

ÖkoFEN



100% independency - even in winter!

# my365 ENERGY

All year self-produced electricity  
and heat from wood pellets and solar



# The desire for 100% independence becomes reality

„In the sense  
of a liveable world  
for the coming generations.“

ÖkoFEN's **myEnergy365** is the answer to the question of independent and ecological power and heat generation in your own home.

The holistic approach, which intelligently combines the latest technologies, opens up the unique opportunity to use 100% ecological heat and self-generated electricity from pellets and sun in a single-family home.

The concept is modular. The innovation is offered as a complete system, but can also be realized step by step. Even existing power generators (such as PV systems) can be easily integrated.

According to demand and budget, consumers are becoming step by step even more independent.

The solution for  
**100 %**  
self-generated  
heat and electricity



# The complete myEnergy365 system

Pellet boiler with integrated Stirling engine  
Pellematic Condens\_e



Consumers in the household



power2heat  
power2charge

PELLETRONIC TOUCH



PV panels



Public power grid



Smart Meter



Inverter with battery charging function

Power storage



## The heart of power generation

# Pellematic Condens\_e

The Pellematic Condens\_e is the center of the myEnergy365-system. With its condensing technology it is one of the most efficient pellet boilers with condensing technology. It provides 100% cosy warmth and 100% of the needed hot water.

For a later retrofit of the Stirling engine we offer an „eReady“ version of the boiler. This preparation ensures a simple re-fitting of the power generation unit. Renewable fuels can thus be converted into low-emission and climate-neutral electricity.

### Highly efficient technology



Efficiency at the highest level. The latest generation of condensing technology gets even more power out of each kilogram of wood pellets.

Up to 15% more efficiency - standard on all Condens models.

### eReady Package



The eReady package prepares the Pellematic Condens for the later retrofitting of a Stirling engine.

In the future, your heating system will also generate electricity.

### Own electricity in winter



With the economical Pellematic Condens\_e, you reduce not only your heating costs. You also produce your own electricity - even in winter, when the PV system does not produce any yield.

For  
new and  
renovated  
buildings



**Fits into any  
boiler room**



Measuring only 72 x 73 cm, the Pellematic Condens\_e is one of the most compact pellet boilers on the market and fits into any boiler room. Even with the Stirling engine the systems stays very compact.

**Full comfort**



The Pellematic Condens\_e offers highest comfort. Minimal cleaning and ash emptying are just as convincing as the particularly low-noise operation.

**All data  
at a glance**



Networking the boiler with the Internet increases the intelligence of the system.

The processing and visualization of all boiler data allows even more efficiency.



# The technology for your energy freedom



Photovoltaic technology is the best solution for summer power generation.

The required space for a pv installation is about 35 m<sup>2</sup>. The power of the PV system should be between 5 and 8 kW<sub>peak</sub>. Existing photovoltaic systems can be used in the myEnergy365 concept. Without a power storage unused electricity is fed into the public grid.

A power storage is the ideal supplement to a PV system. With this about 70% independence can be achieved.

By storing the electricity, the generated electricity can also be used when the sun is no longer shining. With the battery, the time between power generation and use is bridged.

\* Permanent island operation on request



# Step by step to independence

Decide flexibly how independent you want to be



## Pellematic Condens

with 10 - 16 kW thermal power and eReady package



Photovoltaic  
enables

**30%**  
independence

## Photovoltaic system

The PV system covers around 30% of the electricity demand of a single-family home.

More than two-thirds of the pv yield is fed into the grid and is usually poorly paid. Better than feeding electricity into the public grid is increasing your own consumption, with a power storage unit.



With PV  
+ battery  
**70%**  
independence  
is possible

## Power storage with emergency power function

An ideal complement to the PV system is the power storage, which provides around 70 % independence.

By storing the solar power, this power can also be used when the sun is not shining. With the emergency back up power function, the battery supplies the house even in the event of a blackout. Recharging of the battery with the PV system and the Stirling engine is still possible in the event of a blackout.



With PV  
+ battery  
+ pellet chp  
**100%**  
independence  
is possible

## Pellet boiler with Stirling engine

The Stirling engine is powered by the pellet boiler and delivers electricity on days when the PV system can not produce any yield. This is especially the case during the winter months from November to March.

**The Stirling engine achieves up to 100% independence.**

\* Requirements for a fully self-sufficient operation can be found on the last page.

Perfect interaction of the components

# A complete system for heat and electricity

All the data of the power generators and electricity and heat storage are combined in the **Pelletronic** energy management.

The combination of these data with weather forecasts and user habits al-

lows the comfortable enjoyment of an innovative energy system without manual intervention.

The Internet connection allows remote access via app and access to monitoring information.

## Intelligent through live weather data



Networking the boiler with the Internet increases the intelligence of the system.

The system recognizes the weather trend and reacts with system adjustments that lead to more efficiency and thus lower heating costs.

## Coordinated power generation



The Pelletronic energy manager always knows the electricity production of the individual generators and adjusts them to the current electricity demand.

The Stirling engine will not start if the PV system is supplying enough electricity.

## Smart Home Interfaces



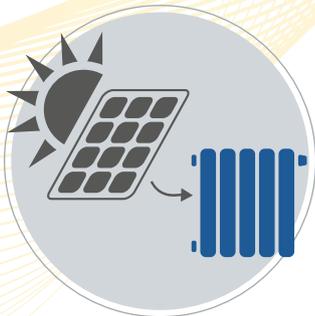
„The MOD-BUS interface ensures that the Pelletronic controller can be connected to almost any house management system.

Thus, heating becomes an integral part of home automation.“

# my365 ENERGY

## Use surplus electricity sensibly in your own house

### power2heat



If enough power is available from the PV system, this function enables the heating of the hot water by solar power.

This saves heating costs, as the sun sends no bill.

### power2charge



If the energy storage devices are fully charged in the building, existing PV power can also be used to supply electric vehicles.

The electrical car in the garage will be refueled for free.

## All data at a glance



The processing and visualization of all boiler data allows even more comfort.

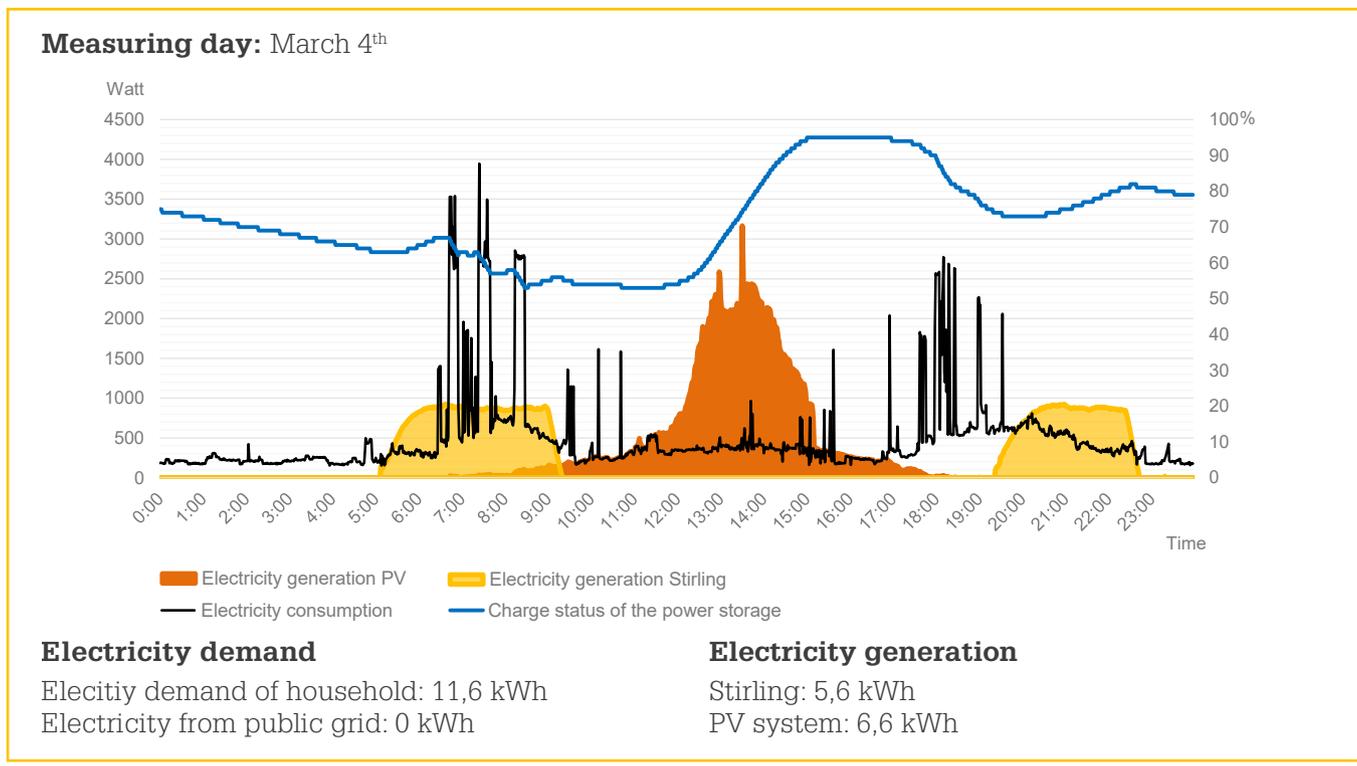
All energy data can optionally be sent by email to the user. This data is also available on the platform [my.oekofen.info](http://my.oekofen.info).

A modern two-story house with a white upper level and a lower level featuring horizontal wood cladding. The house has a gabled roof with exposed wooden rafters. A row of solar panels is mounted on a flat roof extension. To the right, a carport with a wooden interior houses a white car. The house is surrounded by greenery, including a stone retaining wall and various plants in the foreground. The sky is blue with scattered white clouds.

Filling the pellet  
storage just once and  
and **enjoy energy  
freedom all year.**

# Energy monitoring

## Example of a daily course



The course of the day at the myEnergy365 model house shows one day in March.

The power generation of Stirling engine and PV system complement each other ideally. In the morning and evening, the Stirling engine produces electricity, when the sun is shining during the day, the PV system is generating electricity.

The power storage (blue line) is discharged during the night hours. The power consumption

(black line) is provided in the morning for the most part by the Stirling engine. The PV system supplies enough power at noon to fully recharge the power storage.

These data (power consumption, battery charge level, power generation, grid feed-in, grid connection, electricity surplus usage) are always up-to-date available to the user and will be sent by email as daily, weekly and monthly reports on request.

# Economic efficiency

## Does this investment also make financial sense?

The myEnergy365 system is an investment for the future, so money can be saved in addition to energy costs. To illustrate this, we have prepared a sample calculation for Germany and Austria. We explain the

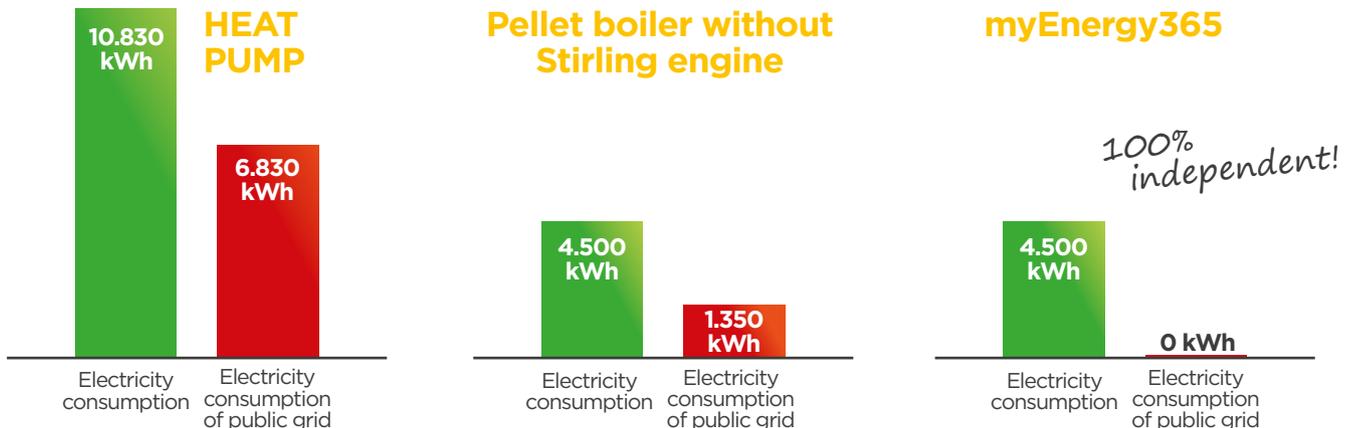
investment costs you have to expect and how high the savings are on [www.oekofen-e.com/de/wirtschaftlichkeit/](http://www.oekofen-e.com/de/wirtschaftlichkeit/)

## Independence of different systems

A family house with a 5 kWp PV system and an already installed power storage with 10kWh capacity is the basis for comparing the independence of different heating systems. The comparison of heat pump, pellet boiler and pellet CHP shows clearly that the goal of 100% independence can only be achieved with the pellet CHP system.

Just the total myEnergy system is able to avoid electricity consumption from the grid.

For a house with an air heat pump installed, about five times as much electricity has to be purchased from the public grid compared to a normal pellet boiler.



The comparison of the different systems was based on the following data and assumptions:

Family house with a heating load of 9 kW and a heating requirement for heating and hot water of 19,000 kWh per year. Electricity consumption of the house is 4,500 kWh. A PV system with 5 kWp is installed. When using an air heat pump as heating, an annual performance factor of 3.0 was assumed. Experience values for proportionate electricity generation and use (use to cover own requirements on site, intermediate storage in battery storage etc.) were determined on the basis of the following sources, among others: [http://www.e-sieben.at/de/projekte/1515\\_LWP.php](http://www.e-sieben.at/de/projekte/1515_LWP.php); [http://www.pv-magazine.de/archiv/artikel-pvd/beitrag/pv-system-mitwrmepumpe-ideal-betreiben\\_100019403/720/?tx\\_ttnews\[backCat\]=33&cHash=41a0bbdb79a7cbca6e3a2c7c2178e266](http://www.pv-magazine.de/archiv/artikel-pvd/beitrag/pv-system-mitwrmepumpe-ideal-betreiben_100019403/720/?tx_ttnews[backCat]=33&cHash=41a0bbdb79a7cbca6e3a2c7c2178e266).

# Satisfied customers examples

*„For us it is a really good feeling to live without fossil energies.“*

Family Sperl from Scharnstein (Austria) has fulfilled their dream of energy freedom within their own four walls. In February 2014, Mr. Sperl exchanged the existing log wood boiler to an electricity-producing pellet boiler system with a Stirling engine and has been using 100% renewable energy ever since. For the „persuader“ an obvious consequence, because Mr. Sperl also focuses on progress and forward-looking concepts in mobility: He has been driving an electric car for years, which he now always fills up with sustainably produced electricity.



**„By conviction we use  
100% green energy.“**

Since October 2014, the cellar of the Seebacher family has been fitted with a pellet chp system with integrated Stirling engine.

Together with the solar thermal system, the innovative energy system not only covers the entire heat requirement, but also 100% of the electricity needs of the 180m<sup>2</sup> home - to the delight of the family, completely without nuclear energy. „Because even my grandchildren should find a livable world,“ Mr. Seebacher describes his conviction.





*„We're proud of our  
independent energy supply.“*

The Brommer family from Stuttgart (Germany) is using a electricity-producing pellet heating system since 2017. In combination with the photovoltaic system and a power storage, the pellet boiler with Stirling engine covers the entire electricity and heat requirements of the home. In addition, even the Tesla is charged with self-produced electricity.

„We are proud to have found an independent and at the same time environmentally friendly energy supply for our home“, the Brommer family is happy about the advantages of their new heating system.



# „We are already independent!“

*„We have fulfilled our  
dream of energy freedom.“*

In „Leitl Vital Sonnenhaus Pro“ in Upper Austria's Schwertberg, completed in October 2016, energy-free living in a detached house becomes reality.

In the living space of 170 m<sup>2</sup> traditional elements are combined with state-of-the-art technology. The new building is also one step further in terms of energy supply: The electricity-producing pellet heating system, in combination with the Fronius power storage system and a photovoltaic system, ensures a 100% self-sufficient energy supply.



# Space-saving pellet storage

For the storage of the annually needed amount of wood pellets for a single-family home only about 4 m<sup>2</sup> are needed. Thanks to flexible storage solutions, this space can be located in the basement, in the utility room or even up to 20 meters outside the house.

With a Flexilo Compact fabric tank, the pellets are stored space-saving and protected from humidity. From 3.3 to 8.5 tons of pellets - for every space and pellets requirement, a matching version is available.



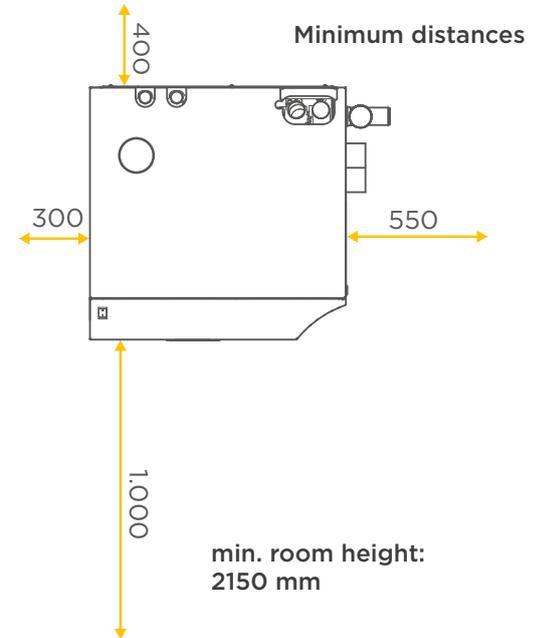
## Technical data Flexilo Compact

Designation	Filling quantity	Length	Width
	Height: 240 cm	mm	mm
Flexilo Compact KGT1814	2,7 - 3,3 to	1.840	1.440
Flexilo Compact KGT1818	3,4 - 4,0 to	1.840	1.840
Flexilo Compact KGT2614	4,0 - 4,7 to	2.580	1.440
Flexilo Compact KGT2618	5,0 - 6,2 to	2.580	1.840
Flexilo Compact KGT2620	5,5 - 7,0 to	2.580	2.040
Flexilo Compact KGT2626	7,2 - 8,5 to	2.580	2.580

# Technical Data & General Requirements

## Pellematic Condens\_e

Minimum room height	215 cm
Dimensions (W x D x H)	73 x 72 x 182 cm
Thermal power	9 - 16 kW
Average electrical output	600 W
Peak electrical power	1.000 W
Energy efficiency class	A+++



## Fronius Solar Battery 12.0

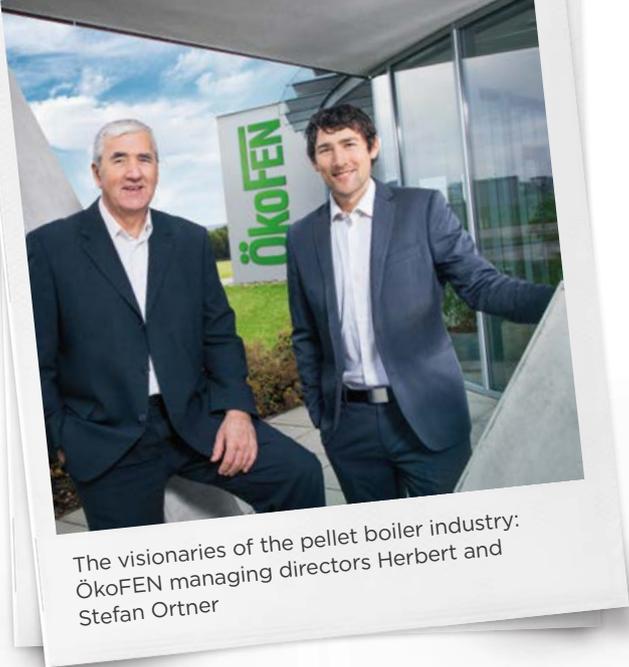
Usable capacity	9,6 kWh
Dimensions (W x D x H)	955 x 570 x 611 mm
Nominal (discharge) charging power	6.400 W
Max. (Discharge) charging current	16 A
In emergency power mode	3-phase withdrawal
Battery technology	LiFePO4 (Lithium Ions)
Ambient temperature range	5 - 35°C

## Fronius Symo Hybrid 5.0-3-S

Dimensions (W x D x H)	645 x 431 x 204 mm
Number of MPP trackers	1
Max. PV input power	8,0 kW
DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )	150 - 1000V
Ambient temperature range	-25 - + 60°C

### The requirements for a fully self-sufficient operation are:

- The heat load of the building is approx. 10-16 kW.
- The minimum installed capacity of the PV system should be 5 kW<sub>peak</sub>.
- The minimum volume of the thermal buffer tank is 1.000 litres.
- The rated capacity of the battery storage is at least 12 kWh (usable capacity 9.6 kWh).
- From two consecutive days with little sunshine, electricity consumption may not exceed 10 kWh per day.
- A heat sink (pool, heatable cellar rooms, etc.) is required to extend the running time in periods of bad weather.
- The PV system must not be snow-covered permanently in winter.
- Existing inverters are not compatible with the myEnergy365 system and need to be replaced.



The visionaries of the pellet boiler industry:  
ÖkoFEN managing directors Herbert and  
Stefan Ortner

ÖkoFEN

# ÖkoFEN\_e

## Electricity and heat from wood pellets



ÖkoFEN, Europe's specialist for pellet heating systems, has been setting new milestones in the pellet industry since its founding in 1989.

With innovations such as the world's first pellet boiler with condensing technology or electricity-producing pellet heating system, the pellet specialist caused a sensation.

ÖkoFEN is internationally recognized as a pioneer and innovator of Stirling technology in combination with wood pellets.

[www.oekofen.com](http://www.oekofen.com)

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