solar native

Our Smart Energy Home and its components

Information for professionals

solar native

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" It's all in a stick

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Contents

Smart
Energy
Home

What if installing a photovoltaic system was as easy as connecting a TV? Discover the Solarnative Smart Energy Home, our comprehensive energy solution for residential PV.

- ✓ Easy and fast installation
- ✓ Highest reliability
- ✓ Maximum safety

PowerStick

The smallest PV inverter in the world

IntelliGate

Control unit for intelligent energy management

Solarnative App

Remote energy monitoring and control

More Energy
More
Self-sufficiency

- ✓ Optimal utilization of available rooftop areas
- ✓ Maximum energy yield
- ✓ Highest degree of self-sufficiency
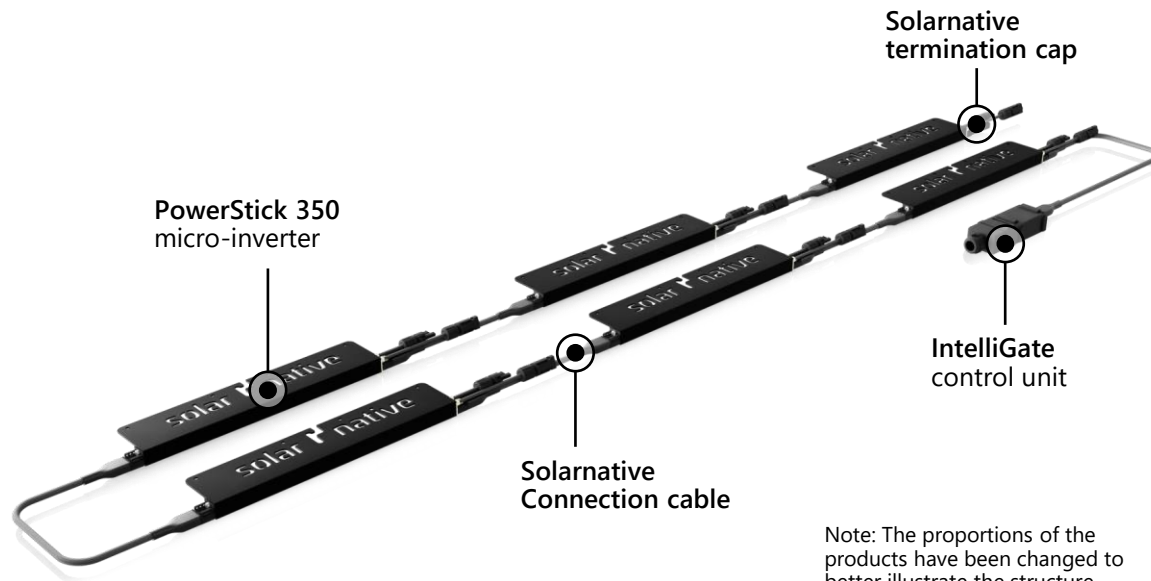- ✓ Faster return on investment

ChargeWhiz Ab 2025

Bidirectional integrates EVs into the solar energy system

BatteryBrick

Off-grid storage and backup system with extra long lifetime

**PowerMeter**

Safe & easy power monitoring

Our
AC system

A micro-inverter is **attached to each PV module**, controlling the module individually and converting DC to 230 V AC current right at the source.

✓ Maximum flexibility and scalability of system architecture
✓ Optimum utilization of existing (roof) surfaces
✓ Maximum safety: No danger from DC high voltage

Solarnative termination cap

PowerStick 350 micro-inverter

IntelliGate control unit

Solarnative Connection cable

Note: The proportions of the products have been changed to better illustrate the structure.

All PV modules operate at their individual maximum power point

Various orientations and inclinations can be combined

Shadowing, dirt or the like only limit the individual PV module

230 V AC power in the entire system
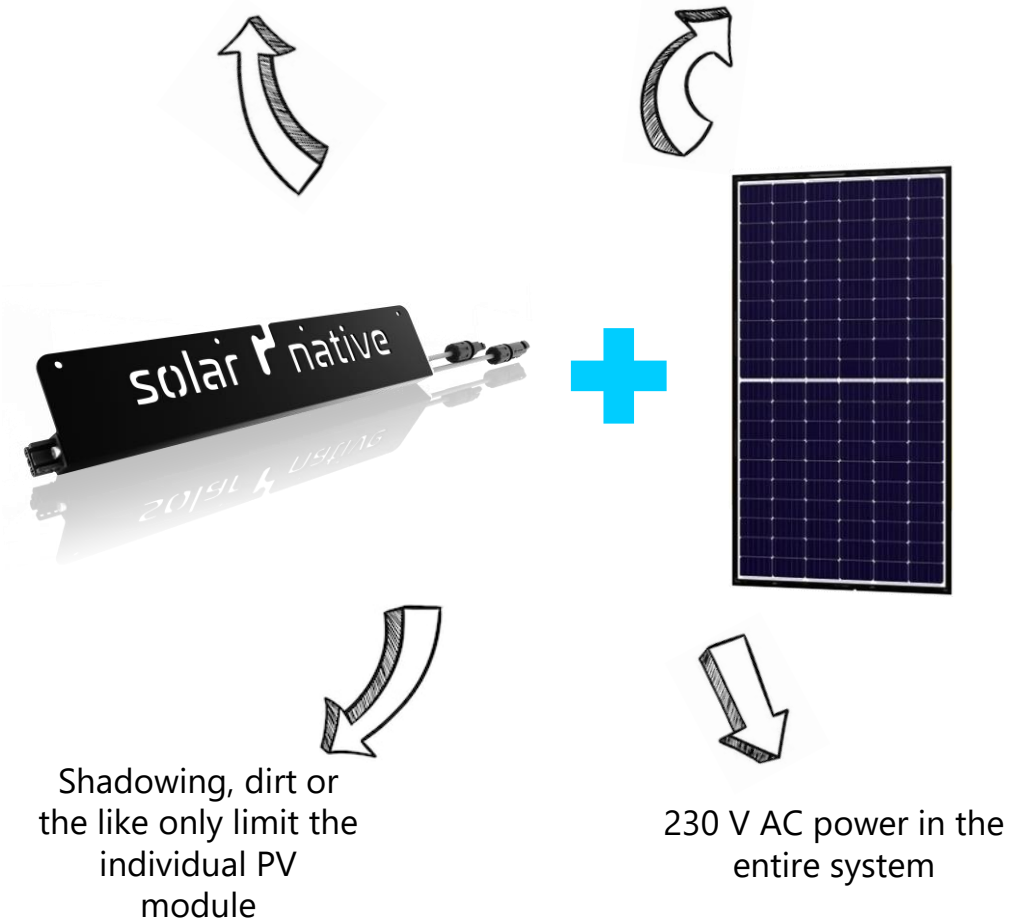
Plug & play
installation

- ✓ Just install whatever fits on the roof: combine various orientations, inclinations, shading conditions

- ✓ One size fits all: compatible with all major modules in the market, suitable for small plants with only one module as well as big rooftop plants

- ✓ Easy cabling on the roof

- ✓ No crimping: just connect all items with our ready-made cables

- ✓ No need for return cables from the end of each string

Up to +10% higher energy yield*

Up to +30% more capacity installed*

- ✓ Automatic device detection

- ✓ Automatic mapping function

- ✓ Remote commissioning until it is dark

- ✓ No data cables

- ✓ Built-in NS protection and DC surge protection

- ✓ Self-limiting and safe by design

- ✓ No DC high voltage – safe handling and operation
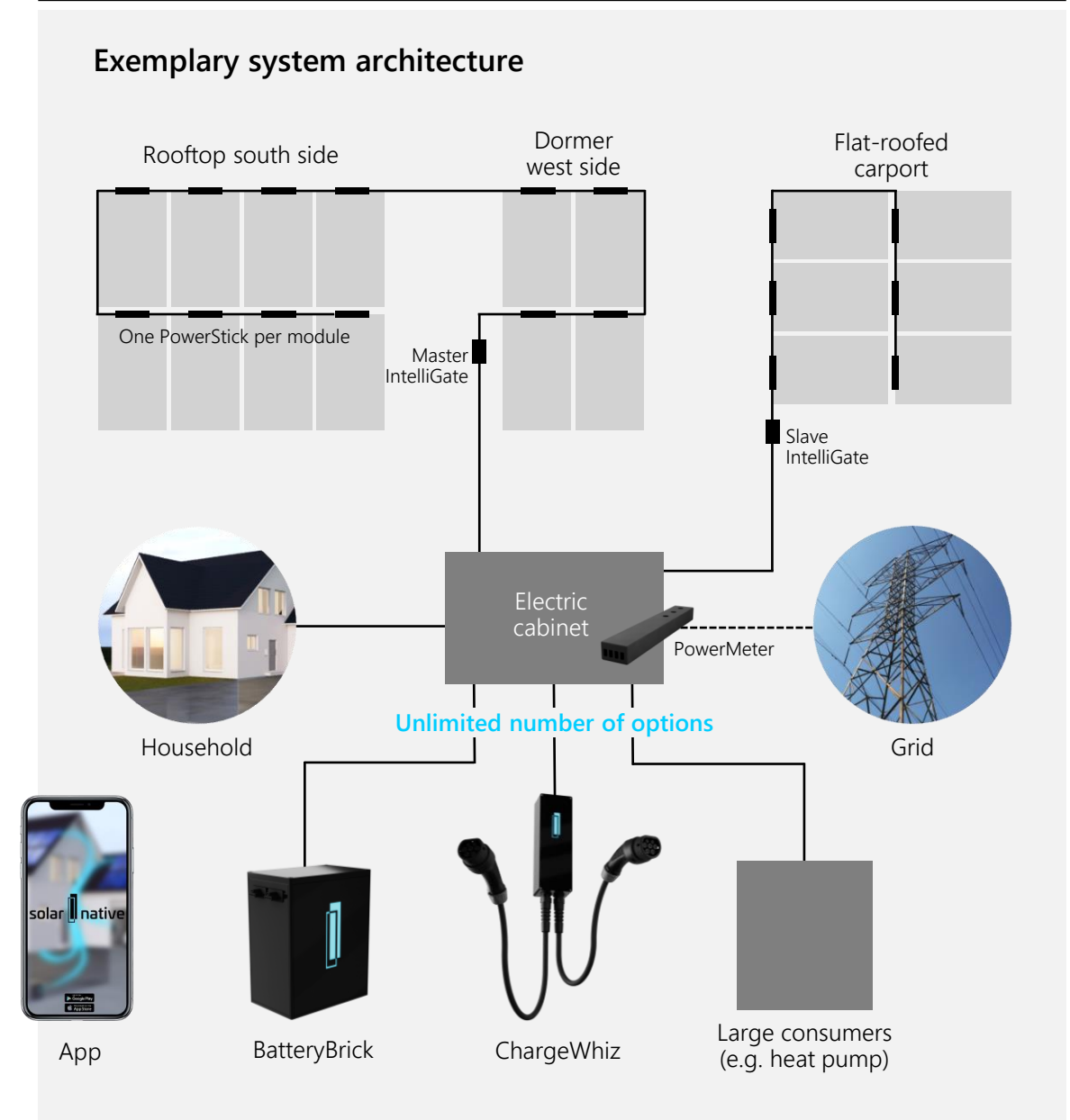
- ✓ Automatic rapid shutdown

*compared to standard PV systems

Highest
flexibility
and scalability

With an unlimited number of gateways that can be combined in a master-slave configuration, a freely selectable number of batteries, EV chargers and smart meter devices, the Solarnative Smart Energy Home can be tailored to any need. Commissioning and control are carried out with our mobile app.

- ✓ One Solarnative IntelliGate per string
- ✓ Any number of modules per string, up to 20 A current
- ✓ Unlimited number of IntelliGates in one system
- ✓ Any number of batteries, EV chargers and smart meters

" Whether just 1 solar module or a large rooftop system - our PowerStick is suitable for every system structure.

Exemplary system architecture

Rooftop south side

Dormer west side

Flat-roofed carport

One PowerStick per module

Master IntelliGate

Slave IntelliGate

Electric cabinet

PowerMeter

Unlimited number of options

Household

Grid

App

BatteryBrick

ChargeWhiz

Large consumers (e.g. heat pump)
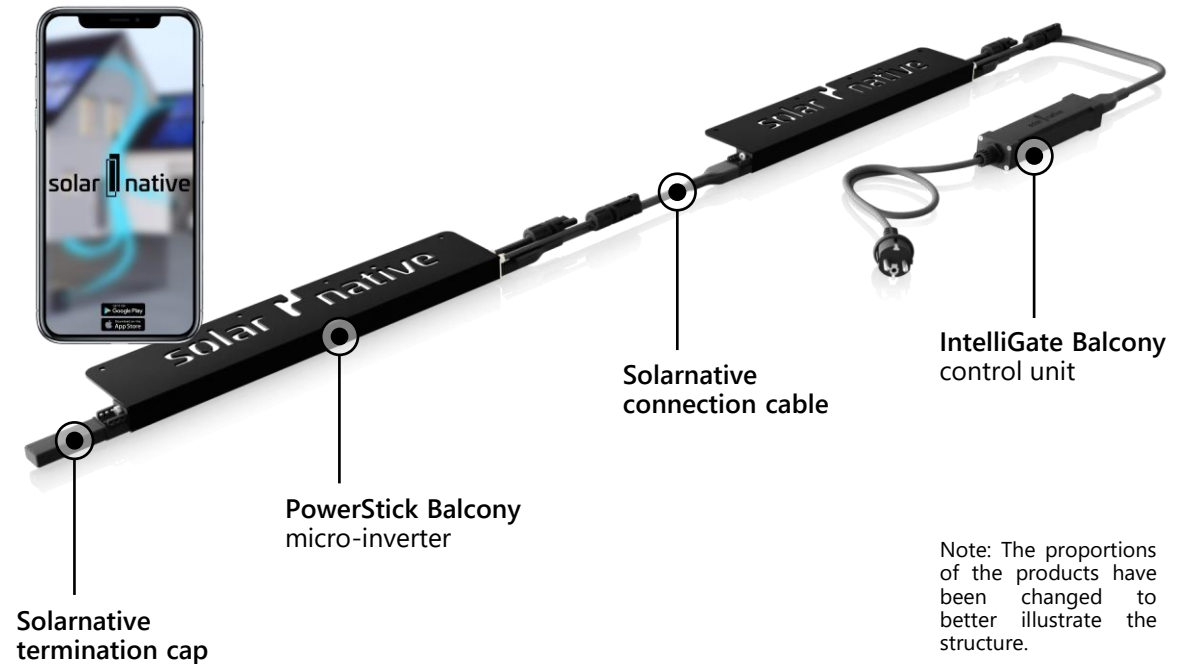
Perfect
solution
for balcony PV

With the ongoing energy crisis, PV solutions for balconies and other small areas are becoming increasingly relevant for energy autarky and are rapidly gaining popularity. As a system that is often **installed by non-professionals** and must be **integrated in the living space**, there are some specific requirements for PV solutions:

- ✓ Easy plug & play installation
- ✓ Pleasant design
- ✓ Highest safety
- ✓ Flexibility and (modular) expandability

Exemplary balcony PV installation with 2 modules

balcony

One Power Stick per solar module

Micro-Gateway

Household

Grid
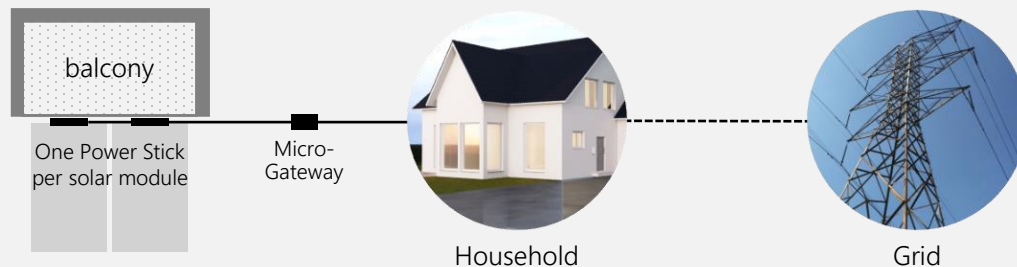
The Solarnative PowerStick Balcony can be combined with all commercially available modules and allows to install a minimalistic and **esthetic PV plant** with ease that can be **easily extended** at any later point of time. Commissioning and control are carried out with our mobile app.

IntelliGate Balcony control unit

Solarnative connection cable

PowerStick Balcony micro-inverter

Solarnative termination cap

Note: The proportions of the products have been changed to better illustrate the structure.

Our specially developed, low-cost **IntelliGate Balcony** limits the feed-in power to any desired value, which can be set according to local regulations. This means that more than two solar modules can be combined in one string safely to maximize the energy yield.

PowerStick 350
PV micro-inverter

Our **unique high-frequency micro-inverter** with 350 W AC-power is suitable for PV modules with nominal power up to 440 Wp. It will be available in various versions:

1. PSB-350: PowerStick Balcony with mounting plate and MC4 connectors for installation in (balcony) systems with a few PV modules (up to 6A)
2. PS-350: PowerStick with mounting plate and MC4 connectors for installation in PV systems with >800W
3. PSX-350: Integrated version without mounting plate for special applications, e.g. for module integration (see next page)
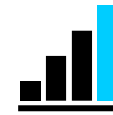
Highest energy yield

- ✓ Module-level optimization
- ✓ Maximum utilization of the roof area
- ✓ Superior low-light performance
- ✓ No stand-by losses

Highest reliability

- ✓ Unique thermal management
- ✓ Reduced failure rates due to minimized component count
- ✓ 25 years limited warranty

Maximum safety

- ✓ No dangerous high DC voltages in the system
- ✓ Self-limiting strings
- ✓ Integrated NS protection and DC surge protection
- ✓ Automatic module-level switch-off when grid is down, compliant with NEC 2021 rapid shutdown requirements

High
frequency
technology

Now – what's the **secret** of the Solarnative PowerStick? It is our unique high-frequency technology, the result of 30 years of dedicated development, that unlocks various advantages of the Solarnative Smart Energy Home over competing PV systems.
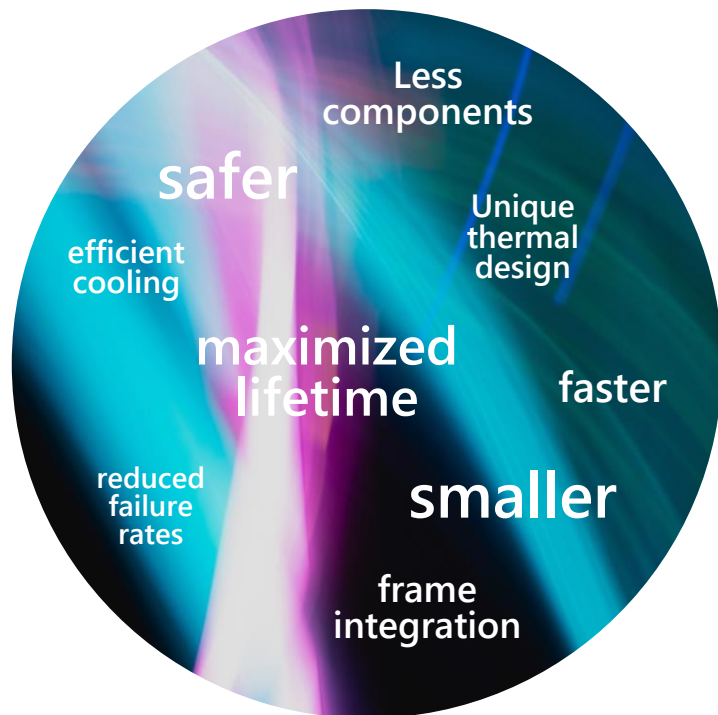
AC modules
the future of
residential PV

Thanks to its miniaturized construction, our micro-inverter can be integrated into the frame of modules to create „AC modules".

Easy installation

Higher efficiency

Superior safety

Lower module cost

IntelliGate
control unit

The Solarnative IntelliGate is the **brain of the home energy system** and controls the individual devices. It communicates with inverters via power line communication and with all other devices in the system via a low-power wireless LoRa network. It is connected with the Solarnative cloud server via LTE. The gateway comes with fast-plug clamps and cable connectors offering tool-free assembly.

Power Meter

Our PowerMeter with wireless control provides **easy and safe current monitoring** for 3-phase power flow or up to three independent single-phase consumer. Thus, it can be employed to monitor the grid connection point, track large consumers or to integrate third-party batteries and EV chargers into the Solarnative monitoring system. With its miniaturized dimensions, it fits into every electrical cabinet.

ChargeWhiz
EV charger

Our ChargeWhiz is a **bi-directional EV charger (from 2025)** that integrates e-vehicles into the Smart Energy Home system. Solar energy is fed into the vehicle automatically whenever PV generation exceeds consumption. The intelligent control system allows auto-switching from surplus charging to priority charging to ensure that the vehicle is fully-charged when leaving.

✓ Bidirectional AC-charging
✓ Surplus charging from 1 W surplus
✓ Flexible power split and prioritization with other devices
✓ Extremely low standby consumption of 1-2 W
✓ Configurable cable length
✓ Easy installation
✓ Control with Solarnative app

Solar energy is fed into the house and vehicle, according to custom prioritization

Ab 2025

ChargeWhiz

E-vehicle as storage unit*: energy is fed into the car and back into the system as needed

Remote control via mobile app

*Available with EVs that support bidirectional charging

BatteryBrick
AC storage unit

The Solarnative energy storage solution is a **modular battery system** composed of independent AC batteries with integrated high-frequency inverter. Each battery provides 0.9 resp. 1.8 kWh storage capacity and 375 W charging/discharging power. Various BatteryBricks can be combined in a 1-phase or 3-phase system with a storage capacity of up to 32.4 kWh and 13.8 kW charging/discharging power in 3-phase homes. Our unique high-frequency AC battery technology avoids cell mismatch and overheating and leads to **unprecedented lifetime and safety.**


- ✓ Full off-grid back-up system
- ✓ No dangerous high DC voltages
- ✓ Single cell technology
- ✓ 3-phase storage/supply
- ✓ Smart charging strategy to optimize self-sufficiency
- ✓ Lightweight and compact size

Plug & play
cabling

No more crimping on the roof: our PV system comes with pre-assembled cables to connect the individual inverters to form a string, and link the string to the Solarnative IntelliGate, the control unit of the system. Our cables come in **all required ready-made lengths** to match horizontal or vertical plant layouts and allow to connect the different areas of a plant (various roof areas/orientations, dormers, etc.) easily:

0.8 m	2.0 m	3.0 m	5.0 m	10 m
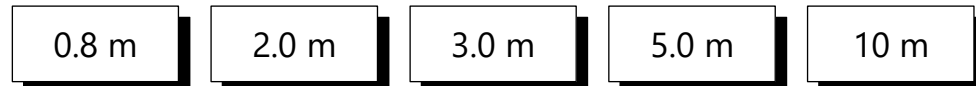
The last inverter of each string is closed off with a Solarnative trmination cap.

Meet Henk
the inventor of the micro-inverter

In 1994, Solarnative CTO of today Henk Oldenkamp successfully marketed his first model of the micro-inverter in collaboration with NKF, a Dutch cable company, and Shell Solar. After that, Henk's journey to the realization of his dream – an inverter that could fit into the frame of a module – was not always an easy one.

With determination he stuck to his vision and kept going: After 30 years of dedicated development, the Solarnative PowerStick is not just a standard inverter, but has also numerous advantages over competing products. It is a dream come true for Henk, the inventor of the micro-inverter.

It is this mindset of making the impossible possible, elaborating and pushing an idea to perfection, standing up to any obstacles that may come and refusing to give up, that sets Solarnative apart from its competitors:

" We go beyond the edge of what is possible!

A young company
with a great heritage

In 2018, Henk met Julian at a photovoltaic conference. Both of them being solar natives, they immediately got off to a good start. Julian having founded and headed several companies in the past, it was clear how to proceed – the idea for Solarnative was born.