

# NECOOL

## Photovolthermic AG

*Hot water for a cool planet!*



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Nexol is a startup founded in 2016. We are a broad mix of young and experienced people. Combined we have more than **60 years of experience** in the solar industry and bring together profound knowledge in areas like prototyping, corporate governance and troubleshooting. Our Vision is to provide our customers with a **resource efficient and climate neutral solution** for hot water supply.

### OUR TEAM



*Niklas Gemp*

*CEO*



*Luisa Hoyos*

*Head of International Sales*



*Jason Okl*

*CTO*



*Michael Lau*

*COO & Co-Founder*



*Stefan Oexle-Ewert*

*Advisor & Co-Founder*



*Frederik Rodner*

*Corporate Development*



*Thomas Lau*

*Business Analyst*



*Carina Fritz*

*Accountant*



*Robin Ewert*

*Marketing & Branding*



*Stephan Retí*

*Lead Embedded Developer*



*Suso Engelhardt*

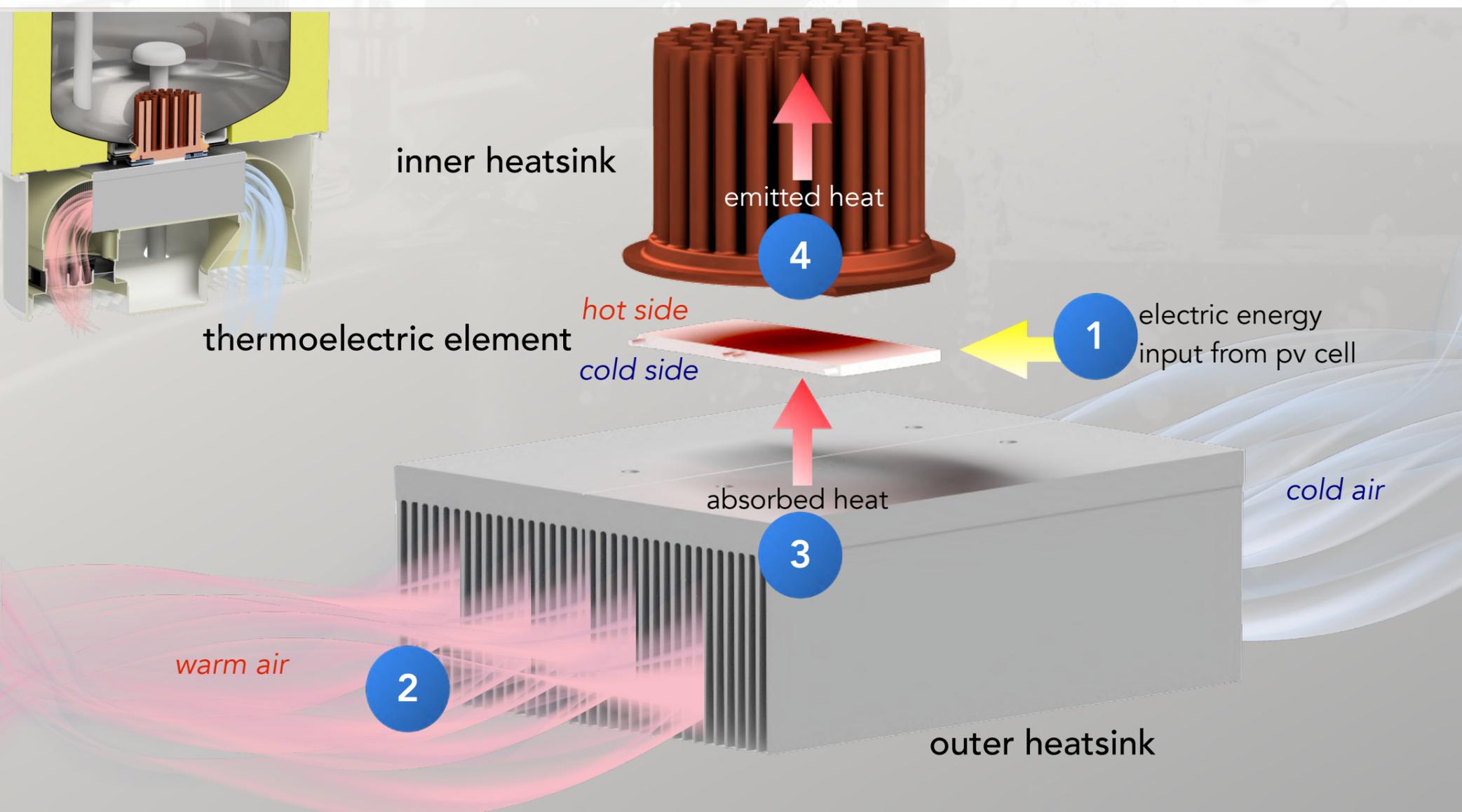
*Advisor*

## OUR PRODUCT

The NEXOL solar water heater **NEX-P40** works with a **thermoelectric element** that allows it to use the **thermal energy from the environment**. By using this additional energy, we ensure that the energy of a single photovoltaic panel (PV panel) is sufficient to heat up the water.\* Therefore, our product is designed to run especially well with solar energy. The perfect interaction between the thermoelectric element and the photovoltaic panel is what we call the **photovolthermic principle**.

- 1 By supplying the thermoelectric element with electricity, it transfers heat from one side to the other. This occurs due to a thermoelectric effect, which causes a temperature difference. Consequently, one side of the element heats up (hot side) while the other side cools down (cold side).
- 2 Unheated ambient air is drawn in by a fan and flows through the outer heatsink, which thereby absorbs the thermal energy of the air. As energy is absorbed from the air flowing through the heatsink, the air temperature decreases.
- 3 The outer heatsink itself is connected to the cold side of the thermoelectric element and warms it up. The cold side transfers the absorbed thermal energy to the hot side due to the thermoelectric effect. This means that the hot side is not only heated by the electric energy from the PV panel, but also by the thermal energy from the environment.
- 4 The energy from the elements hot side is finally transferred to the water via the inner heat exchanger. This causes the temperature of the water to rise.

\* Depending on ambient temperature and solar radiation.



## NEX-P40 ADVANTAGES

Thanks to the design of the NEX-P40 with a low number of moving parts it has low maintenance costs and a long lifespan. Also, for installation you do not need any more than a cable straight to the PV- panel and a water supply. This leads to an easy installation and therefore lowers the installation costs. The advantage of connecting a separate panel saves the charge controller, the inverter and subsequently, the power supply, since the technology we use is supplied with DC, unlike an ordinary resistance heating element.

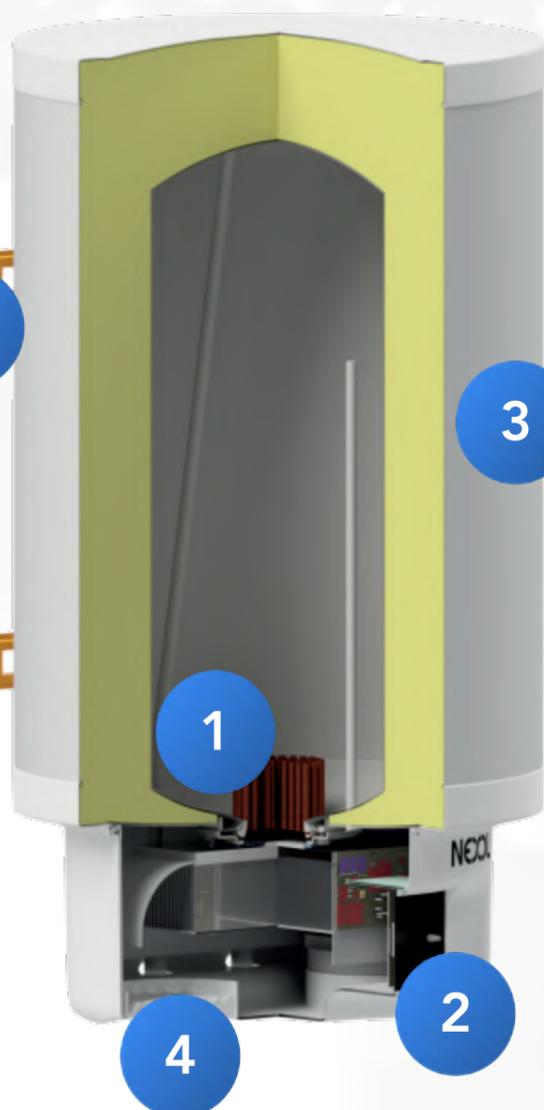
- Up to 75% energy savings thanks to pv-connection and the additional energy from the environment
- High efficiency copper heating element
- No need for corrosion protection, thanks to stainless steel
- Lightweight system compared to solar-thermal-systems
- Space-saving wall-mounted solution
- Easy direct connection to PV panel
- Intelligent switch from PV to grid

	NEX-P40	solar thermal	heat pump	electric boiler
Low storage losses	✓	✗	✓	✗
Simple one-man installation	✓	✗	✗	✓
Low energy requirement	✓	✓	✓	✗
Off-grid operation possible/use of regenerative energies	✓	✓	✗	✗
Functionality with only a few hours of sunlight	✓	✗	✓	✓
Low maintenance	✓	✓	✗	✓
Purchase price (for comparable quality)	medium	high	high	low
Running costs	low	low	medium	high

## NEX-P40



Water Capacity [L]	40
Design	Wall-mounted
Heating Element	Copper
Heat Source	Thermoelectric Heat-Pump
Dimensions (h x d x ) [mm]	875 x 484 x 471
Empty Weight [kg]	24
Maximum Power Consumption Heat-Pump [W]	210
Maximum PV-Input [W]	330
Maximum PV open circuit voltage [V]	48
Maximum PV short circuit current [A]	14
PV terminals	MC4
MPP-Tracking	Included
Maximum pressure [Bar]	7.5
Average COP [-]	2
Maximum Water Temperature	65
Mean heating time (15°C to 50°C at 80 W input) [h]	10
Average temperature loss after 8 hours [°C]	2.65
Water connection	½"
Grid-Connection (Optional)	
Converter Input Voltage [V]	110-230
Converter Input Frequency [Hz]	60-50
Converter AC Terminal	C6
Converter Output Voltage [V]	20
Converter Output Current [A]	4.5
Input Terminal [mm]	5.5 x 2.5



- 1** high efficient copper heat exchanger
- 2** OLED display
- 3** high quality stainless steel tank
- 4** air inlet/outlet
- 5** wall bracket

## SOLAR PANEL RECOMMENDATIONS

To use our product you need to install a solar panel.  
These are our recommendations for optimal performance.



Maximum PV-Input (W)	330
Maximum PV open circuit voltage [V]	48
Maximum PV short circuit current [A] *	14
PV terminals	MC4

## RECOMMENDED ADDITIONAL POWER SOURCE

Our solution is built to perform off-grid. Therefore, operation of our water heater with solar power as the only connected energy source is possible. As a backup source for cloudy days or days without sunshine it is possible to connect the NEX-P40 additionally with the grid or with a battery. In case two sources (solar + grid/battery) are connected at the same time, the NEX-P40 will then switch smart between the two.



Type	NEX-P40
Voltage	19 V
Power	90 W

## HOW TO INSTALL THE NEX-P40

Before you use our boiler you will need the following:

1. Solar panel (*not included*)
2. Solar cable 4mm with a MC4 connector from the panel directly to the heater (*not included*)
3. Water pipe connection to the standard heater 3/8" DN:20 (*not included*)
4. Grid connection (*optional*)

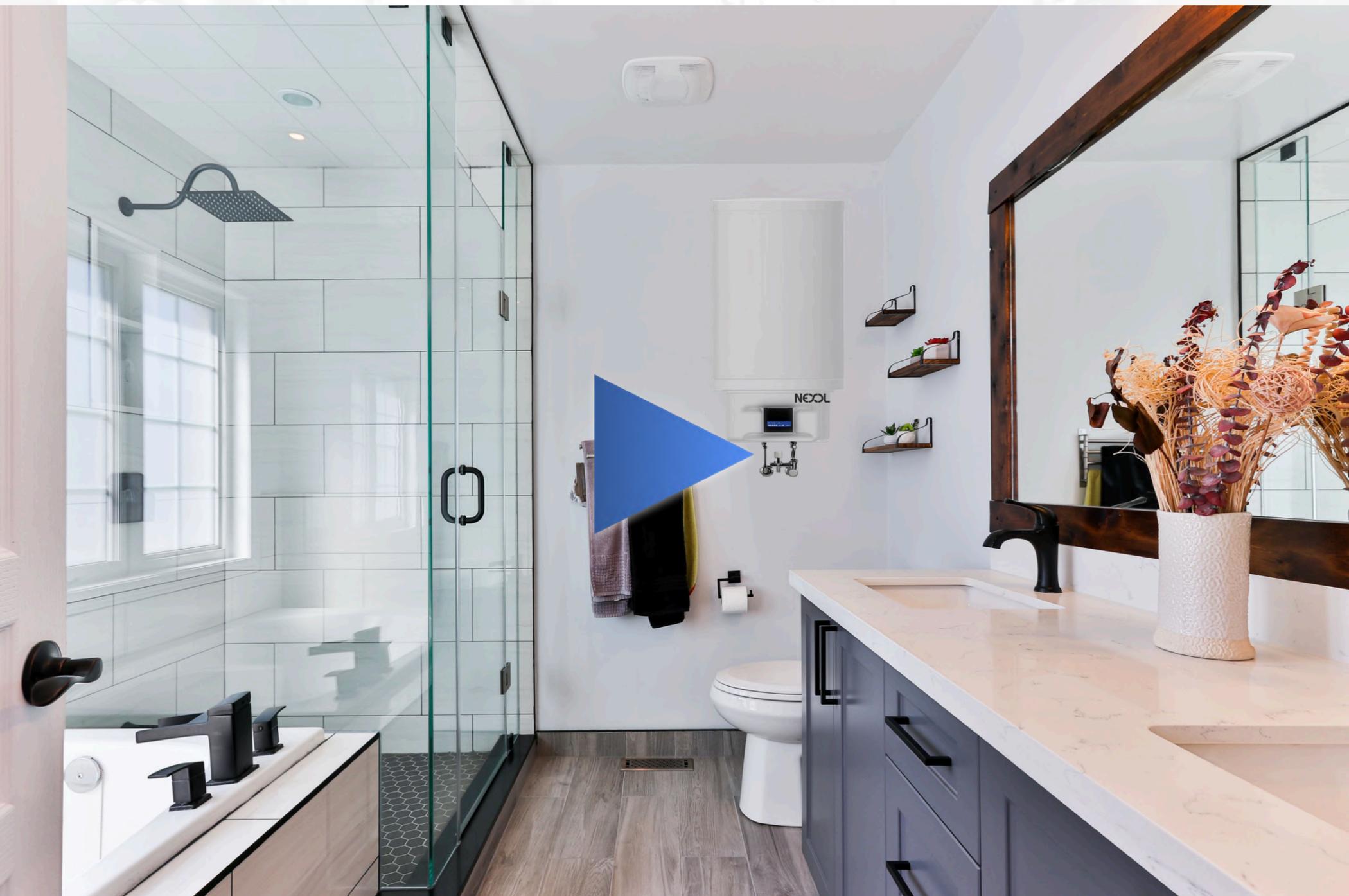
You will get the adapter from us but you need your country plug.

Please see how to find the right power source (*previous page*).

5. Wall mounting bracket (*included*)
6. Valve (*included*)

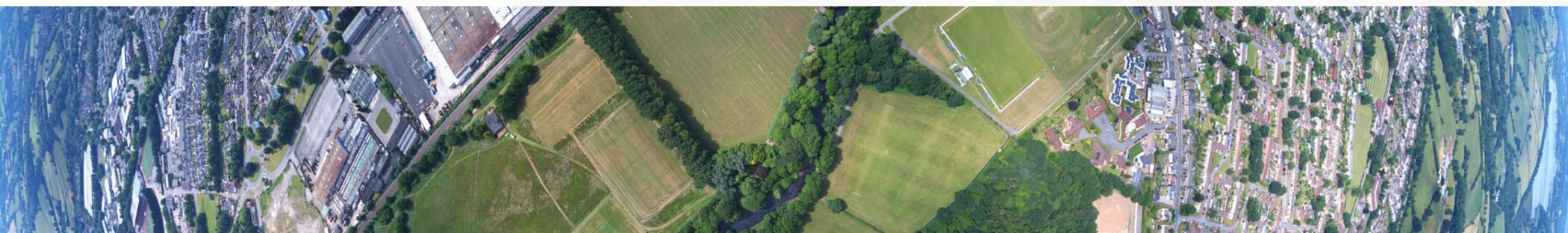


## NEXOL BOILER NEX-P40 INSTALLATION VIDEO



## OUR PARTNER NETWORK

We started with partners in several countries around the world that installed our product at their customers places. They use our product on a daily base and are very satisfied with it. Our partners are located in the following countries.



INTERESTED TO BE A NEXOL PARTNER?

We offer a patented product.

We offer you exclusive distribution regions.

We offer training and support to help you achieve your sales goals.

We support you in advertising on different social networks.

We have an innovative solution that is **good for people and our planet.**

**NEXOL**  
**Photovolthermic AG**

Contact Us



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	NEX-P40	Sistema Solar Térmico	bomba de calor	Termoacumulador elétrico
Perdas baixas de armazenamento	✓	✗	✓	✗
Instalação fácil por um homem	✓	✗	✗	✓
Baixa necessidade de energia	✓	✓	✓	✗
Possível operação fora da rede / uso de energias regenerativas	✓	✓	✗	✗
Funcionalidade com apenas algumas horas de sol	✓	✗	✓	✓
Baixa manutenção	✓	✓	✗	✓
Preço de compra (com qualidade comparável)	médio	alto	alto	baixo
Custos de funcionamento	baixo	baixo	médio	alto