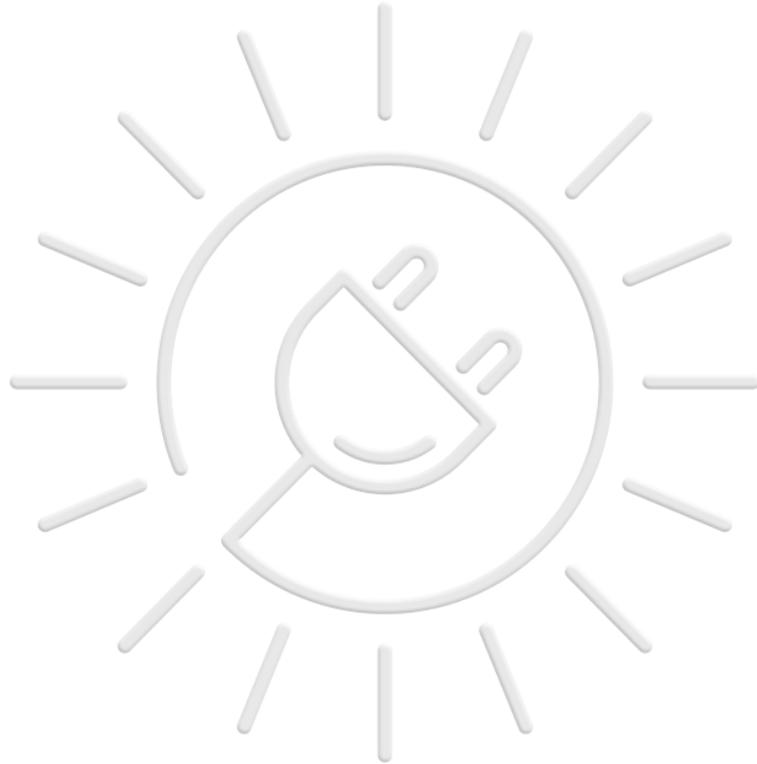


# SMA Energy Systems



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Page 04	SMA Energy Systems Home
Page 16	Components of the SMA Energy Systems Home
Page 18	SMA Energy Systems Business
Page 32	SMA Energy Systems Business starter packages
Page 36	Benefits for PV-Professionals

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The energy world is changing. Private households and companies are turning from power consumers into power producers. PV systems are increasingly common on roofs in cities and rural areas and drive the energy transition ahead. At the same time, digital technologies create completely new possibilities for actively shaping one's own energy supply and getting energy costs under control.

SMA Energy Systems allow your customers to easily take advantage of these new possibilities. Whether your customers want to generate, use and store their own solar power, monitor and control their electrical loads, heating systems and e-vehicles, or whether they want to achieve additional yields in the future by participating in the digital energy market, SMA Energy Systems offer a solution with perfectly matched components from a single source.

Applications and solutions for the home

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## Generate solar power and use it effectively

→ Page 06



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## Store solar power and use it flexibly

→ Page 08



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## Manage appliances intelligently

→ Page 10



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## Refuel with solar power

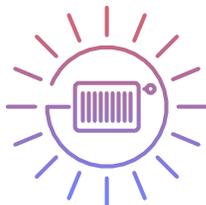
→ Page 12

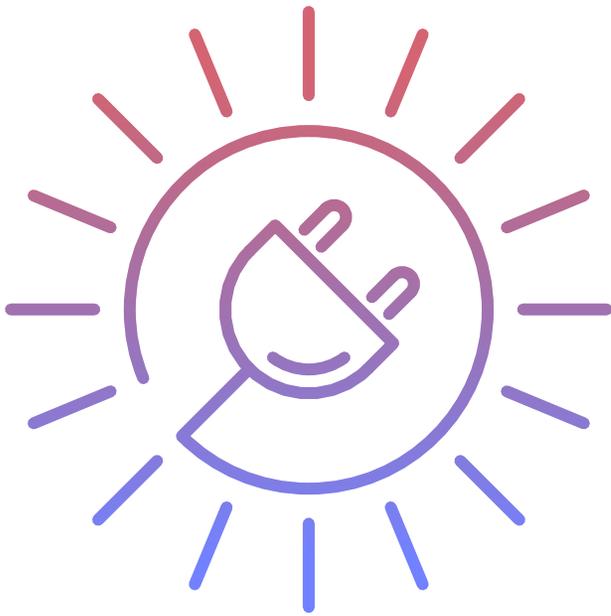


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## Solar-powered heating

→ Page 14





## Generate solar power and use it effectively

### Benefits

- + Save up to 30% on energy costs
- + Protection against rising energy prices
- + Additional income from grid feed-in or, in the future, direct marketing
- + Personal contribution to climate protection and conservation of resources

### Become your own green energy provider

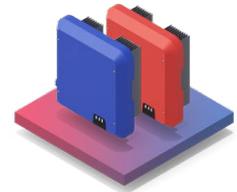
SMA Energy Systems for your home help you cut your energy costs instantly and over the long term by allowing you to exploit the unlimited power of the sun to generate free and environmentally friendly solar power. This is how you become independent from electric utility companies and do not have to worry about rising energy prices. Any solar power that you do not need can be fed into your electric utility company's grid for a fixed feed-in tariff. Since the feed-in tariff is much lower than the power purchase price, it is worth using as much self-generated power as possible to minimize the amount of additional power you have to buy. In the future, you will also be able to sell the solar power. Thanks to your SMA Energy System, you will fulfill all the necessary technological criteria for the energy market of the future.

### Components



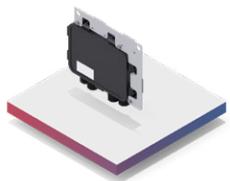
PV system

optimized for the local conditions, your requirements and your power demand



Sunny Tripower or Sunny Boy

SMA inverter that produces solar power and ensures a high self-consumption share



Optional

TS4-R

Module optimizer, ensures high module power even on complex roof structures and in heavily shaded areas



Optional

SMA Monitoring

monitor energy flows and visualize the power of your SMA Energy System via the Sunny Places web portal and, in future, via an app



SMA Smart Connected

automatically monitors your inverter and, if necessary, initiates immediate troubleshooting



## Store solar power and use it flexibly

### Benefits

- + Up to 45% lower energy costs
- + Consume more solar power yourself by storing what you do not need
- + Use free solar power even when your PV system is not producing any electricity
- + Greater protection against rising energy prices



### Sunny Boy Storage

The SMA battery inverter ensures that your solar energy is stored in the battery and is available again when needed



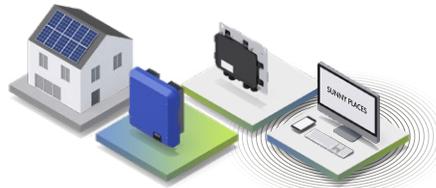
### Battery

a highly efficient solution for storing solar power

Maintain your solar energy supply – even when the sun is not shining

Sometimes, the sun delivers more power than you currently need. You would normally feed in the surplus power for a feed-in tariff that is considerably lower than the current power prices. Sometimes, however, solar power is not available when you need a lot of power – for example, if you want to charge your electric car overnight. This means that you would normally have to purchase expensive power from the utility grid. Your SMA Energy System makes it possible to consume a bigger share of your solar power yourself: Thanks to highly efficient storage systems, you can temporarily store electricity that is not needed immediately and use it later if necessary. You will therefore have to purchase less additional electricity from the grid. In fact, the benefits of consuming as much solar power as possible yourself instead of feeding the surplus power into the grid are twofold: You would receive less money for grid feed-in than you would have to pay for purchasing power from the utility grid.

### Components



### The basis: your SMA Energy System

with a PV system, SMA inverter Sunny Tripower or Sunny Boy and SMA TS4-R module optimizers (optional), SMA Monitoring (optional)  
[more information → Page 07]



### Sunny Home Manager 2.0

the Sunny Home Manager is an intelligent energy manager



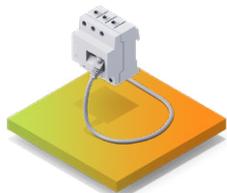
SMA Energy Meter (alternative to Sunny Home Manager 2.0)  
the high-performance measurement solution for intelligent energy management



## Manage appliances intelligently

### Benefits

- + Up to 60% lower energy costs
- + Use more solar power yourself through intelligent energy management
- + Save money and live more greenly without sacrificing comfort or convenience
- + Combine all household loads in a single system



Sunny Home Manager 2.0  
the Sunny Home Manager is an intelligent energy manager

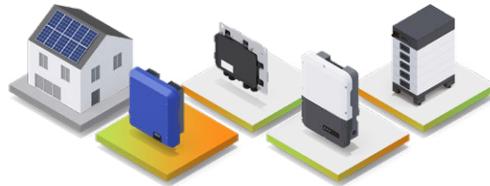


Intelligent home appliances with the EEBUS interface  
this can be integrated directly into the system and controlled (e.g., from BSH home appliances)

### Systematic and intelligent energy management

SMA Energy Systems for your home ensure that appliances such as your washing machine, dryer or dishwasher are operated only in periods when your PV system is delivering sufficient solar power – manually or completely automatically. This means that you use more self-generated solar power and do not have to purchase as much additional energy from the utility grid. By prioritizing consumption of your own solar power, you can operate home appliances with a high energy efficiency class even more economically and thus optimize your ecological footprint. The Sunny Home Manager combines all energy flows in your home to create an intelligent system and, if you require, can control them fully automatically to help you get the most out of your solar power. On the basis of an online weather forecast and your own consumption analysis, the system creates a day-by-day yield forecast. As a result, Sunny Home Manager 2.0 knows in advance exactly when a lot of solar power will be available and when the right time is to start the washing machine.

### Components



#### The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower or Sunny Boy inverters and SMA TS4-R module optimizers (optional), SMA Sunny Boy Storage battery inverter (optional) and battery (optional)  
[more information → Page 09]



Edimax SP-2101W v2 radio-controlled socket2  
this simple loads to be visualized in the system and switched on/off intelligently as required



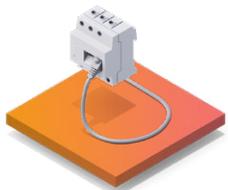
SMA Monitoring  
monitor energy flows and visualize the power of your SMA Energy System via the Sunny Places web portal and, in future, via an app



## Refuel with solar power

### Benefits

- + Up to 60% lower energy costs
- + Use more solar power yourself through intelligent energy management
- + Climate- and resource-friendly mobility – with no fossil fuels
- + Combine all household loads in a single system



Sunny Home Manager 2.0  
the Sunny Home Manager is an intelligent energy manager



Compatible charging system  
this prioritizes self-generated solar power for charging your e-vehicle. The system is compatible with the charging systems of various manufacturers.

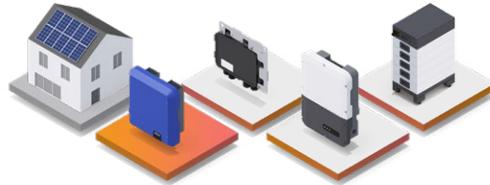


SMA Monitoring  
monitor energy flows and visualize the power of your SMA Energy System via the Sunny Places web portal and, in future, via an app

### Driven by the sun

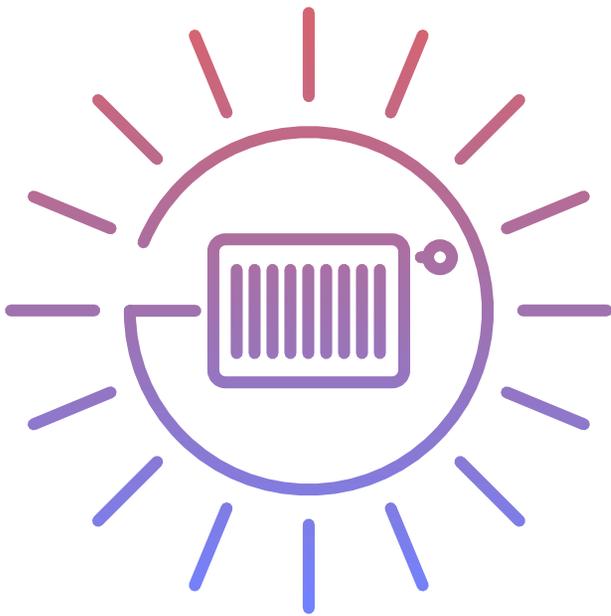
SMA Energy Systems for your home make e-mobility ecologically and economically sensible: Thanks to Sunny Home Manager 2.0, you can charge your electric vehicle when your PV system is delivering enough solar power for this. On the basis of an online weather forecast and your own consumption analysis, the system creates a day-by-day yield forecast. As a result, Sunny Home Manager 2.0 exactly knows in advance when a lot of solar power will be available. This helps increase the share of solar power that you consume yourself. Every kilowatt hour of solar power that you consume is power that you no longer have to purchase at high cost from your electric utility company. The power is converted directly to kilometers – it could not be any easier, cleaner or more cost-effective! The Sunny Home Manager 2.0 shows the solar share of your consumption. On this basis, you can easily calculate how many kilometers you have driven with solar power. Sunny Home Manager 2.0 connects your electric car and all other loads to create a single, intelligent system. All consumption cycles are controlled so that you consume as much solar power as possible, which in turn helps you cut your energy costs considerably.

### Components



#### The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower or Sunny Boy inverters and SMA TS4-R module optimizers (optional), SMA Sunny Boy Storage battery inverter (optional) and battery (optional)  
[more information → Page 09]



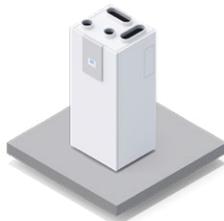
## Solar-powered heating

### Benefits

- + Up to 60% lower energy costs
- + Use more solar power yourself through intelligent energy management
- + Climate-friendly home heating – with no fossil fuels
- + Combine all household loads in a single system



Sunny Home Manager 2.0  
the Sunny Home Manager is an intelligent energy manager

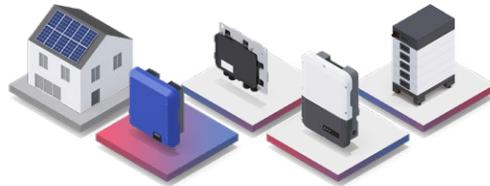


Compatible heat pump  
this converts ambient heat to usable heat for which power is needed (e.g. from Stiebel Eltron, Vaillant, Wolf and my-PV)

### Cut your heating costs

Thanks to SMA Energy Systems for your home you can also use your self-generated solar power to heat your home – for example, using a heat pump or heating element. Sunny Home Manager 2.0 controls the system so that solar power is prioritized for running the heat pump and the surplus energy is efficiently stored for later use in a thermal storage system. On the basis of an online weather forecast prepared by SMA and your own consumption analysis, the system creates a day-by-day yield forecast. As a result, Sunny Home Manager 2.0 knows in advance when exactly a lot of solar power will be available – and when the right time is to fill the thermal storage system via the heat pump. Integrating your heating system allows you to consume more of your own solar power, which reduces the amount of additional power you need to purchase from the utility grid. It is always worth consuming as much solar power as possible yourself instead of feeding the surplus power into the grid: You would receive less money for grid feed-in than you would have to pay for purchasing power from the utility grid. In this way, you can dramatically cut your heating costs and, in turn, your overall energy costs.

### Components



#### The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower or Sunny Boy inverters and SMA TS4-R module optimizers (optional), SMA Sunny Boy Storage battery inverter (optional) and battery (optional)  
[more information → Page 09]



Thermal storage  
this saves the heat generated by the heat pump for later use

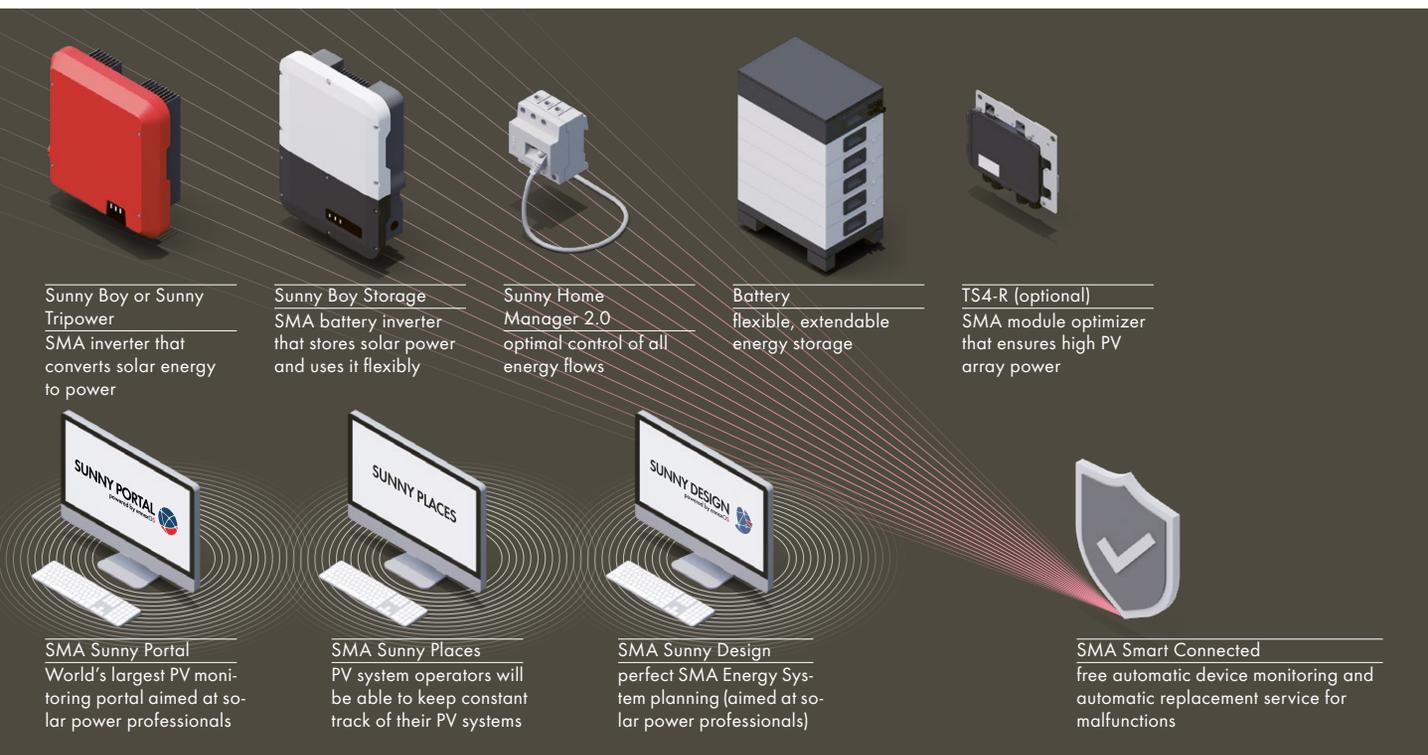


SMA Monitoring  
Optional  
monitor energy flows and visualize the power of your SMA Energy System via the Sunny Places web portal and, in future, via an app

## Individual solutions for your home.

The SMA Energy System for your home can be easily planned thanks to Sunny Design. With its modular structure, you can start with the comprehensive system or a smaller solution and gradually expand it, depending on what best suits your needs and budget.

### SMA Energy Systems Home components



Applications and solutions for businesses, supermarkets and agriculture

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## Generate solar power and use it effectively

→ Page 20



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## Store solar power and use it flexibly

→ Page 22



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## Manage energy

→ Page 24



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## Fill up on solar power Coming soon.

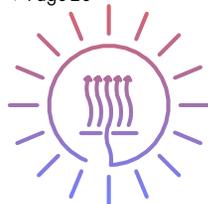
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## Use solar power for heating Coming soon.

→ Page 28

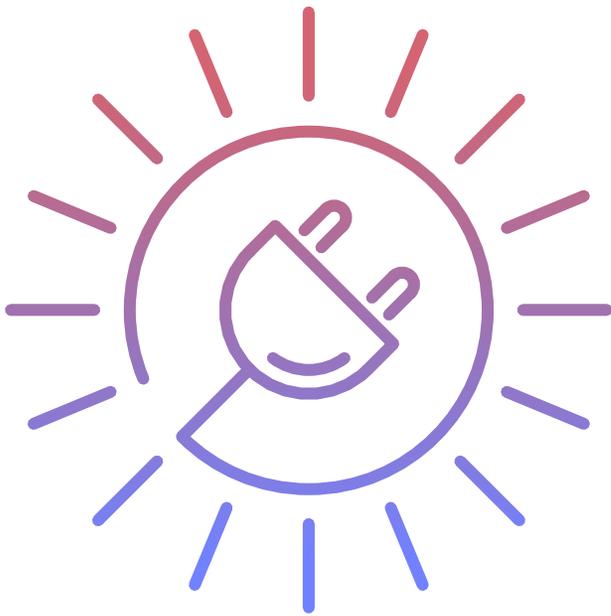


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## Sell your solar power – directly and with ease

→ Page 30





## Generate solar power and use it effectively

### Benefits

- + Up to 30% lower energy costs
- + Planning reliability and protection against rising energy prices
- + Particularly high yields increase ROI (Return on Investment)
- + Additional income from grid feed-in
- + Tax benefits through deduction of capital expenditure and special depreciation
- + Enhanced image through demonstration of commitment to climate protection and conservation of resources

### Economically beneficial, ecologically exemplary

SMA Energy Systems for Business help you cut your energy costs easily and long term by generating environmentally friendly solar power for your company. This will ensure that you are less reliant on electric utility companies and allow you to plan your future power supply more reliably. Any solar power that is not used in your company can be fed into the utility grid for a fixed feed-in tariff. In addition, a PV system on your roof shows your customers and employees that you are serious about achieving your environmental targets. And from a system size of 100 kWp, you will benefit from the proceeds of direct marketing on the power exchange. To achieve this, you will also need the optional SMA Data Manager M, which monitors the energy flows and controls the volume of power that is not required.

### Components



PV system

optimized for the local conditions, your requirements and your power demand



Sunny Tripower CORE1

SMA inverter that produces solar power



Optional

SMA Data Manager M

Energy manager that operates in conjunction with SMA Monitoring and is responsible for communication and overall system monitoring



Optional

SMA Monitoring

enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)



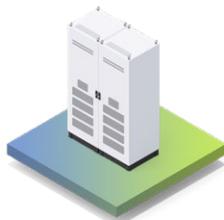
## Store solar power and use it flexibly

### Benefits

- + Cut energy costs by up to 40%
- + Cap load peaks by using stored solar power as and when needed
- + Increase self consumption of solar power: the most cost-effective use
- + Optimized use of time- and performance-based energy supply tariffs
- + Yields of up to 18%  
(reference example: [gosma.de/SESde](http://gosma.de/SESde))



**Sunny Tripower Storage 60**  
SMA battery inverter: Store solar power temporarily in the SMA battery-storage system and make it available as required



**SMA battery storage**  
highly efficient solution for storing solar power

### Use solar power when it is worthwhile

Whether in small or medium-sized businesses, supermarkets or agricultural facilities, load peaks are a problem for any company. If the power consumption exceeds the quantity agreed upon with the electric utility company, this can lead to increased provision charges for all the power – often over the entire year. But a highly efficient battery-storage system can help you avoid expensive load peaks by allowing you to store solar power temporarily and use it whenever you need it. When a load peak is expected, the required power is drawn not from the utility grid but from the battery-storage system. Your electric utility company will stay completely unaware of this, and your rate will remain exactly as it is. However, battery-storage systems have other uses. In addition to helping you manage load peaks, for example, you can continue supplying operational machines with solar power even when the sun is not shining in turn reducing the amount of power that you need to purchase. This means that you increase the share of self-generated power in your company's energy mix – the most cost-effective use of solar power.

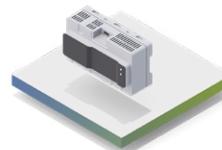
### Components



**PV system**  
optimized for local conditions, your requirements and your power demand



**Sunny Tripower CORE1**  
SMA inverter that produces solar power



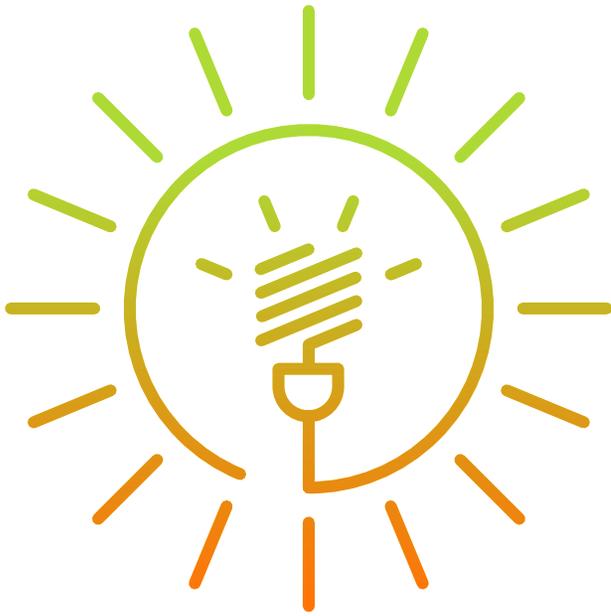
**SMA Data Manager M**  
Energy manager that operates in conjunction with SMA Monitoring and is responsible for communication and overall system monitoring

Optional



**SMA Monitoring**  
enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)

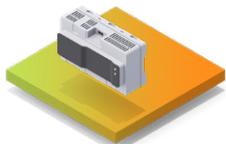
Optional



## Manage energy

### Benefits

- + Cut energy costs by up to 50%
- + Increase self consumption of solar power through intelligent energy management
- + In the near future:  
Harmonize and automatically control energy flows to avoid load peaks
- + One contact person for large parts of your energy supply



#### SMA Data Manager M

Energy manager that operates in conjunction with SMA Monitoring and is responsible for communication and overall system monitoring



#### SMA Monitoring

enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)

### Components



#### The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower CORE1, SMA Sunny Tripower Storage 60 (optional), SMA battery storage (optional)  
[more information → Page 23]



#### SMA Energy Meter

monitors all energy flows



Coming soon.

## Fill up on solar power

### Benefits

- + Cut mobility costs
- + Make costs transparent through monitoring and achieve optimization potential
- + Climate- and resource-friendly mobility - with no fossil fuels

### Saving costs with integration of e-vehicle fleet

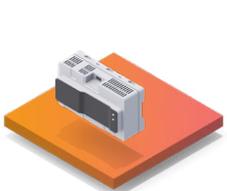
SMA Energy Systems for Business will soon enable the integration of charging systems (e.g., Mennekes, SMA EV Charger) into your company electric vehicles. This makes it easy for you to charge your electric vehicles with solar power from your PV systems and lower your mobility costs. With SMA Energy Systems for Business, you are perfectly positioned to meet upcoming requirements. Continue to reduce your mobility costs by electrifying your vehicle fleet and charging your vehicles with self-generated solar power. Whether company cars, commercial vehicles or floor-bound transportation vehicles for intralogistics - with our modular and expandable system, you are perfectly prepared for the future. You can already start planning with SMA. Do not miss out on the opportunity in the near future to generate additional yields by selling your self-produced solar power to customers or guests.

### Components



The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower CORE1, SMA Sunny Tripower Storage 60, SMA battery storage, SMA Data Manager M  
[more information → Page 23]



#### SMA Data Manager M

Energy manager that operates in conjunction with SMA Monitoring and is responsible for communication and overall system monitoring



#### SMA Monitoring

enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)



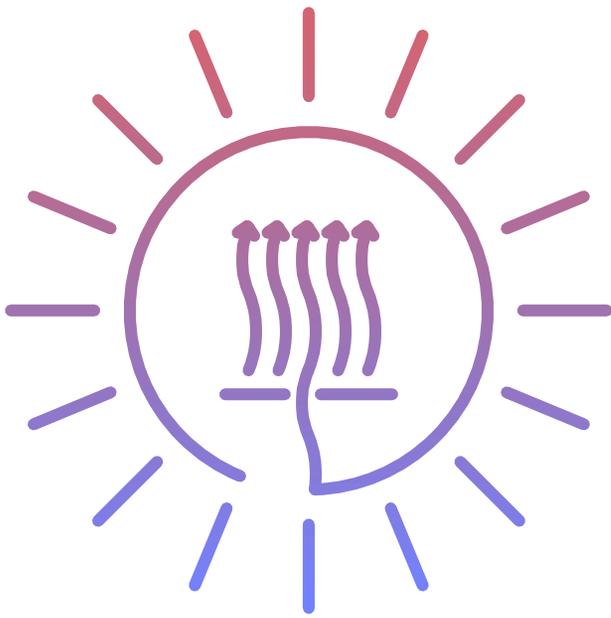
#### SMA Energy Meter

monitors all energy flows



#### Compatible charging system

uses self-generated solar power for charging your electric vehicles

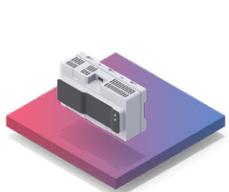


Coming soon.

## Use solar power for heating

### Benefits

- + Cut energy costs by up to 50%
- + Increase self consumption of solar power through intelligent energy management
- + Heat your business in an eco-friendly manner without fossil fuels and never pay for gas or oil bills again
- + Integrate heating, power generation and consumption to create a holistic system



#### SMA Data Manager M

Energy manager that operates in conjunction with SMA Monitoring and is responsible for communication and overall system monitoring



#### SMA Monitoring

enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)

### Make heating with fossil fuels a thing of the past

Your SMA Energy System for Business ensures monitoring of your operational heat supply. You can now manually integrate power-consuming heating systems such as heat pumps, CHPs and boilers into your energy systems and supply them with self-generated solar power from your PV system – directly from your roof or from the battery-storage system. In the near future, it will be possible to control them automatically. If you use an energy system based on renewable energy – a heat pump, for example – you can heat your business without causing CO<sub>2</sub> emissions and never have to pay another gas or oil bill. With a thermal storage system, you can store additional solar energy that you can use to heat your building or to heat water. This helps increase the share of solar power that you consume yourself. This is the most cost-effective use, since your cost for using additional power is higher than what you receive for the grid feed-in of power.

### Components



The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower CORE1, SMA Sunny Tripower Storage 60, SMA battery storage, SMA Data Manager M  
[more information → Page 23]



#### SMA Energy Meter

monitors all energy flows



Compatible heat pump or other power-consuming heating systems requires power to operate



## Sell your solar power – directly and with ease

### Benefits

- + Additional yields through direct marketing from 100 kWp
- + It could not be easier to become an energy trader – a signature and one click that's it
- + No extra hardware required means no extra costs
- + Receive your revenue reliably and automatically

### Generate additional yields on the energy exchange with ease

According to the Renewable Energy Sources Act (EEG), PV systems from 100 kWp are required to sell surplus power directly and cannot simply feed it into the grid for a fixed feed-in tariff. Many PV system operators avoid the time and effort involved in doing this and instead plan systems that remain just below this threshold. But they miss out on additional income that they could generate through direct marketing. SMA SPOT makes direct marketing remarkably easy with perfectly harmonized system technology – including remote control and online data monitoring – you can use to easily and sustainably integrate your PV system into direct marketing. We will support you in complying with all relevant legal requirements. A signature and one click, that's it – the rest will be done by your SMA Energy System in conjunction with SMA Data Manager M. This will help you optimize yields and boost the efficiency of your investment. From 2021, SMA SPOT will support direct marketing from older systems too, which at that point will stop receiving the Renewable Energy Sources Act (EEG) feed-in tariff.

### Components



The basis: your SMA Energy System

with a PV system, SMA Sunny Tripower CORE1, SMA Data Manager M [more information → Page 23]



#### SMA SPOT

the direct marketing service from SMA and the MVV direct marketer: the best way to sell your solar power on the energy exchange



#### SMA Monitoring

enables easy and efficient online monitoring of your SMA Energy System (with Sunny Portal powered by ennexOS and via mobile app)

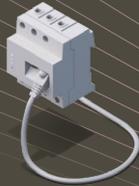
## All-inclusive: the preconfigured packages for businesses, supermarkets and agriculture

SMA Energy Systems for Business are modular in structure and can be planned very easily according to your individual requirements thanks to Sunny Design Pro. For standard applications, we have created two packages that will help you achieve your goals more quickly and easily than ever before.

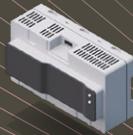
### SMA Energy Systems for Business: components of the S package



2 x Sunny Tripower  
CORE1 + power supply  
unit  
generates usable solar  
power



SMA Energy Meter  
monitors all energy  
flows



SMA Data Manager M  
powered by ennexOS  
simple control of the  
entire system



SMA Monitoring  
keep an eye on all energy sectors with  
Sunny Portal powered by ennexOS  
and via mobile app



SMA Smart Connected  
free automatic device monitoring and  
proactive communication in case of  
malfunction

10-year system warranty  
All-in-one carefree service for all  
products in the package

# SMA Energy Systems for Business: components of the XL package



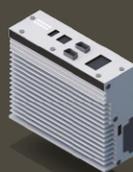
4 x Sunny Tripower CORE1 + power supply unit generates usable solar power



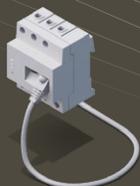
Sunny Tripower Storage 60 store solar power and use it flexibly



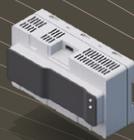
SMA Storage Business battery-storage system exceptional system efficiency



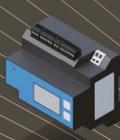
SMA Inverter Manager easy control of the battery inverter



SMA Energy Meter monitors all energy flows



SMA Data Manager M powered by ennexOS simple control of the entire system



Janitza UMG 604 Power analyzer



SMA Monitoring keep an eye on all energy sectors with Sunny Portal powered by ennexOS and via mobile app



SMA SPOT Direct marketing service from SMA and the MVV direct marketer



SMA Smart Connected free automatic device monitoring and proactive communication in case of malfunction

10-year system warranty + service commissioning All-in-one carefree service for all products in the package

# SMA Energy Systems

## Benefits for PV-Professionals

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### SMA Energy Systems

#### Deliver one system from a single source

Thanks to the SMA Energy System, you can offer your customers a solution tailor-made to their individual needs – with perfectly matched components from a single source.

### SMA Commissioning Support

#### Commission even highly complex systems with ease

When you commission complex systems SMA can dispatch a specially qualified system technician to the site – and we will do this as often as you require.

### SMA Smart Connected

#### Detect problems before they cause problems

With SMA Smart Connected, SMA is the first manufacturer to offer free, automatic inverter monitoring that helps you provide your customers with a proactive, targeted service.

### Sunny Design Pro

#### Holistic energy system planning

Sunny Design Pro enables for the first time ever the planning and simulation of complex energy systems across all sectors – in just a few clicks.

### Sunny Portal powered by ennexOS

#### Easy, efficient and fast PV system monitoring

With Sunny Portal powered by ennexOS, you can access online and at any time the most important data for the SMA Energy System you have installed.

### Repowering, upgrading, extended warranty

#### Maintain excellent long-term customer relations

The SMA Energy System grows with the needs of its users and your business. As a result, you can continuously generate new orders for yourself and leverage your sales potential.

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