it comes to electrification of your vehicle pool or fleet, we analyse your mobility needs, create a comprehensive concept for you based on this and implement it on your behalf. From creation of the complete mobility strategy to maintenance and management.



Sharing

Complete one-stop sharing for e-cars and e-bikes.

Our full service offers encompass a concept tailored to your individual needs and complete implementation, including the charging infrastructure, vehicles, operation, billing, maintenance and servicing. Our management portal and the associated app make the complete process from booking and starting the journey to return extremely easy for all users.



Charging infrastructure

We undertake technical development and planning of the charging infrastructure based on your requirements and conditions governing your technical installations. The result is a future-proof solution perfectly adapted to your needs and including energy, charging and load management.

After this, we take care of on-site installation and commissioning guaranteed to conform to VDE standards. The VDE is the German Association for Electrical, Electronic & Information Technologies.



Operation, service, maintenance of the charging infrastructure

Completely carefree operation: We integrate your charging infrastructure in our high-availability IT landscape and ensure continuous technical support and operation of the charging solution. Naturally enough, this also includes all legally required maintenance and inspections. Our support team is at your disposal at all times should any questions arise.



Charging station occupancy monitoring

Charging management platforms provide information concerning which charging stations are charging at any given time or whether the charging process was completed. However, they cannot answer the question of whether the charging station could also be free for the next vehicle and available. Our IoT-based solution enables monitoring for this purpose and combines intelligent

car park sensors with appropriate visualisation. This means that both parking offenders and long-term parkers can be identified.

We offer this solution as both a full service including complete project management and a plug&play solution for which we supply you with all required components.



Charging station analytics

The analytical tool for charging infrastructure: Our solution is based on analytics and automatically assesses utilisation of charging infrastructures. This provides a basis for exploitation of the economic potential and calculation of the perfect utilisation rate, enabling the targeted development or even dismantling of charging infrastructures and efficiently streamlined operation.



CLS-connected charge point operator

Our technology transforms your charging stations into controllable local system (CLS) components and can be controlled to benefit the network and conform to regulations. Our technology, which is compatible with the smart meter gateways of different manufacturers, is simply integrated for this purpose in your existing IT infrastructure and process chain.

We take control of management of the charging infrastructure and ensure that operation conforms to regulations and benefits the network.

As a CLS-connected charge point operator, we meet the requirements of Section 14a of the German Energy Act (§14a EnWG) and benefit from the advantages of reduced network charges.



CLS management / active EMP

Active EMP (external market partner): We harmonise the energy supply regulatory framework with digitisation options through our solution.

The complete charging infrastructure can be activated and managed via the smart meter gateway CLS interface. Our hardware and software solution package enables you to assume the regulated market role of an active EMP without requiring personal certification for this purpose.

Compatibility with all certified smart meter gateways is assured through our operating processes in a manner analogous to the smart metering public key infrastructure (SM-PKI) of the German Federal Office for Information Security (BSI).



Energy provider data service – trusted data

With our LoRaWAN-capable CLS-technology we provide the digital infrastructure of modern power nets not only for the transport of measurement data, but moreover we offer the possibility to use the smart meter gateway as a center of confidence for the transport of data –for your own data as well as a data service for third parties.



Value-added services: Parking monitoring

Continuous monitoring of parking space occupancy in garages, underground garages and parking spaces by IoT sensors with remote transmission:

- Optimising of parking space usage through systematic evaluation of user behaviour.
- You can exploit additional parking usage potential over the course of the day, week, month or year.
- Create usage statistics for resident and visitor parking spaces, including spaces with e-charging stations.
- Determine new leasing and sharing options for parking spaces based on usage.
- Automated alarm function



Traffic Counting

Understand traffic levels without expensive standalone solutions, or manual ad-hoc counts. You will be able to identify the location and timing of traffic to make intelligent decisions across about traffic and traffic calming in cities and other locations.





Smart Building

Innovative solutions for intelligent buildings
with real added value



Smart Building

	Hardware	Software	Installation	Business	Service	Consulting	Premium-Option
Full Service	Heating and utility billing	●	●	●	●	●	
	Integrated Billing		●	●	●	●	
	Billing of operation cost for private customers	●		●			
	Information on consumption during the year: eMonitoring	●		●			
	Information on consumption during the year: Cloud2Cloud	●		●		●	
	Energy certificates				●	●	
	Drinking water analysis (Legionella testing)				●	●	
IoT solutions	Full service smoke detector	●	●	●	●	●	
	Oil level	●	●	●			
	Leakage	●	●	●/-	●	●/-	
	Boiler room monitoring	●	●	●/-	●	●/-	
	Fire doors	●	●	●/-	●	●/-	
	Room temperature & humidity	●	●	●/-	●	●/-	
	Garage door monitoring	●	●	●/-	●	●/-	
	Parking monitoring	●	●	●/-	●	●/-	

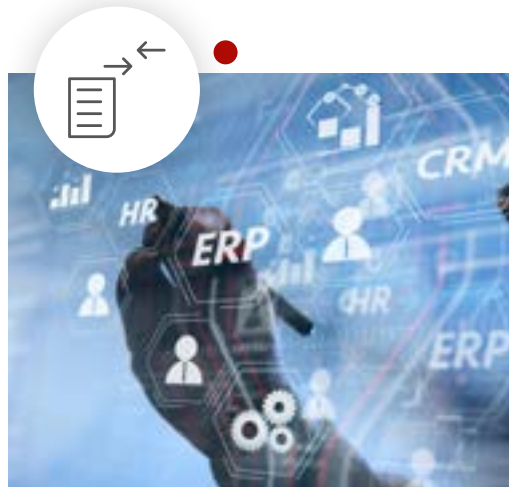


	Hardware	Software	Installation	Business	Service	Consulting	Premium-Option
IoT solutions	Smart Energy Efficiency		●		●	●	
	Smart Building	●	●	●	●	●	
	Medicine cabinets	●	●	●/-	●	●/-	
	Refrigeration unit monitoring	●	●	●/-	●	●/-	
	Monitoring disinfection	●	●	●			
	Motion Detection	●	●	●	●		
	Indoor Climate Monitoring	●	●	●	●		
	Hot water surveillance (Legionella)	●	●	●	●		
	Door and Window Monitoring	●	●	●	●		
	Temperature Monitoring of District Heating	●	●	●	●		
	dB-monitoring of Toilets		●	●	●		
	Push-button Messages	●	●	●	●		
	People Counting	●	●	●			
Smart Devices	Smart sub-metering	●	●				
	Multiple meter reading	●	●				
Solutions for private customers	E-mobility bundle: Charging at home	●	●		(●)		
	E-mobility bundle incl. billing: Charging at home	●	●		(●)		
	E-bikes	●					
	Plug & play solar energy panel	●					



Heating and utility billing

Legally compliant heating bills of the highest quality: Our experts ensure that all deadlines and legal requirements are strictly adhered to. Certified processes and our quality management ensure a high-quality product and enhanced reliability



Integrated Billing

Billing of heating and utility costs seamlessly integrated in your system and process landscape:

- Reduction of manual tasks and optimising of processes through data exchange
- Integration of billing for heating costs in the utility bill
- Enhanced transparency and data quality in the annual utility bill, thanks to tested procedures and content
- Improved processing times, thanks to production management and control
- Use of proven standards in the data exchange process



Utility billing software for private customers

Our platform-based software developed especially for private customers makes utility billing easier than ever before:

- Assisted utility billing including property ancillary costs and VAT statement
- Intuitive user interface
- Full integration in our other systems with automated transmission of all property data, billing periods, usage units, users, basic data on the heating system, equipment and meters

- Complete integration of heating billing saves you time during billing of ancillary costs and means you receive a complete legally compliant product from a single source

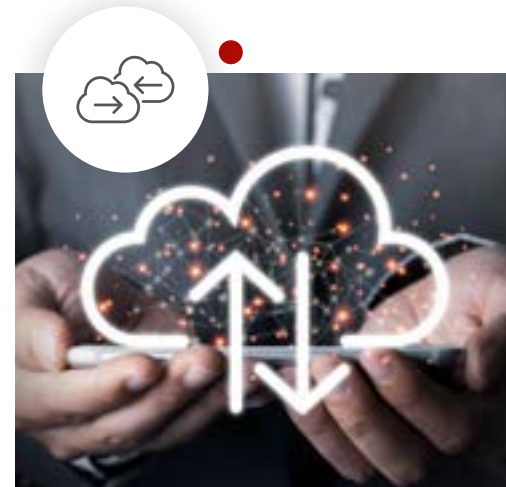


Energy Monitoring

Our portal and app solution means that lessors and administrators, lessees and condominium community residents have an overview of their consumption at all times:

- Legally compliant comparison options and benchmarks
- Portfolio selection according to property structure criteria
- Individual filter and selection options
- Weather adjustment

- Analytical tool for identification of homes with conspicuous consumption
- For lessees: Comparison of own consumption with average consumption in the property per m², filter options for development trend



Information on consumption during the year: Cloud2Cloud

Smart data service: Our Cloud2Cloud data transfer solution enables the transmission of data on consumption during the year as a data service to other platforms and apps via appropriate application programming interfaces (API).



Energy Certificates

Our portfolio encompasses both consumption and needs-based energy certificates which we can also provide completely digitally:

- Needs-based energy certificates with on-site recording by certified experts.
- Dedicated energy consultants.
- Inspection of indicated data for completeness and plausibility.
- Digital archiving of energy certificates for 10 years.



Legionella Testing

We conduct our drinking water analysis together with leading accredited laboratories:

- Cooled, timely transportation of samples to the laboratory within 24 hours
- Transmission of analysis results to you
- Automatic transmission of data to the health authority if the technical action value is exceeded
- Optional compilation of a risk analysis including action plan and success monitoring
- Online documentation
- Archiving of results for ten years



Full smoke detector service

Our smoke detectors were developed especially for the housing industry and, consequently, are ideally suited to requirements in private dwellings or premises used for similar purposes (e.g. lawyer's offices and medical practices). A flat, modern design ensures that they are only noticeable when they really need to be. The service encompasses clean installation in compliance with standards and national specifications by certified service personnel, automated radio remote inspection including digital documentation of results and equipment rental and maintenance.



Oil level

Filling level of heating oil tanks at the push of a button:

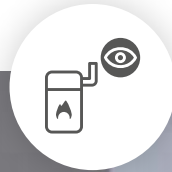
- Reliable determining of filling levels through state-of-the-art sensors with remote transmission.
- Continuous information on heating oil levels, including of several buildings, enable the improvement of collective orders with clear cost advantages for suppliers.
- Check refuelling remotely
- Automated alarm function with configurable criteria and intervals



Leakage

Reliable monitoring of rooms for possible water leakage:

- Continuous monitoring enables early detection of possible leaks and timely intervention, both on site and by appropriate service providers.
- Early detection 24/7 provides protection against damage.
- Automated alarm function with configurable criteria and intervals.



Boiler room monitoring

Reliable monitoring of conditions in the boiler room, including for several buildings:

- Monitoring of CO₂ content, temperature, humidity, brightness, fire door opening status
- Remote safety inspection without on-site presence
- Conclusions drawn from proactive maintenance intervals
- Status log for service partners.
- Automated alarm function with configurable criteria and intervals
- Weather adjustment
- Analytical tool for identification of homes with conspicuous consumption
- For lessees: Comparison of own consumption with average consumption in the property per m², filter options for development trend



Fire doors

Reliable monitoring of status of fire doors by IoT sensors with remote transmission instead of regular manual inspections:

- Insurance premium reductions may be achieved through automated status monitoring of fire doors, depending on the insurer involved.
- Automated documentation of opening and closing procedures
- Automated alarm function (e.g. if doors are permanently opened)



Smart Building



Room temperature & humidity

Monitoring of minimum and maximum temperatures and humidity in rooms to protect the building envelope.

- Enables early detection of continuously excessive humidity or temperatures that are too high or low and timely intervention, both on site and by appropriate service providers.
- Early detection 24/7 provides protection against damage
- Automated alarm function with configurable criteria and intervals



Garage door monitoring

Reliable monitoring of status of garage doors by IoT sensors with remote transmission:

- Permanent monitoring of opening and closing procedures enable early detection of potential malfunctions
- Helps to avoid doors being left open unintentionally, particularly at night, and reduces the risk of theft and vandalism.
- Enables the optimising of opening times to relieve the stress on motors and the mechanism.
- Status log for forwarding to service partners.



Parking monitoring

Continuous monitoring of parking space occupancy in garages, underground garages and parking spaces by IoT sensors with remote transmission:

- Optimising of parking space usage through systematic evaluation of user behaviour.
- You can exploit additional parking usage potential over the course of the day, week, month or year.

- Create usage statistics for resident and visitor parking spaces, including spaces with e-charging stations.
- Determine new leasing and sharing options for parking spaces based on usage.
- Automated alarm function



Smart Energy Efficiency

Our intelligent IoT sensors measure energy consumption in the entire building for lighting, hot water heating, air conditioning and heating. Temporary, spatial and time-related high-resolution measurements enable the achievement of considerable reductions in energy consumption and associated costs. Additional sensors for light, temperature, ventilation behaviour and room air quality complement the holistic view of usage behaviour and its interaction with various types of consumption.



Smart Building

Whether in homes, offices, schools or industrial premises – buildings use energy for heating and air conditioning, hot water heating and lighting. State-of-the-art IoT sensors enable continuous recording of all relevant building data. Visualisation and control is realised through our energy efficiency software. Limit values are monitored and switch commands are issued.

Automated alarm function: Leakages are identified in good time and expensive damage prevented.

We offer this solution as both a full service including complete project management and a plug&play solution for which we supply you with all required components.



Medicine cabinets

When it comes to medicines, ideal storage conditions regarding temperature and humidity are indispensable. Our solution combines monitoring of these factors, transmitting the data measured to our digital platform which immediately triggers an alarm if the values exceed or undershoot the predefined range. This enables you to react and intervene in an appropriately timely manner.



Refrigeration unit monitoring

Plug&play solution

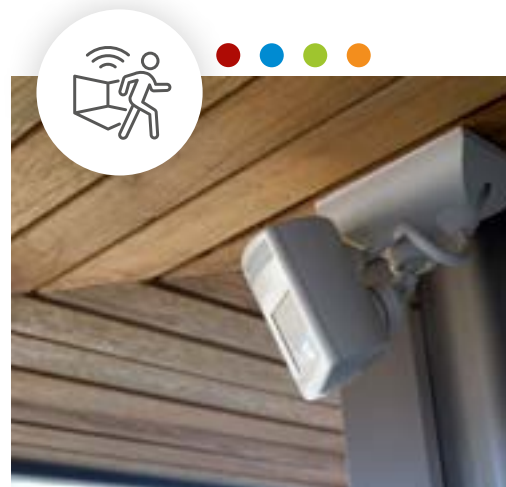
This IoT solution enables you to guarantee the maintenance of ambient conditions in cold stores and refrigeration units with ease to ensure that statutory temperatures for your foodstuffs are observed. All data is visualised and evaluated with its history on our digital platform. You are warned immediately if the temperature or humidity deviates from the prescribed tolerances.



Monitoring disinfection

Plug & play solution

Monitor the usage frequency of your self-service facilities such as dispensers, vending machines or similar, to plan their disinfection and cleaning on this basis and prevent the spread of germs. Our platform evaluates all user data and informs you of any deviations.



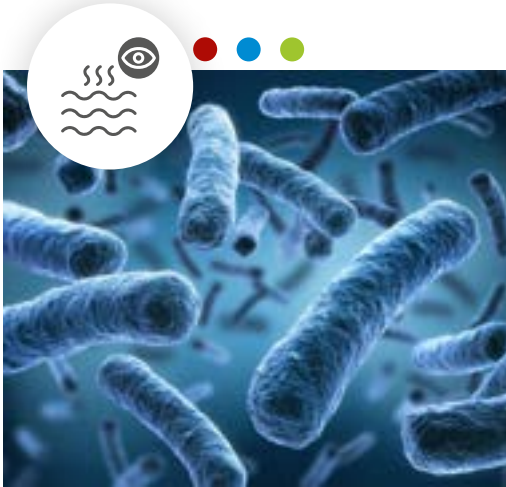
Motion Detection

Motion detection sensors can be used to monitor and alert to access areas, such as basements or storage rooms.



Indoor Climate Monitoring

Ensure a healthy indoor climate and avoid mould issues by identifying the reason for mould and to prove if mould is due to improper ventilation, or due to issues of the construction. The solution primarily measures temperature and relative humidity.



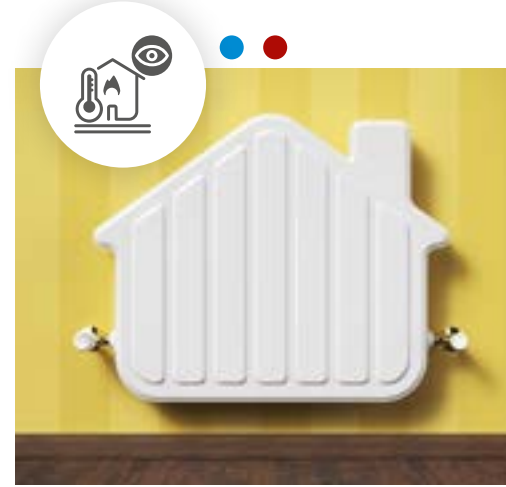
Legionella Surveillance

Reduce the risk of legionella by monitoring the temperature of the hot water circulation, with a temperature sensor and external temperature probe. You get alerted when the temperature is below 50 degrees for an extended period and there is a risk of legionella developing.



Door and Window Monitoring

Monitor doors or windows (eg fire doors) and get alerted if they are open when they should be closed. An example is a fire door that is held open, presenting a risk to fire safety should a fire or other emergency occur.



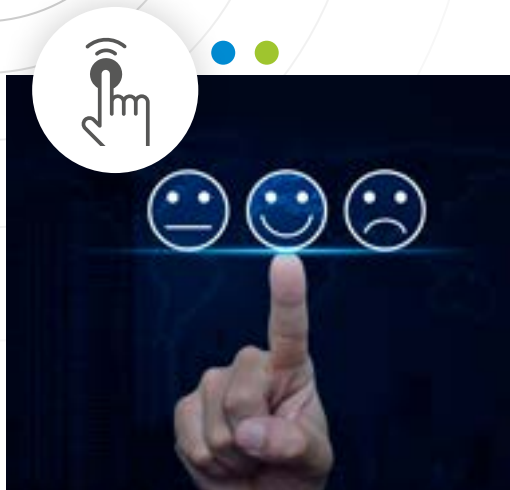
Temperature Monitoring of District Heating

Reduce the increased risk of high return temperatures on your district heating system by identifying issues before it costs the residents, or incurs a penalty. You can also identify the main reason and address through maintenance or changing resident behaviours.



dB-monitoring of Toilets

Reduce the risk of excessive water consumption from public toilets by monitoring the noise level when flushed and refilling. When the noise level is constant, such as overnight, this indicates a potential fault and maintenance requirement.



Push-button Messages

Get notified by users when a location requires cleaning, or a hand-sanitiser requires refilling. You define the alert you want to receive when a button is pushed so you can react quickly and effectively.



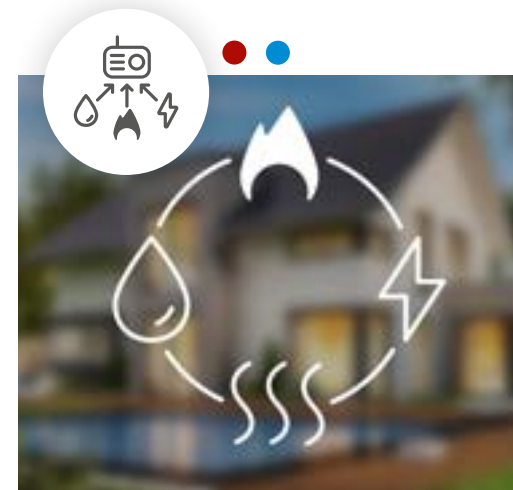
People Counting

Understand the total number of visitors and flow of people within a location by automatically monitoring as people enter or leave a location. This can ensure locations are occupied below maximum levels and understand the behaviour of people visiting a location.



Smart sub-metering

Get involved in the sub-metering market with our comprehensive IoT solution: We combine main meters for water and heating with domestic water meters and heat cost allocators. Statements for water, hot water and heating costs can also be compiled on the basis of the measured values recorded. In addition, this combination can be expanded through status data from IoT-based smoke detectors.



Multiple meter reading

Reduce your process costs by recording usage values for water, gas and heating using a single metering system. Our LoRaWAN IoT gateway can be linked to individual operators in this respect or, also, directly with a smart meter gateway via the CLS interface. In this case, all data from meters is transmitted directly via the secure CLS channel of the smart meter gateway.



Home e-mobility charging bundle

Our comprehensive solution package for the home:

- A choice of wall box or charging station
- Charging map and roaming app to facilitate charging during journeys at the 58,000 public charging stations currently available.
- Optional advance inspection
- Optional installation service
- Optional with maintenance and servicing



Home e-mobility charging with billing bundle

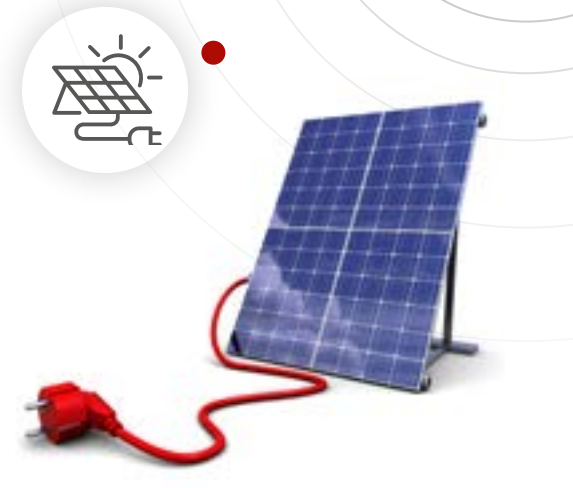
Our comprehensive solution package for the home with reliable billing:

- A choice of wall box or charging station
- Charging map and mobile roaming app to facilitate charging during journeys at the 58,000 public charging stations currently available.
- Including billing and access to our billing platform in the complete package
- Optional advance inspection, installation service, maintenance and servicing.



E-bikes

Our portfolio encompasses a choice of classic, sports or multifunctional e-bikes distinguished by robustness and a long battery life. Their high degree of reliability means that we also use them for our sharing solutions in the commercial sector. All e-bikes have intelligent support up to 25 km/h.



Plug & play solar system

Our do-it-yourself solar system offers flexible installation variants, meaning it can be used in every environment. The power generated can be fed into the grid or used by you, thus reducing your electricity costs. The package encompasses the following elements:

- Solar module
- Frequency converter
- Substructure
- Installation cable & energy meter
- Installation material





Smart City

Sustainable and ecological management
of the urban living space.



Smart City

		Hardware	Software	Installation	Business	Service	Consulting	Premium-Option
Network operation services	LoRaWAN network operation		●			●	●	
	LoRaWAN network planning		●			●	●	
	Network management & hosting		●			●	●	
	Gateway management		●			●	●	
	Control & actuation via LoRaWAN	●	●			●		●
Water management 4.0	Smart Water	●	●		●	●		
	Smart Water: Water quality	●	●	●	●	●		
	Smart Parking	●	●	●	●	●	●	
Smart City IoT-Solutions	Smart Waste	●	●	●	●	●	●	
	Manhole pit readouts	●	●	●	●	●	●	
	Monitoring of local network transformer stations	●	●	●	●	●	●	
	Smart Lighting	●	●	●	●	●	●	
	Tracking	●	●	●/-	●	●/-		
	Temporary power distributor	●	●		●			
	Swimming Pool Operation	●	●	●/-	●	●/-		
	Smart School	●	●	●/-	●	●/-		
	Measurement of road temperature	●	●	●/-	●	●/-		
	Distance Measurement	●	●	●/-	●	●/-		
	Smart Construction Site	●	●	●/-	●	●/-		
	Equipment usage	●	●	●/-	●	●/-		
	Smart Prepayment	●	●	●	●	●	●	



LoRaWAN Network operation

As one of the largest LoRaWAN® network operators, we are registered with the German Federal Network Agency (Bundesnetzagentur) and provide complete network operation for our industrial, housing and real estate customers, municipalities and energy providers. We monitor the network for outages, coverage gaps and utilisation rates and ensure that all regulatory requirements of the Federal Network Agency and the LoRa Alliance are observed.



LoRaWAN Network planning

We are more than happy to take charge of complete network planning if you wish to digitise several locations. Employing a variety of tools such as our simulation software and measurements during on-site inspections, we can accurately identify the best locations for your gateways to achieve a perfect degree of coverage.



Network management & hosting

We run through all configurations in our Network Operation Centre in Germany, ensuring that network operation is assured. Our data centre is Tier IV and certified pursuant to DIN ISO 27001 for information security management, meaning all applications and data are securely hosted in Germany.



Gateway Management

If you wish to develop your own IoT network, our support is not limited to hardware and platform solutions. We also take care of complete gateway management for you, including all continuous updating of firmware and gateway configurations through our own management system.



Control & actuation as active EMP

Our solution for the flexible actuation of generators and loads. We will enable you to take the role of the active external market partner (EMP), meeting all regulations while profiting from §14a EnWG. The role as active EMP is realized as a SaaS service on the ZENNER platform - including inventory of devices, switchpoints, energy meters, meter points as well as linking up to your gateway administrator.



Smart Water

With domestic, household and bulk water meters, our comprehensive portfolio encompasses all intelligent equipment for smart water applications. As a consequence, all measuring tasks for the supply and distribution of drinking water, wastewater management, industry or agriculture can be realised with a uniform system. Advantages:

- Precision consumption recording
- Reliable error-free transmission of data
- Analysis of consumption data and creation of forecasts
- Monitoring of consumption types
- Avoidance of network losses through smart functions such as leaking and burst pipe detection



Smart Water: Water quality

Our full-service IoT solution for water quality provides you with complete monitoring of all significant indicators:

- Water temperature
- Conductivity
- Solute oxygen
- pH value
- Potential for reduction of oxidation
- Configurable alarm signals for thresholds always inform you if significant values are exceeded.



Smart Parking

Intelligent car park sensors identify whether a parking space is free or occupied. Special user conditions such as a parent/child space, disabled parking space or a parking space for e-vehicles can be stored for each parking space in the backend system. All information can be evaluated on the associated platform and transmitted on to car park operators or private citizens to help them find unoccupied parking spaces.



Smart Waste

Our IoT-based Smart Waste solution enables the needs-based emptying of waste containers. Waste levels that can be transmitted automatically to the application platform enable the avoidance of unnecessary journeys to less frequented containers. Operating times can be optimised and costs reduced.



Manhole pit readouts

Manholes and other inaccessible locations are predestined for IoT-based meters and sensors suitable for automatic remote readouts. We install meters and sensors at these locations and read these out simply and reliably through our LoRaWAN network. This dispenses completely with manual readings and the intensive assignment of human resources associated with these. All meter data is then available subsequently on our platform for further processing.



Monitoring of local network transformer stations

Impending failures of transformer stations can be identified in good time and prevented with our full-service solution. A sensor that can monitor up to 8 potential-free contacts is installed in local network transformer stations. Any change in status results in a message being sent directly to our digital platform and, in addition, status signals are automatically triggered at regular intervals.



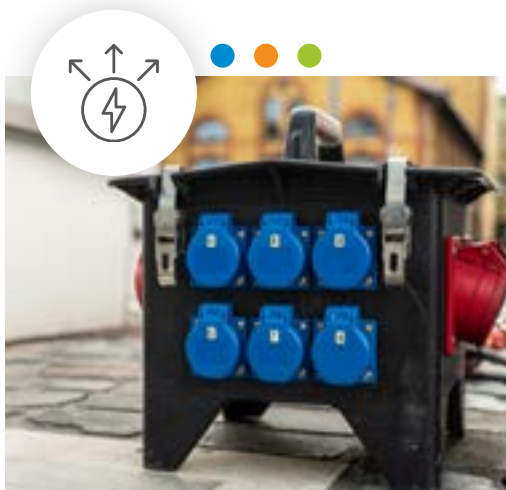
Smart Lighting

Due to its enormous consumption of energy, public street lighting is among the largest permanent cost items in the municipal budget. Our IoT-based brightness sensors ensure that even existing technology can be retrofitted and made intelligent. In combination with LoRaWAN ripple control receivers, this solution enables energy-saving control of lighting, even regarding individual light points.



Tracking

Our tracking solution enables monitoring of your equipment and goods and transmits data such as the location, condition and status of carriers, containers, pallets, tools, vehicles, or equipment. In addition to visualisation and digital reporting, geopositioning tracking and notifications are also part of this solution package.



Temporary power distributor

This IoT solution enables the rapid localisation and efficient management of power distributors, regardless of whether they are located outdoors or indoors. Our digital platform enables you to see their location at any time, and you are informed immediately as soon as a power distributor is moved away.



Swimming Pool Operation

Through its smart sensors, this IoT solution combines information on water and air temperatures and humidity and can be expanded through a module for counting visitors. All data can be illustrated on appropriate displays or even on your website.



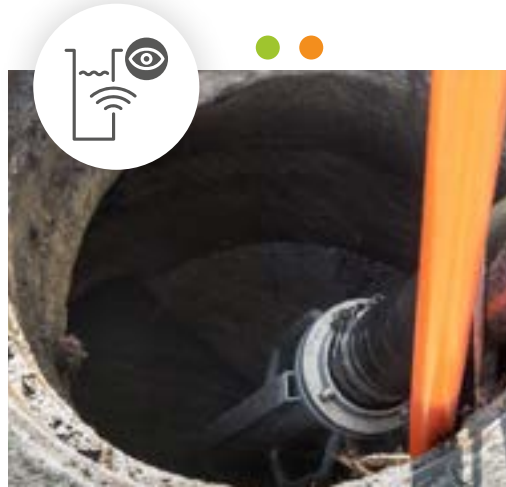
Smart School

Optimum learning environments are encouraged through perfect ambient conditions in the room: The percentage of oxygen in the air, the perfect temperature and humidity and adequate brightness impact our powers of concentration. Our IoT solution therefore combines all these functions with intelligent sensors that monitor these parameters. Our digital platform visualises all parameters and issues notifications where necessary if, for example, it is necessary to ventilate.



Measurement of road temperature

Monitor the road temperature so you can make decisions on road treatment based on real-time, localised tempera-



Distance Measurement

Monitor sewers and ducts for water levels and receive alerts when the distance between the manhole cover and the water level becomes critically low, ensuring proactive responses to potential issues.



Smart Construction Site

Intelligent meters for site water and electricity record all on-site usage and all associated regularities and irregularities. In combination with IoT, contact, GPS and motion sensors, all relevant data is transmitted to our digital platform and evaluated there. Our energy efficiency software takes charge of control and visualisation here, and comprehensive fault and alarm management in our systems informs you immediately if there is a need for action.



Smart Prepayment

Prepayment solutions for utilities (water, energy, etc) ensures your customers pay in advance and reduce debt-risk. With Smart Prepayment the prepayment model goes online: It provides the same functionality as a traditional prepayment solution, without the need for expensive hardware.

This solution works across IoT and other data technologies, including LoRaWAN, NB-IoT and MBus, to make prepayment cost effective, open, and simple. You can also develop smarter tariffs and improved controls, alongside enhanced customer engagement.



Equipment usage

Our IoT solution for energy-intensive machinery provides you with an overview of which of your devices or machines are running or being used, when and for how long. This solution can be used for both mobile and fixed machinery installations. Our digital platform takes charge of evaluation in this respect and warns you if prescribed times are not adhered to.

Contact

**You can contact us from
our contact form at
www.brunata.one**





brunata.one