

SOLAR ELECTRIC

KOSTAL

KOSTAL solar inverters – the right solution for every requirement



Smart
connections.



KOSTAL competence – using energy the smart way. Convincing

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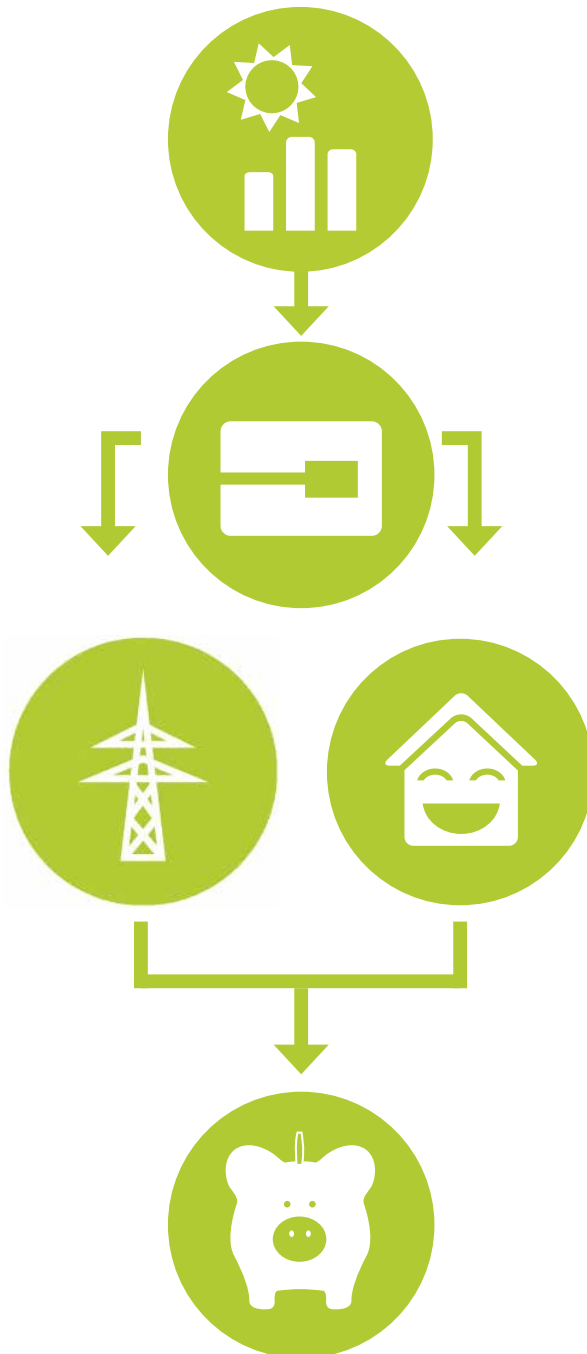
KOSTAL family – success founded on history and over 100 years of experience



- Locations, customers and partnerships around the world make KOSTAL a **global company**.
- KOSTAL adheres to the automotive supplier's **“zero-error approach”** to deliver the ultimate quality for automotive, industrial and photovoltaic products.
- KOSTAL wins over its customers with a **broad understanding of the industry**, enabling numerous **smart connections** to be made.
- In 1995, **KOSTAL Industrie Elektrik** was founded for the industrial drive technology sector. With its long tradition in power electronics and close collaboration with its customers, this company can ideally respond to the needs of the market.
- **KOSTAL Solar Electric**, founded in 2006, is a leading manufacturer of innovative string inverters and storage systems for the private and small commercial sector.
- Through all its business divisions, KOSTAL works to shape the **future** right here and now, to be a stable and secure business you can continue to rely on for many years to come.
- KOSTAL is a partner you can count on, thanks to innovative solutions, finely honed expertise in **both development and technology**, and lasting, reliable quality.
- As a 4th generation **family-owned company**, here at KOSTAL we know our roots, our capabilities, our desires, our links to each other and our customers and what is important to us: our **partnership** with you.

Why use photovoltaics?

Photovoltaics: a sustainable investment that pays off



Your reliable miniature power station for your daily electricity needs

Generate your own electricity with a photovoltaic system comprising solar modules and photovoltaic inverter components. The solar modules convert available sunlight into electrical energy, providing you with a reliable and cost-effective power supply for the next 6 billion years or so*.

PIKO inverters – the heart and brains of your PV system

The electrical energy generated by the solar modules is in direct current, which cannot be readily used in homes. That's where the PIKO inverter comes in:

- it reliably converts solar power into usable electricity (alternating current)
- so you can use it in your home and feed any surplus into the public power grid.

Good reasons to invest

A photovoltaic system will be profitable for at least 20 years, i.e. the projected life cycle of its high-end components.

Advantages:

- Avoid rising electricity costs: solar power is already cheaper than purchased domestic electricity.
- Self-consumption cuts your electricity costs: you could potentially save around 30 % on your annual bills.
- The handy overview function helps you to identify which of your domestic appliances consume the most energy so you can replace them.
- Increase the value of your property: the tangible benefits provided by the photovoltaic system are not subject to inflationary losses.
- In these turbulent times, you need a safe haven for your money: a photovoltaic system will give you 20 years of guaranteed income and savings on your electricity bills.
- Contribute to the energy transition and protect the environment.

* Predicted life expectancy of the sun.

What KOSTAL can offer you – the right inverter for every requirement



As a solutions provider for smart power generation and its use, with KOSTAL you have a strong partner on board. To give you ecological and clean energy from your own roof, we provide a wide range of solar inverters for the layout of virtually all PV systems.

Our corporate philosophy of “Smart connections.” is also reflected at the product level – in both an optical and technical respect.

PIKO MP plus

With our PIKO MP series single-phase inverters, we also provide you with the customary KOSTAL quality in the low power segment of 1.5–4.6kW.



PIKO IQ / PLENTICORE plus

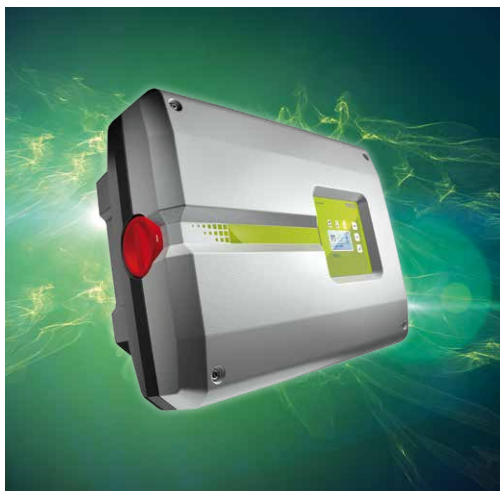
Our new devices with power classes of between 4.2–10 are really smart products with lots of impressive inner values.

PIKO 12–20

The PIKO 12–20 provides private homes with an optimum layout for their photovoltaic system with tried and tested PIKO technology.

PIKO 36 EPC

Alongside private use, more and more companies are tapping into the energy of the future. We are setting new standards in large projects with the PIKO 36 EPC.



PIKO inverters by KOSTAL – flexible, communicative and practical ...

The PIKO inverter, the centrepiece of all photovoltaic systems, leverages solar power while cutting your electricity costs. A KOSTAL solar inverter eliminates the need for any further components in your system planning: all you need is PIKO.

PIKO inverters – even more flexible through smart optimisation

Because the PIKO inverter is so flexible, virtually any photovoltaic system can be fitted with a KOSTAL solar inverter.

- Expanded 1.5–36 kW product range for flexible system planning
- Wide range of voltages and currents for flexible string design
- Rapid self-learning shadow management***
- Up to 3 MPP trackers
- User-friendly layout through KOSTAL Solar Plan



... simply better

PIKO inverters – even more communicative through smart interaction

A wide range of communication interfaces makes any additional monitoring components surplus to requirements. The PIKO inverter also supports advanced Smart Home technology.

- Smart Home compatible
- Free Solar Portal and Solar App for monitoring the PV system
- Start up and configure your system and view yield data in graphic form directly via the integrated display
- Standard integrated communication package with data logger, system monitoring and Webserver
- Many interfaces without additional components: Display, network and control interfaces
- EEBus on board*/**
- Optional scope for connecting an external energy meter – for 24 h monitoring of home consumption
- Smart Communication Board as a platform for current and future communication standards*

PIKO inverters – even more practical through smart design

The futuristic design of the PIKO inverter is geared towards safe and convenient installation and operation.

- Simple handling for rapid installation
- Robust circuit breaker with easy-to-read switching status
- Easily-accessible and well-protected connection area
- Quick, uncomplicated and tool-free AC and DC installation
- Slimline design and space-saving
- Optimum protection from dust and water for use outdoors thanks to protection class IP 65 (does not apply to PIKO 12–20)

* only applies to PIKO IQ

** only applies to PIKO 12–20

*** does not apply to PIKO 36 EPC

**** does not apply to PIKO MP plus



PIKO MP plus



PIKO



PIKO IQ
PLENTICORE plus

A little secret retreat ...



PIKO MP plus – the new mini inverter is highly impressive

Flexible in use

- One or two MPP trackers
- Extended MPP range – perfect for repowering

Smart connected

- Display, data logger, system monitoring, network and control interfaces integrated as standard
- Free monitoring of the PV system via the KOSTAL Solar Portal, KOSTAL Solar App and internal Webserver

Smart performance

- Energy meters can be integrated
- Dynamic active power control and 24 h measurement
- Zero feed-in possible

Easy to install

- Single-phase feed-in
- Convenient to connect without opening the device
- Integrated DC switch
- Simple menu-guided operation and installation
- Optimum protection from dust and water for outdoor use (protection class IP65)

PIKO MP plus

The new PIKO MP plus is extremely adaptable thanks to its power classes of between 1.5–4.6kW, making it ideally suited to small photovoltaic systems on detached homes, and ready for use with just three modules or more. The single-phase inverter delivers extremely stable yields and its wide input voltage range provides numerous wiring options for the PV modules.

- The PIKO MP plus inverters can be used in numerous countries around the world.
- A communication package with data logger, Webserver and solar portal is integrated as standard. What's more, the PIKO MP plus has a convenient connection range and an integrated DC switch. Thanks to IP 65, the new PIKO MP plus is suitable for outdoor use and can be operated both inside and out.



You can use the **KOSTAL Smart Energy Manager** to also make your **PIKO MP plus** storage-compatible. For more details, consult the **PIKO MP plus** brochure.



Make your dreams come true ...



PIKO IQ and PLENTICORE plus – our power packs for your home

PIKO IQ

Flexible in use

- 2 MPP trackers suited to the layout of almost all roofs
- Extended MPP range – perfect for repowering
- Available in five power classes – perfect for every home

Smart connected

- Smart Communication Board – future-proof and new functions can be added via the app
- Display, data logger, system monitoring, network and control interfaces integrated as standard, WLAN Ready via external USB WLAN adapter*
- Free KOSTAL Solar Portal for monitoring the PV system
- EEBus and SunSpec for Smart Home integration

Smart performance

- Fast, self-learning shadow management – adapts individually to the installation site
- Dynamic active power control and 24-hour home-consumption measurement

Easy to install



- Simple device configuration using commissioning wizard
- Safe installation due to clearly arranged, separate terminal compartment and protected power electronics
- Auto update and remote support*

PIKO IQ

The PIKO IQ – a smart product with lots of impressive inner values. The new three-phase inverter from KOSTAL is particularly flexible to use and thanks to its power classes of 4.2–10kW is perfect for every home.

- Not only does it look great, but it's also a powerful, efficient and functional product and it's not just its new look that is attracting attention. Its extended MPP range is perfectly suited to repowering and therefore allows an old inverter to be replaced with a new PIKO IQ.
- It's communication skills are unrivalled – its Smart Communication Board is future-proof and new functions can be added using apps. The PIKO IQ is always smart connected – it has lots of features integrated as standard, such as the data logger, integrated system monitoring and network and control interfaces. You can easily monitor your own PV system using the KOSTAL Solar Portal.
- The PIKO IQ is the perfect embodiment of smart performance – fast, self-learning shadow management adapts individually to the installation site. Dynamic active power control makes it particularly flexible. The 24-hour home-consumption measurement provides a complete overview of all important characteristic values.

* Available at a later date via software update



PLENTICORE plus

In addition to the properties of the PIKO IQ, the PLENTICORE plus offers even more flexibility in terms of roof layout or maximising self-consumption. The reason for this is its 3rd MPP tracker, which can also be used as a battery input. For more details, please consult our PLENTICORE plus brochure.



Got bigger plans ...



PIKO 12–20 – our solution for large houses and commerce

Flexible in use

- 3-phase feed-in
- Up to 3 MPP trackers suited to the layout of almost all roofs
- Wide input voltage range for flexible string design

Smart connected

- Standard integrated communication package with data logger, system monitoring and Webserver
- Free KOSTAL Solar Portal and KOSTAL Solar App for monitoring the PV system
- Many interfaces without additional components: Display, network and control interfaces

Smart performance

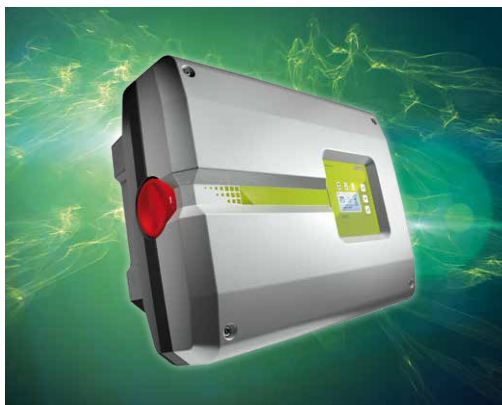
- Fast, self-learning shadow management – adapts individually to the installation site
- Dynamic active power control and energy consumption measurement via optional PIKO BA Sensor

Easy to install

- Simple device configuration using commissioning wizard
- Integrated switch contact for self-consumption optimisation
- Integrated electronic DC switch
- Quick, uncomplicated and tool-free AC and DC installation

The PIKO inverters impress across the board with their flexibility. The proven PIKO technology is more enhanced and more adaptable. The wide input voltage range and power range of the three-phase inverters is particularly well suited to a flexible string design. This allows different string lengths and a variable number of PV modules and module types to be connected. What's more, individual module alignment is not an issue for these PIKO inverters. Virtually any combination, e.g. on an east/west facing roof, can be exploited to the full using up to three independent MPP trackers.

- The self-learning shadow management integrated in all PIKO inverters also gives the PIKO 12–20 unbeatable smart performance. The dynamic active power control works with the PIKO BA Sensor to take account of your own energy consumption and allows optimum use to be made of the energy generated. This makes you more independent and cuts your electricity bills.
- You can install the inverter anywhere you want: Thanks to the high housing protection category, they can be used both indoors and outdoors without any further adaptations. The PIKO inverters are pre-configured for a large number of countries. National grid adjustment takes place automatically following activation of the corresponding country setting or after selection of the applicable standard. This is done simply and directly via the inverter display.



Long-term reliability ...



PIKO 36 EPC, Smart Power – guaranteed to optimise costs

Smart Project Design

- Optimised generator design with system voltage of up to 1100 V
- Integrated KOSTAL Smart AC Switch takes the place of the external circuit breaker
- KOSTAL Smart DC Guard protects the generator. Loss-free and requires no maintenance. No need for string fuses
- Simple DC installation at an attractive cost without any string distribution boxes
- Over-assignment of up to 50 % (DC to AC) permits flexible generator design

Smart connected

- Tried and tested communication via RS485 bus integrated as standard
- Compatible with many plant controllers and data loggers, so you can use the monitoring system you prefer
- Integrated feed-in management makes the system ideal for direct PV energy sales

Smart performance

- In the event of an error, individual strings are shut down to maintain high availability
- The connected PV strings are monitored in pairs for optimum monitoring and service
- Integrated, certified grid service functions ensure reliable operation

Smart installation

- Optimum protection from dust and water for outdoor use (protection class IP 65)
- Prepared for protection against overvoltage on the AC, DC and communication side
- Cost-optimised 4-wire AC connection, no neutral wire

The PIKO 36 EPC – ideal for your project work

KOSTAL is setting new standards in photovoltaic projects with the PIKO 36 EPC. Inverters for this sector need to meet certain requirements. KOSTAL has therefore developed an inverter customised to these specific needs.

- The Smart Project Design of PIKO 36 EPC provides lots of different benefits, rendering external additional devices unnecessary. The maintenance-free and zero-loss KOSTAL Smart DC Guard protects the generator and makes a string fuse superfluous.
- Thanks to smart functions, like the Smart AC Switch, you can save money and enjoy enhanced safety and efficiency at the same time.
- It is always smart connected and connected in a very safe manner. The integrated data logger means that system information is always backed up. A real all-rounder – the integrated feed-in management makes it an ideal solar inverter for direct PV energy sales.



PIKO inverters – reliable monitoring ...

KOSTAL Solar Portal: **Monitoring online – from anywhere at any time**

The KOSTAL Solar Portal protects your investment in a PV system against yield loss, e.g. through active e-mail alerts of events. You can register for the KOSTAL Solar Portal for free via the affiliated website of KOSTAL Solar Electric*.

Functions include:

- Worldwide online access to the portal
- Graphic depiction of the DC single string power, system power and yield data
- Visualisation of home consumption for optimised self-consumption
- Awareness-raising of sustainable energy use
- Notification of events by e-mail
- Detailed data export
- Sensor evaluation
- Display and proof of a potential active power reduction by the grid operator
- Enhanced service and support options

The KOSTAL Solar Portal can also be used for PV systems with multiple inverters and, thanks to the multilingual menu, it can be deployed internationally.

* www.kostal-solar-portal.com



... online, any time. Worldwide

KOSTAL Solar App: Monitoring made easy

Using the new KOSTAL Solar App, customers can monitor their systems easily via their smartphone or tablet – naturally free of charge. Here, you can view important data from your PV system in graphic form.



Thus, for example, the following can be displayed:

- Historic data through synchronisation with the KOSTAL Solar Portal (yield data, home consumption*, performance data)
- Live data** (feed-in capacity, home consumption*)
- Depending on configuration, amounts earned and saved

As well as viewing this important data, you can also directly and conveniently contact KOSTAL Support, e.g. via a pre-filled data form for error analysis. The KOSTAL Solar App is available for the Android and iOS operating systems.

Integrated Webserver: Quick and direct monitoring

The Webserver integrated into every inverter informs you at a glance of the most important system data. Inverter settings and adjustments can be made simply and easily via a browser using a PC or tablet.

The most important data and settings are:

- Display of the current performance data and the daily and total yields
- Information page showing home consumption data and visualising coverage from multiple energy sources***
- Download of historical log data
- Inverter configuration (e.g. portal access, IP address, self-consumption, active power control****)

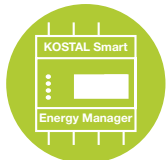
* Home consumption can only be visualised in conjunction with the PIKO BA Sensor or an energy manager.

** Only possible in your own network

*** During operation of the PIKO inverter

**** Other than with PIKO 36 EPC

PIKO inverters – part of a smart home ...



**KOSTAL Smart
Energy Manager**



PIKO BA Sensor



**Dynamic
power control**

Efficient energy use

With its range of communication interfaces, PIKO meets requirements for efficient energy use. Graphic visualisations on the KOSTAL Solar Portal and the KOSTAL Solar App also help to raise awareness of energy usage.

More self-consumption

The PIKO BA Sensor helps you to use generated power in your home rather than let it go to waste.

- The PIKO BA Sensor in PIKO inverters 12–20 and the KOSTAL Smart Energy Manager in the PIKO IQ and the new PIKO MP plus measure the electricity consumption of your home and give you an overview of when, where and how much electricity is needed in your home, enabling you to change your consumption habits for the better.

- Through dynamic active power control, you can make optimum use of your generated electricity while at the same time meeting statutory requirements (e.g. the 70 % rule). Through the PIKO BA Sensor or energy meter, the PIKO inverter determines how much electricity the building is consuming and can adjust feed-in to the public grid accordingly. Through your self-consumption, more energy can be generated despite blocking.

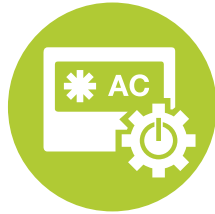
Basic update capability

KOSTAL's corporate philosophy, "Smart connections.", also applies to its products.

- Software developments or technological advancements, e.g. in the Smart Home domain, can be very easily incorporated into your PIKO inverter via the network connection.
- Software is updated with ease and without the service team having to be deployed (can be done later on using the software update).



... and Smart Home compatible



Air conditioning system control



Heat pump control



EEBus Initiative e.V.

Be ready for the technology of tomorrow with PIKO

Innovative PIKO inverters enable you to accurately manage your energy usage and provide you with the perfect basis for upgrading your home to a Smart Home.

Reduce electricity bills through smart communication

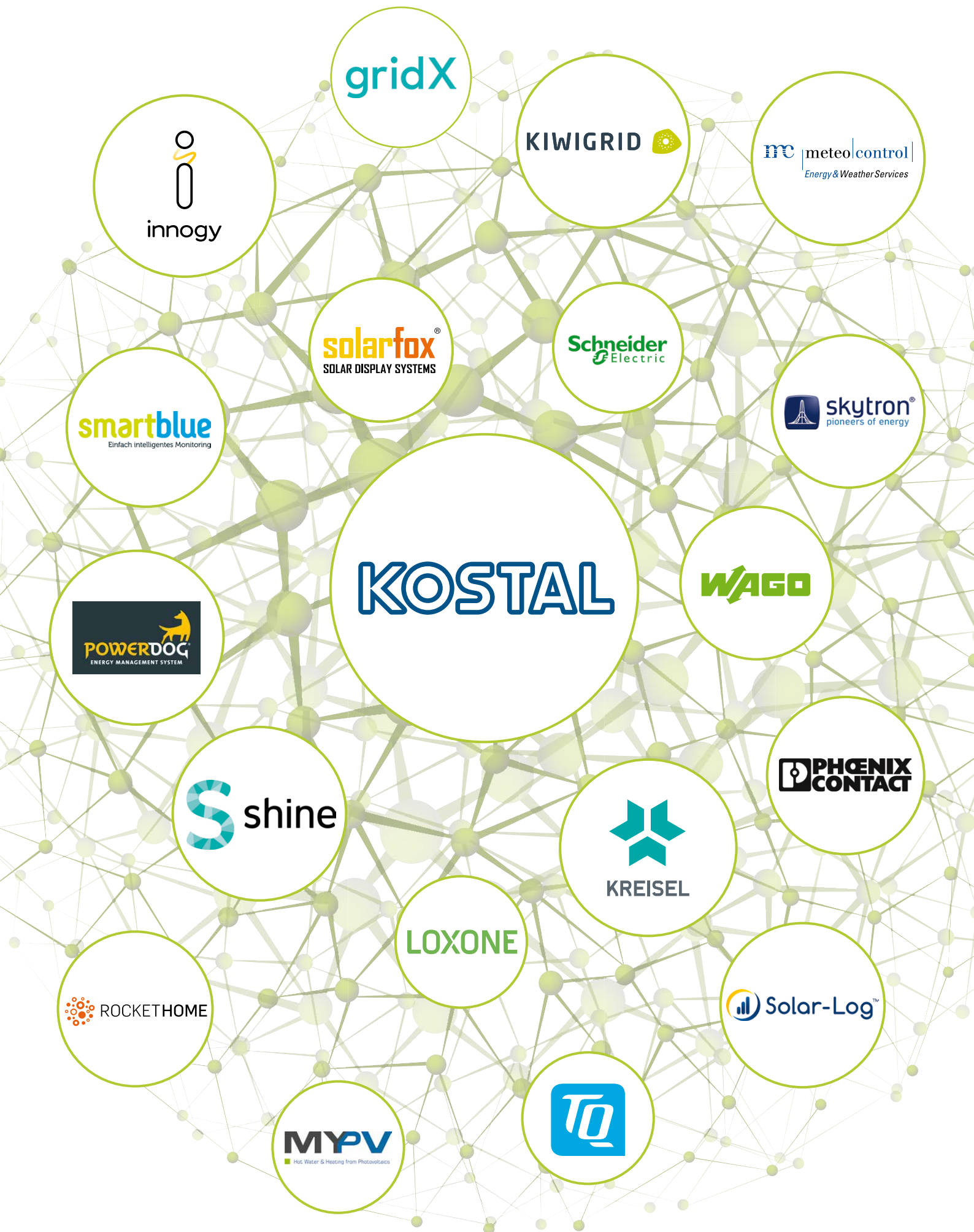
Accurate load control through the relay output connection increases your self-consumption.

- For instance, you can use a heat pump, air-conditioning unit or immersion heater when the energy is available.
- This will enable you to maximise your self-consumption and lower your electricity bills.

Innovative networking concepts in the home

KOSTAL is part of the EEBus Initiative and integrates the associated technological developments into its products.

- The PIKO IQ and the PIKO 12–20 are fully EEBus-compatible and can communicate with other domestic electronic appliances.
- Energy can therefore be made available to appliances as it becomes available.
- This can be achieved through automated communication, without any need for manual control.
- Using homeLYnk from Schneider, the charge column can be controlled smartly so that you can always charge your electric vehicle in the best way possible.
- With SunSpec, the PIKO IQ provides a standardised means of reading the latest values and distributing power depending on what is available.



Smart partnerships, which connect!

Partnership connections

Not only is the PIKO inverter Smart Home compatible, but further applications are possible in collaboration with innovative partners.

System monitoring

gridX
WAGO
Solarfox
smartblue
skytron
meteocontrol
PowerDog
Solar-Log
Rockethome

**Our KOSTAL solar inverters
are compatible with many
innovative partners:**

E-Mobility

innogy
Kreisel Electric
Schneider Electric

Smart Home/ energy management

Schneider Electric
Phoenix Contact
Loxone
Shinepowered
TQ Group
MyPV
Kiwigrd

KOSTAL Smart Warranty – free extended warranty for KOSTAL solar inverters

Visit our KOSTAL Solar online shop to get your free KOSTAL Smart Warranty, the extended warranty for our new PIKO IQ and PLENTICORE plus product ranges. Within the first 6 months of purchase, you can obtain a free extended warranty for a total of 5 years by registering the serial number and details of the system and location data of your KOSTAL solar inverter. You will first have to create a user account; this is something you only have to do once. Once you have successfully registered,

your warranty certificate will be e-mailed to you. Your statutory warranty is not affected by our product warranty. Our services covered by the warranty include a rapid exchange service to ensure that your PV system is quickly back in operation. We will organise the collection of your defective device and we will also cover the freight costs incurred for this.



Visit us at our KOSTAL Solar online shop:
shop.kostal-solar-electric.com

5 steps to receiving KOSTAL Smart Warranty – it's simple:

- 1 Log into your user account
- 2 Select KOSTAL Smart Warranty
- 3 Enter serial number, date of purchase, system data and system location
- 4 Add KOSTAL Smart Warranty to your basket
- 5 Confirm and receive your free 5-year extended warranty



PIKO inverters – service guaranteed. Tailor-made

Each PIKO inverter is a quality product manufactured within the KOSTAL Group, and subject to the same strict quality standards as, for example, our products for the automotive industry. PIKO inverters come with comprehensive warranties and services.

Take service literally, give us a call!

For KOSTAL, partnership means teamwork, cooperation and above all personal contact with customers. KOSTAL Service employees are available by phone and can answer all your questions before and after your purchase, for example:

- General technical advice
- Support with system planning using the KOSTAL Solar Plan configuration software
- Adjustment of grid parameters using the PARAKO software
- Help with start-up
- Support with system analysis
- Advice for the configuration of system monitoring
- Warranty processing

KOSTAL Solar Repower Check

For a simple solution to inverter replacement please visit:

www.kostal-solar-repower-check.com



Service hotline offering guaranteed assistance and one-to-one customer contact for all your questions.

You can reach the KOSTAL service hotline on:

Telephone +49 761 47744-222

(Mon. – Fri. from 8:00 a.m. to 5:00 p.m.) or by e-mail at **service-solar@kostal.com**

You can send us queries or messages at any time, even outside hotline operating hours, using the service portal at

www.kostal-solar-electric.com/service-support

Queries are treated as a priority.



KOSTAL seminars and webinars can be booked online in just a few clicks.

KOSTAL seminars and webinars

Participants in KOSTAL seminars benefit from professional instruction, wide-ranging and specialised knowledge, and interactive exchanges with the seminar host. This offer includes various training sessions focusing on technology and sales. Detailed information on KOSTAL seminars is available at: www.kostal-solar-electric.com/service-support/seminars-international

Here you can find out all you need to know about new webinars in KOSTAL's much-expanded range of training offers.



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