

# smartflower POP – the world's first all-in-one solar system

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SIMPLY SET-UP, CONNECT  
AND PRODUCE CLEAN ELECTRICITY





**“Even though I like size, sometimes something small is very effective. And when it comes to photovoltaic solar there is nothing better than, for instance, the smartflower. I mean what a brilliant idea, you put this in front of the house, you plug it in – no installation, nothing – just plug & play.”**

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ARNOLD SCHWARZENEGGER  
CHAIRMAN R20, FORMER GOVERNOR OF CALIFORNIA, ACTOR

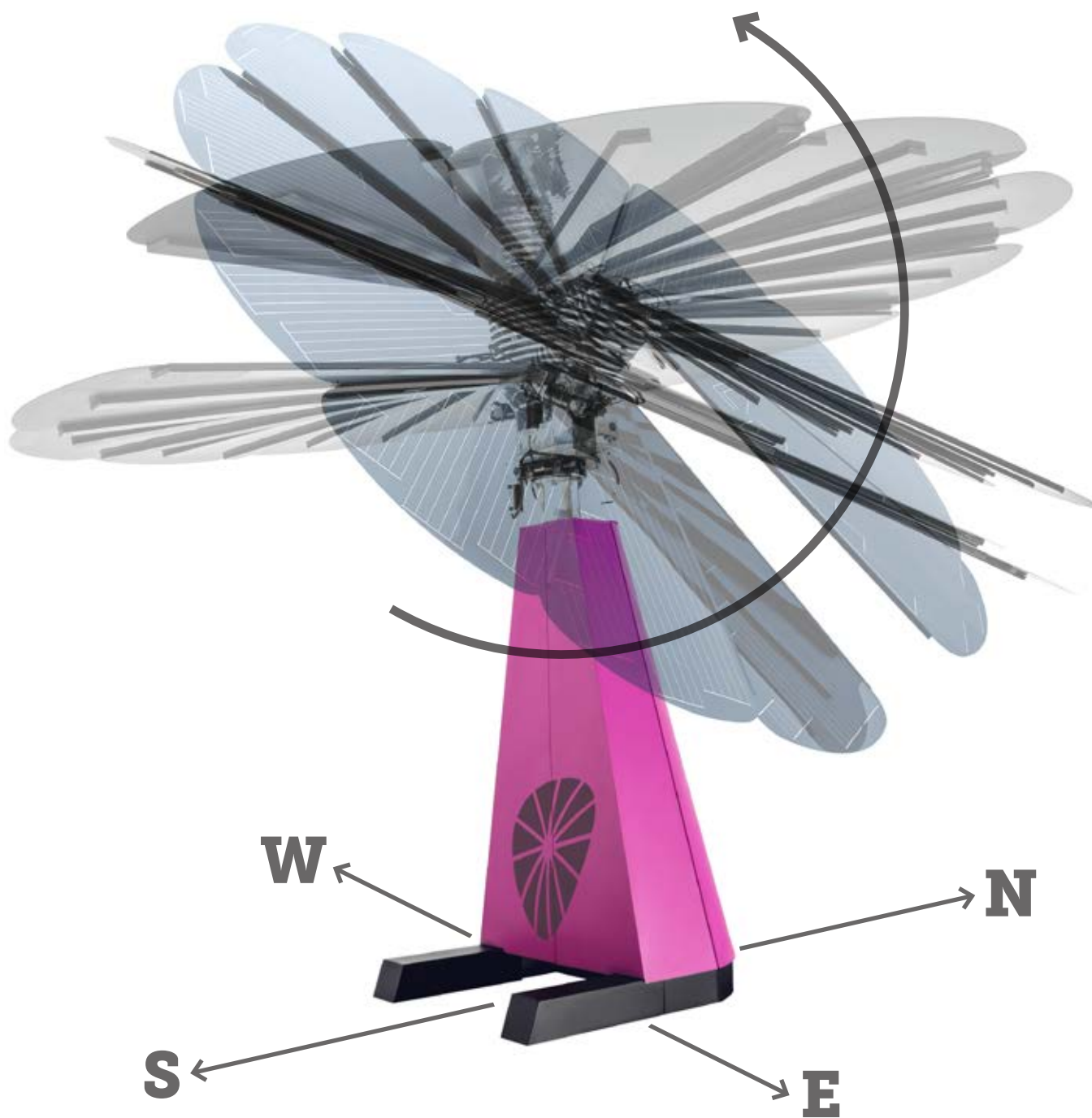
**Remarkable, powerful  
and efficient.** Up to 40% more  
output, thanks to the  
innovative smart features

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MADE FOR THE FUTURE



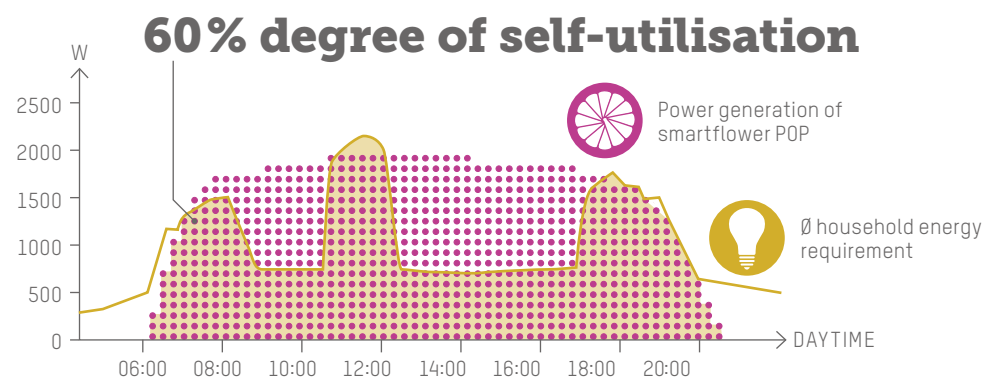




Astronomically controlled and movable across two axes: the circular solar modular fan constantly tracks the sun and always sets itself at an exact 90-degree angle to it, even when the sun is hidden behind clouds. The astounding result: up to 40% more output as compared to a conventional rooftop system, which receives optimum sunlight only for a few hours during the year.

# Simply smart. Simply efficient. For twice the degree of self-utilisation

PHOTOVOLTAIC TECHNOLOGY, AS IT SHOULD BE



Wouldn't it be wonderful if each of us could produce all clean energy we need right in our backyards? And wouldn't it be a cherry on the top if the same photovoltaic system could simply be plug-&-play like any other normal home appliance? At smartflower, we have stopped asking such questions. Instead, we have answered them – with smartflower POP, the world's first all-in-one solar system.

Thanks to its extraordinary construction and the perfectly synchronised components, the system delivers, on an average, approx. 4,000 kWh per year, thus fulfilling the complete average electricity requirement of a household in the central European region.

smartflower POP represents changing times. The size of the system alone is no longer the measure of all things. What counts is a fairly constant production rate during the course of the day, in order to enable a more effective use of the produced energy. smartflower POP achieves a degree of self-utilisation of around 60% – a significant improvement over a comparable rooftop unit, which averages just around 30%. Now that is what we call smart!



At 6:00 am, smartflower POP starts automatically and cleans itself

# Awake when you are. Energy from the first to the last rays of the sun

A SYSTEM THAT FITS YOUR NEEDS

As the sun rises in the morning, smartflower POP unfolds itself completely automatically. It directs its solar modular fan (with a surface area of 18 m<sup>2</sup>) towards the sun and begins producing electricity for you – for your hot shower, your fresh coffee, the breakfast radio. Thanks to dual-axle sun tracking, the fan moves reliably along with the sun throughout the day.

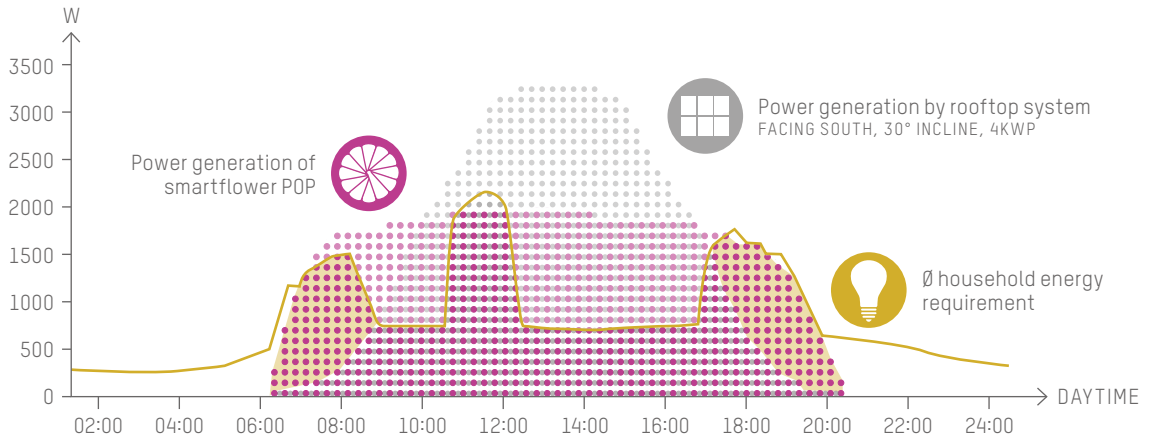
The result: in comparison with the static rooftop system, the unit starts earlier in order to produce the exact amount of electricity you need. It consistently maintains the electricity supply and even uses the energy from the last sun rays efficiently enough to cover your early evening electricity requirements. Only then, does it close up to its secure position, which is also completely automatic.





At 12:00 noon, smartflower POP follows the sun ..... At 8:00 pm, smartflower POP ends the operation and cleans itself .....

SMART FOLLOWS THE SUN:  
SMARTFLOWER POP COMPARED WITH A STATIC ROOFTOP SYSTEM\*



The image clearly demonstrates how smartflower POP functions more efficiently than conventional systems. It has a considerably longer peak phase and produces energy even in the fringe hours of the day, which a rooftop system cannot achieve because of its static alignment to the sun. These produce maximum electricity when you are not at home – valuable energy which is lost.

\*Basis of calculation: a typical July day in Madrid

# Plug & Play – and that is a promise! smartflower POP functions autonomously and automatically

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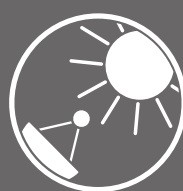
SMART FEATURES FOR MORE EFFICIENCY AND A CARE-FREE USE



## SMART USE

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smartflower POP is delivered as an all-in-one complete system and is operational within an hour. No complex assembly is required: the system is firmly bolted to the ground (or concrete foundation) at the location of your choice. It is designed for maximum performance (see also smart tracking, smart cleaning and smart cooling), and it is easy to use and maintain. It reliably provides electricity throughout the day.



## SMART TRACKING

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Thanks to the astronomical control system, the solar modular fan moves horizontally and vertically along with the sun's position, even when it's cloudy. This guarantees optimum alignment with the sun – an exact 90° angle – during the entire course of the day, even when the sun is low on horizon in the winter. The result: despite the lower space requirement, up to 40% more output as compared to that of a conventional rooftop system, which is only ideally positioned towards the sun for a few hours per year.



## SMART CLEANING

smartflower POP easily rids itself of dust deposits or snow by folding and unfolding itself. Thus, common losses in energy production (up to 5%) are minimized.



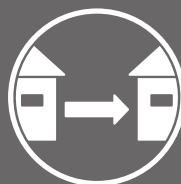
## SMART COOLING

Hot modules deliver less electricity than cool modules. 10°C more means 5% less output. The modules of smartflower POP are always rear-ventilated – hot air cannot accumulate due to their construction. This means they are 10–20°C cooler and deliver 5–10% more output as compared to rooftop systems.



## SMART SAFETY

In continuous operation, the sensors permanently monitor the wind speed. In winds above 54 km/h, smartflower POP automatically folds into its secure position in order to avoid damages. If the wind increases further, 63 km/h or more, it takes up the secondary security position (same as night position). The sensors continue to function and when the wind decreases, the system folds out completely and returns to its electricity-producing tracking position.



## SMART MOBILITY

A significant advantage over fixed rooftop systems: smartflower POP is mobile! When you move out, simply take your private solar plant with you. Disassembling smartflower POP is just as simple as assembling it: just unscrew the four anchoring bolts and cart it away. And naturally the ground can be easily restored to its original state.



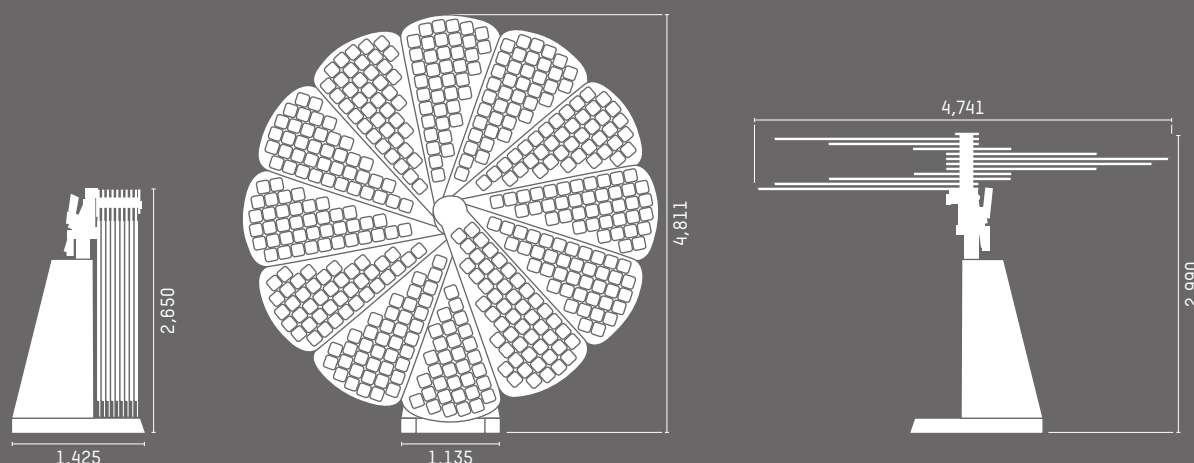
## SMART OPTIONS

When it comes to solar energy, smartflower POP lets you show your colours! It is available in eight colours – from the trendy Berry to the classic Pearl. Either way, the glossy, finely-structured surface gives the base an appealing, modern design.

# At a glance. The essential details about smartflower POP

## DIMENSIONS

All data in mm



## EFFICIENCY GAIN THROUGH SMART FEATURES

	SMARTFLOWER POP 2.31 KWP	ROOFTOP SYSTEM 4 KWP
POWER OUTPUT AS PER PVGIS <sup>1</sup> , LOCATION ROME	5,100 kWh	6,250 kWh
<b>LOWER YIELDS</b>		
Deviation from facing south and roof slope (possible up to 12%)	smart tracking	-3%
Higher module temperature, low dissipation of heat, heat build-up	smart cooling	-5%
Contamination (e.g. by sand, salt, dust, snow)	smart cleaning	-3%
REVISED OUTPUT	5,100 kWh	5,563 kWh
<b>DEGREE OF SELF-UTILISATION<sup>2</sup></b>		
Energy consumed by owner	3,060 kWh	1,669 kWh
Efficiency gain by personal consumption	183%	

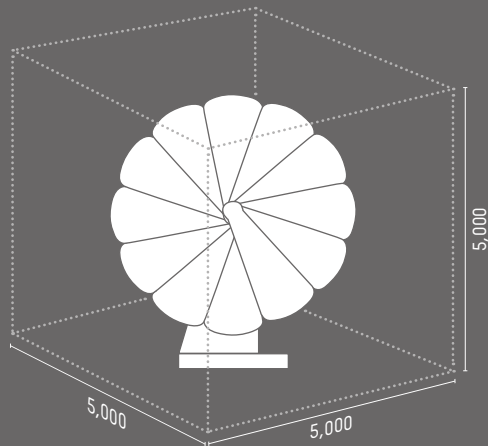
Explanation: For rooftop systems, static alignment to the sun, heat build-up and decontamination lead to a lower output than the one stated as theoretically possible at the location. Furthermore, the system does not constantly produce electricity throughout the day, for example in the afternoon when it is not required. This leads to the distinctly lower degree of self-utilisation of a rooftop system and/or to the stated efficiency gain of smartflower POP.

<sup>1</sup> PVGIS: Photovoltaic Geographical Information System, <http://re.jrc.ec.europa.eu/pvgis/>

<sup>2</sup> Degree of self-utilisation: 60% for smartflower POP, see page 7; 30% for rooftop systems is a statistical empirical value

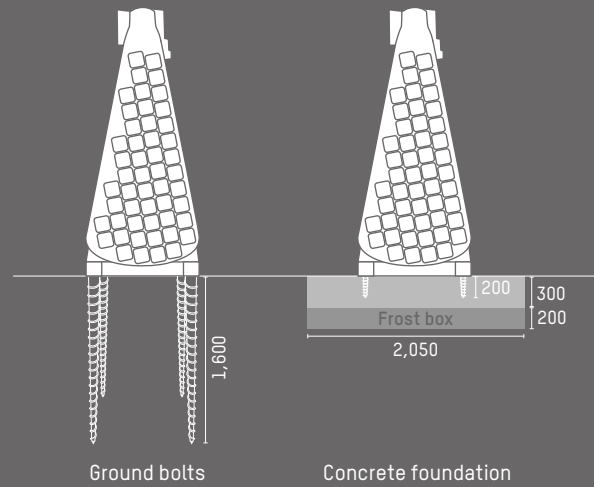
SPACE REQUIREMENT

All data in mm

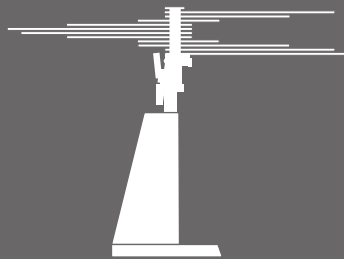


INSTALLATION

All data in mm

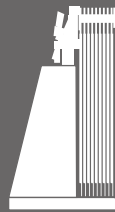


SECURITY POSITIONS



Security position 1

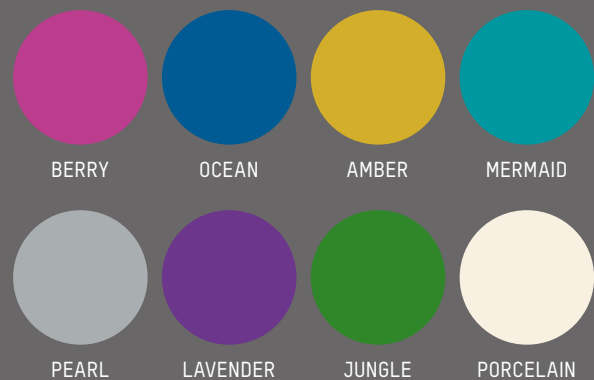
At a wind speed of 54km/h



Security position 2

At a wind speed of 63km/h

COLORS



TECHNICAL DATA

POWER OUTPUT

Nominal output	2.31 kWp
Power output through bi-axial sun tracking	3,400 – 6,200 kWh/a depending on the region

SYSTEM

Module type	Glass/backsheet
Module product warranty	10 years
Module power output warranty	25 years on 80%
Cell type	Monocrystalline
Inverter module	1-phase, integrated
Inverter module guarantee	5 years
System warranty	24 months

INSTALLATION

Assembly on earth studs or concrete foundation

AREA OF APPLICATION

Temperature range -20°C to +50°C

ELECTRICAL CONNECTIONS

up to 30 m 3 x 2.5 mm<sup>2</sup> AWG 14  
 from 30 m onwards the local standards must be followed

# Independence today and for the future. And it pays off!

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WITH SMARTFLOWER POP, YOU WON'T WORRY ABOUT  
INCREASING ENERGY COSTS



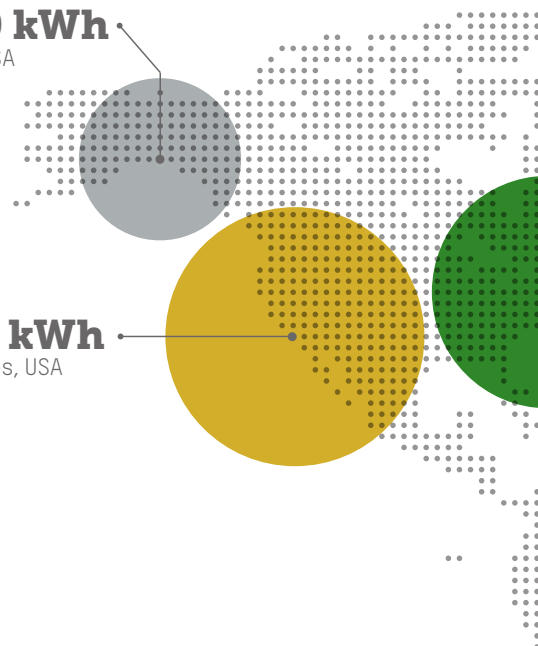
smartflower®



# Clean energy for your everyday life

**3,420 kWh**  
Juneau, USA

**5,510 kWh**  
Los Angeles, USA



## 1 HOUR of smartflower POP

- = **1x** make the tastiest lasagne in the world
- = **15** hours of your favourite movies, TV series or news
- = **101** complete smartphone charges
- = **182** hours of relaxing and reading in LED lighting

## 1 DAY of smartflower POP

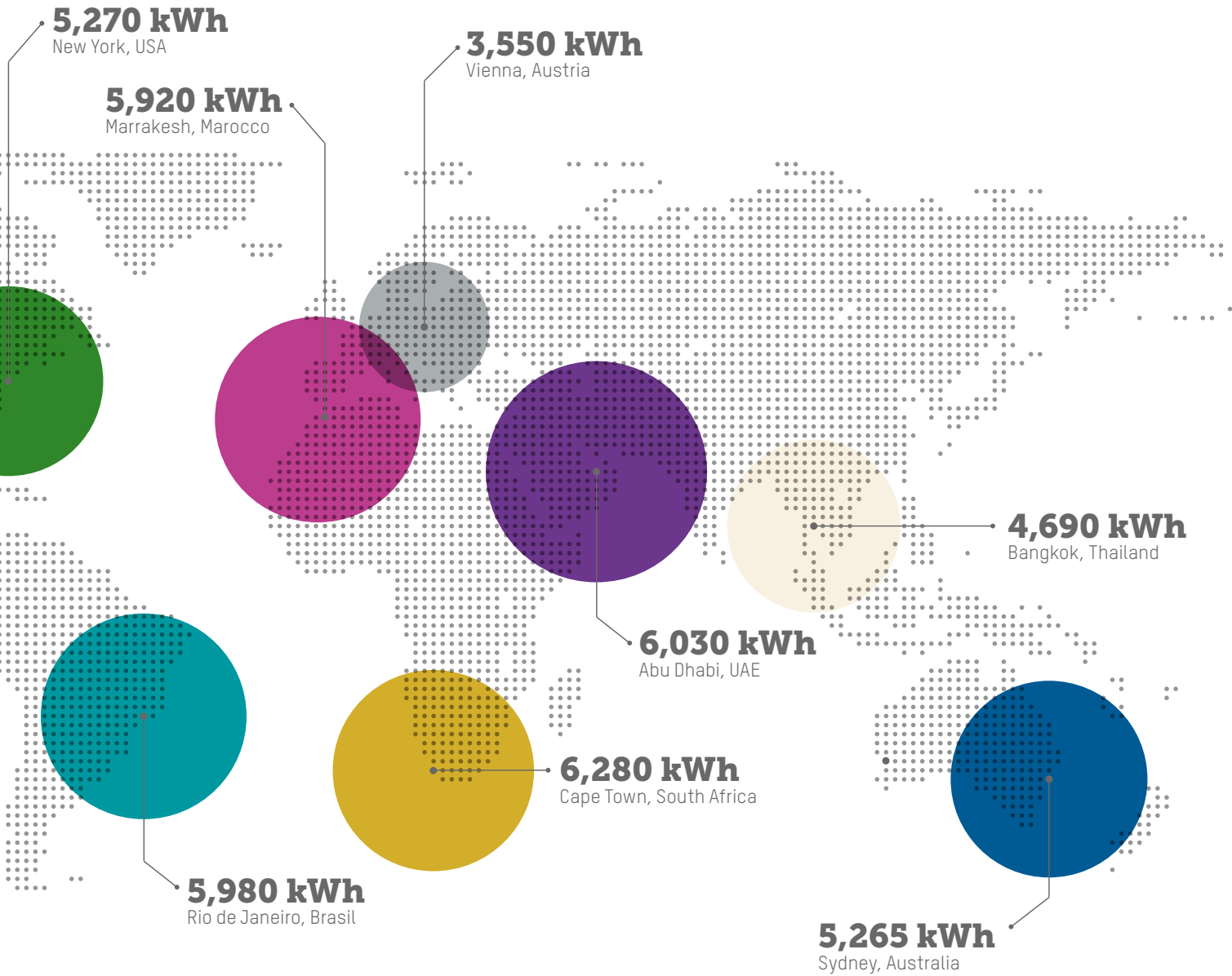
- = **3** air conditioning units – for 1 sunny day and pleasant temperatures in the entire house
- = **6x** drying laundry – if the clothes line is already completely full
- = **6x** bake the crispiest bread
- = **7x** hot showers – with continuous flow water heater
- = **17** wash loads of laundry
- = **50** cups of tea – for waking up or relaxing
- = **100** kilometres of clean driving enjoyment in your electric car

## 1 YEAR of smartflower POP

- = **ca. 4,000 kWh** – and thus the average complete annual consumption of a central European household.

smartflower POP produces – depending on the region – between 3,400 and 6,200 kWh. Numerical examples are based on approximate consumption values of the listed electrical appliances. Computational basis: in the middle of the year, twelve hours between sunrise and sunset/day.





# Unlimited independence thanks to high-end technology

FUNCTIONS RELIABLY EVEN DURING LESS SUNNY HOURS

The innovative bi-axial sun tracking of the solar fan enables increased output by up to 40% and thus a sufficient amount of energy to maintain independence from electricity providers, even where it is less sunny.

# Made in Austria – an all-in-one solar system completely from one source

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FOR MAXIMUM RELIABILITY







# Clean energy for all. Our vision for the future

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SMARTFLOWER STANDS FOR THE FOLLOWING

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Sustainable ways of thinking and being proactive are the elementary supporting pillars of our company's philosophy. Manufacturing takes place in Austria using high quality materials so that our products produce electricity as long as possible. 25 years – we guarantee this is with our module performance guarantee. We also create jobs in an emerging, future-oriented branch of industry.

With smartflower POP, we want to tell the world that photovoltaic systems can be completely simple, efficient and above all designed to perfection. We want to enable more people than ever to produce their own clean electricity for their households. We want to make cities, communities and companies independent; to free them from the load of increasing energy costs to the greatest extent possible. The fact that our systems are used successfully even in humanitarian crisis areas fills us with great pride.

We work very closely with local certified dealers, which paves the way for efficient regional support. For you this means: everything from one source, short distances and fast reaction times. In fact, that's our vision of a consistent and sustainable business.

Let our vision inspire you!

## 5 reasons why you should buy smartflower POP

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- ✓ All-in-One solar solution without extensive installation (Plug & Play)
- ✓ Efficient energy production: up to 40% more output due to innovative smart tracking, on demand exactly when you need it
- ✓ Thanks to smart cooling and smart cleaning, common losses in output due to heat and contamination are prevented by up to 15%
- ✓ Ideal if your roof is not an option (installation, aesthetics, rental property): smartflower POP can be set up in the garden and can be taken along when you move
- ✓ Highest quality made in Austria and best support from local dealers

## And it's that easy

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- ✓ Use our dealer location search on [www.smartflower.com](http://www.smartflower.com)
- ✓ Arrange an appointment by phone
- ✓ Let a dealer help you find the perfect installation site
- ✓ Wait in eager anticipation for the delivery
- ✓ Then simply setup, connect and use
- **Now you can produce your very own clean electricity!**

# **We look forward to receiving your call!**

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YOUR ON-SITE SMARTFLOWER PARTNER

