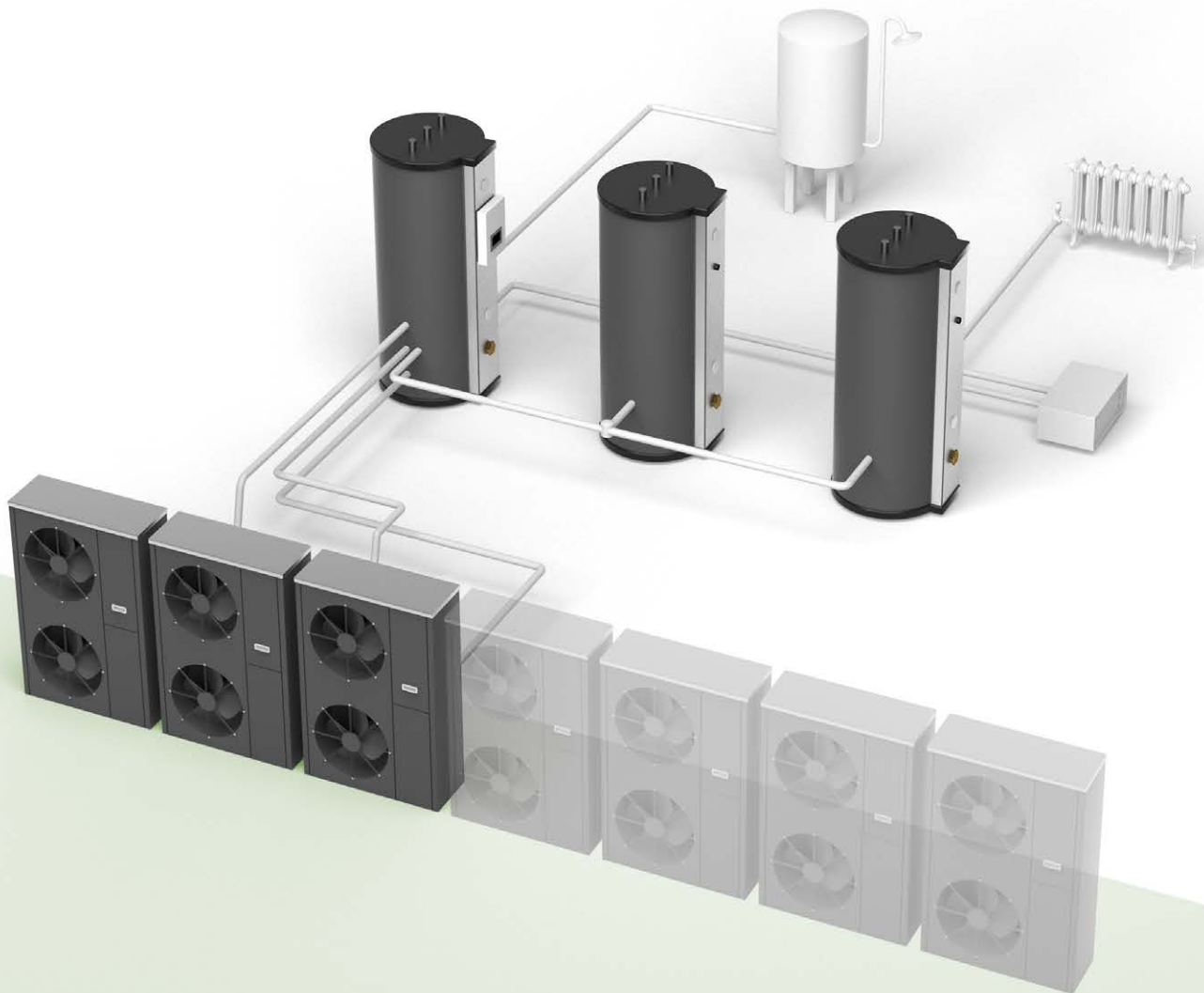


• **EIS** ENERGY SAVE

ES NordFlex

Your modular commercial heating and cooling solution with on-the-go digital functionality to support you every step of the way.



A modular heating system based on your needs

The ES NordFlex is a heating solution for your building developed by Swedish engineers and based on our AW-EVI-M series of highly efficient heat pumps.

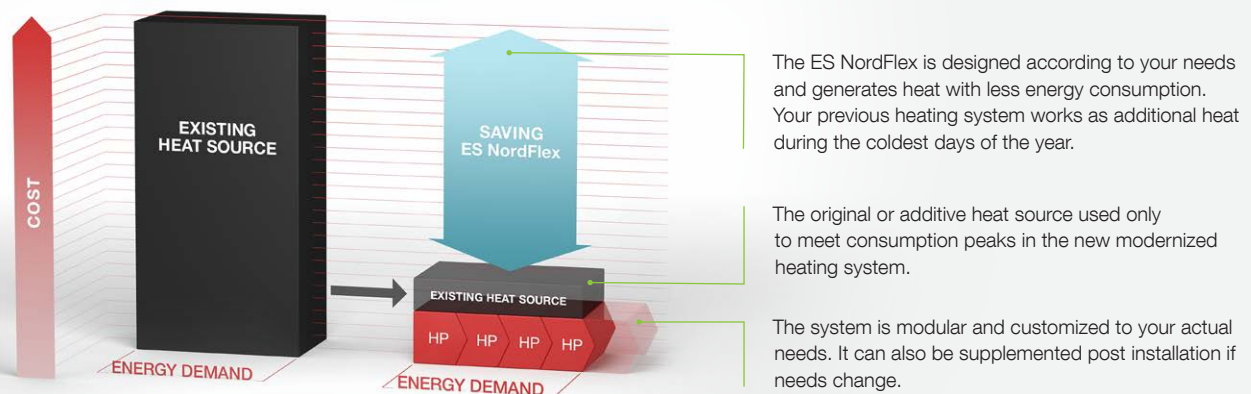
A reliable, versatile and safe total solution for heating, cooling and domestic hot water. Equally suitable for modernizing an existing heating system or a completely new installation, your solution could have an installed capacity of 1 440 kW.

Our ES AW-EVI-M range of heat pumps can be combined with other supplementary and additive

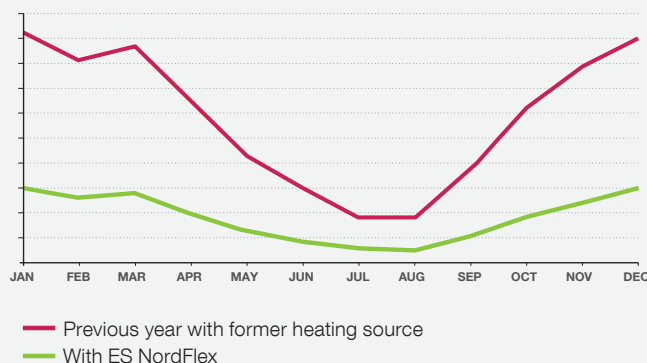
heat sources such as electricity, oil, wood, pellets or district heating.

The ES Configurator ensures that your installation is both tailored and easy where our modular building block approach ensures that your installation is future-proof. As your needs change over time, so can your ES NordFlex setup.

Examples of energy savings when modernization of an existing heating system



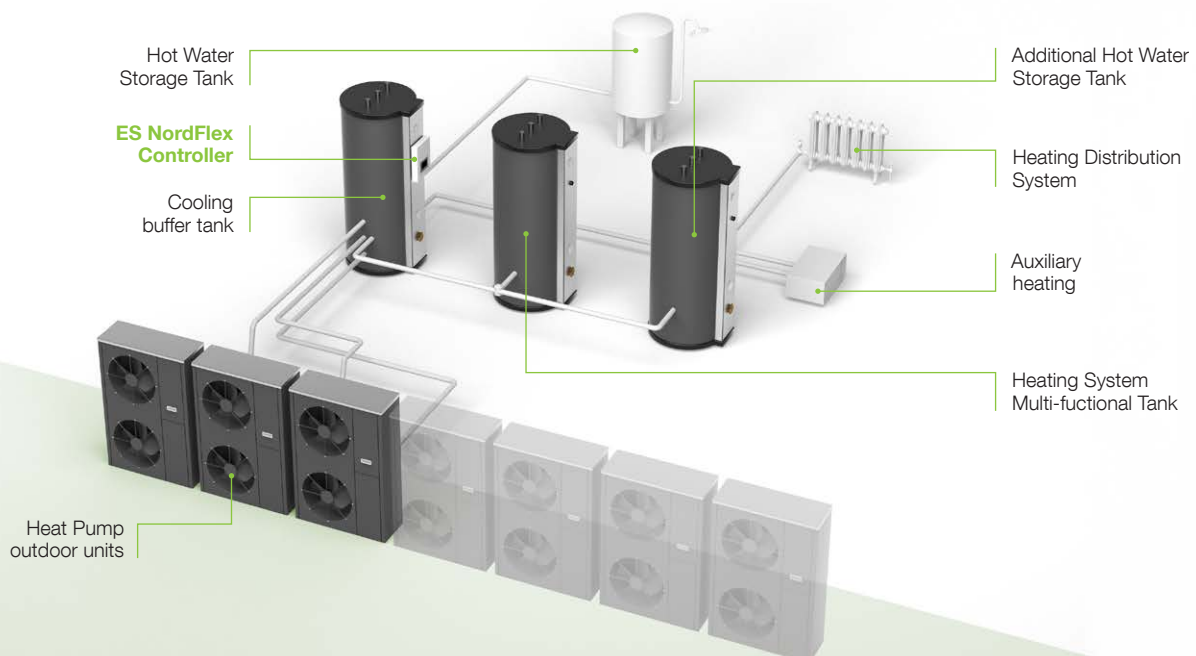
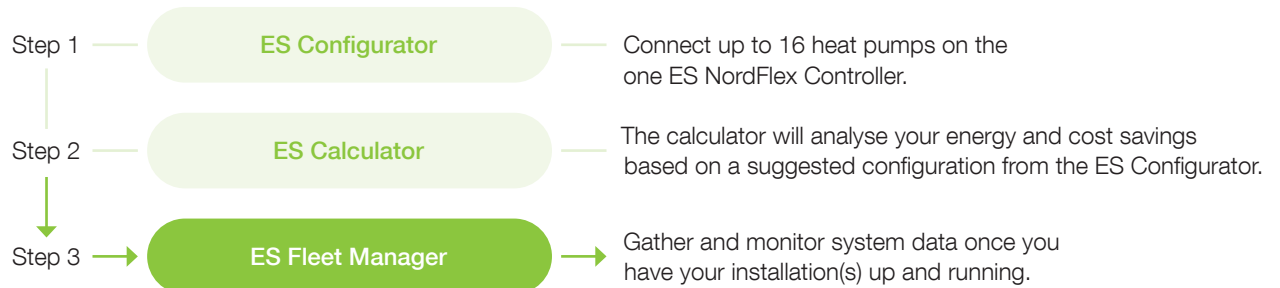
Yearly heating costs



Return of investment within 4 years

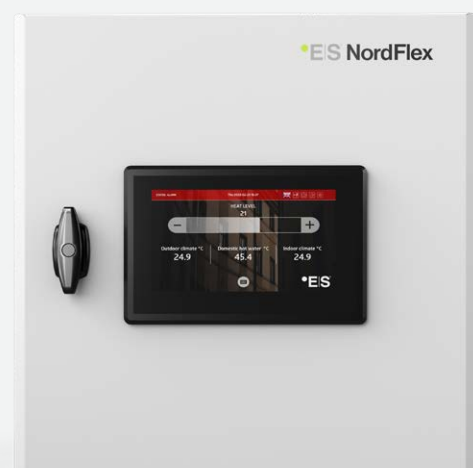
The ES NordFlex has undergone extensive studies, tests and evaluations. Both in the lab, with extensive testing of different operating cases and modes of operation, and through long-term studies of installed systems in real operating environments.

Cost efficient energy solutions for your building



Connect up to 16 heat pumps on the one controller

- The ES NordFlex Controller is delivered as a plug-and-play cabinet with terminals for external unit connection and power supply.
- The controller is agnostic to your building management system (BMS) meaning that it is adaptable and can easily be integrated with all kinds of additive heat sources.
- The controller logic is based on each heat pump's specific COP (coefficient of performance) enabling your installation to always produce energy at optimal COP and efficiency.



Integration made easy

Developed for small to medium-sized commercial buildings, the ES NordFlex solution allows you, as the property owner, to monitor and control your property's indoor climate.



Based on our AW-EVI-M series of Monobloc Heat Pumps 30, 45 & 90-kW

By using the latest inverter and EVI technology, the AW-EVI-M series is designed as an energy efficient and stable heating solution, with wide heating capacity ranging from 30 to 90 kW.

The AW-EVI-M range of heat pumps have inverter compressors that are able to automatically adjust their

working speed according to your buildings heating demand, enabling the real-time optimization of your entire heating system.

Thanks to the specially designed fan blades and a noise shielded compressor compartment, the units are quiet and seamlessly meld into your building.

Integrated sub-cooling pipe prevents ice build up during defrosting and negates the need for an electrical heating element.

Highly efficient EC fan motors, coupled with an improved air duct system, ensures quiet operation as low as 66 dB(A).

Steel shell and tube heat exchangers with large waterways reduces pressure drop and allows a higher tolerance of water quality.



ES NordFlex Controller



ES AW90



ES AW45



ES AW30

ES AW Monobloc

The AW Monobloc is a simple but powerful machine that meets heating, cooling and domestic hot water demands for commercial applications, such as apartment buildings, hotels, schools and warehouses.



The ES AW Monobloc air source heat pump is available in three models with a heating capacity range of 30 kW to 90 kW. Up to 16 units can be arranged in a cascade configuration to deliver a total capacity of up to 1 440 kW, all manageable through a single ES NordFlex controller, thus providing a flexible solution using standardized products. This makes these systems ideal for commercial installations. For even larger applications, multiple banks of up to 16 heat pumps can be installed, with the option to integrate several control units for enhanced system scalability and management.

Using the latest inverter and EVI (Enhanced Vapour Injection) technology, the AW Monobloc is designed as a highly energy-efficient and stable heating solution. The inverter driven compressor automatically adjusts output according to heat demand which optimises system efficiency and the pairing of EVI technology ensures a stable heat output is maintained throughout the winter to minimise energy consumption.

For smaller installations, our 6–19kW range of systems can be used as the building block for heating and cooling your property.

- Monobloc design for easy installation
- Electronic expansion valve control for precise superheat regulation
- Modbus communication with BMS for smart buildings
- Self-adjusting EEV control

Energy efficiency	A++
COP (A7/W35)	4.42–4.50
SCOP	4.06–4.20
Heating output	28.7–89.6 kW
Max. flow temperature	60 °C
Working range	-30 °C–55 °C
Power supply	415 V
Sound power level	66–75 dB(A)

EVI powered

AW 30, 45 and 90kW units are equipped with EVI technology, enabling high energy efficiency and stable performance. With inverter and EVI technology, the series reaches A++ energy level and COP is up to 4.5.

Nano-coated outdoor evaporator unit

Large volumes of air circulate through the outdoor unit on all air source heat pumps and energy is collected from this air. When this air is cold, ice can form on heat pump condensers which can be problematic and hinder performance. The nano-coating applied to AW condensers allows condensing water to drain faster, reducing defrost times and the risk of ice build up.

R410A refrigerant

The units use a R410A refrigerant, which has been used for inverter heat pumps for several years. It has been proven to be a reliable and efficient medium for air-to-water heat pumps, as well as air conditioning systems.

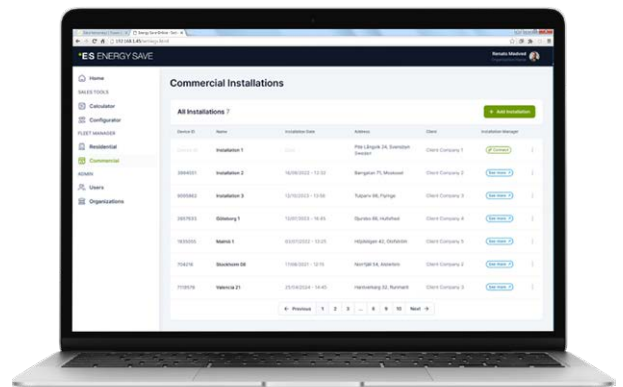


The system is easily controlled via the ES NordFlex controller display and or ES Fleet Manager

A clear and user-friendly interface makes it easy to control and monitor your system(s) via the controller cabinet display or web application with our ES Fleet Manager platform. You can monitor both function and efficiency in real time and tailor the settings as needs change.



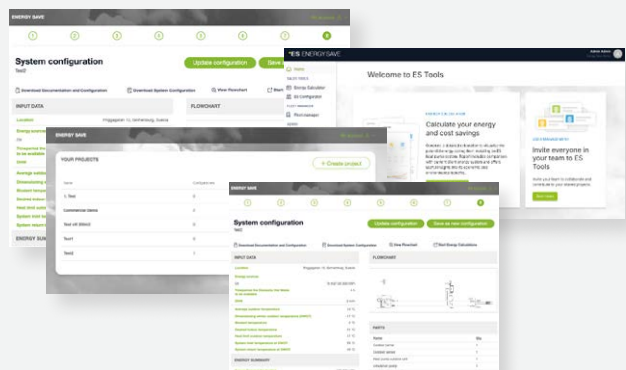
The ES NordFlex Controller Display



The ES Fleet Manager

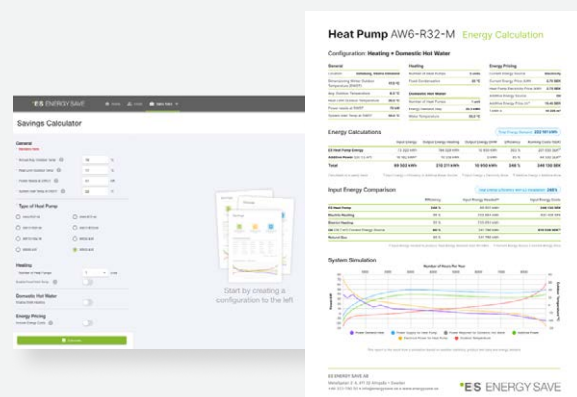
Size and optimize your installation

The **ES Configurator** generates mechanical and electrical schematics based on inputs such as your heating, tap water and cooling needs. Based on this, the system outputs the optimal number of systems and system types. Piping dimensions are also outputted by the ES Configurator ensuring that connections and flows are based on actual conditions. In addition, the ES Configurator tool also considers the control system's limitations.

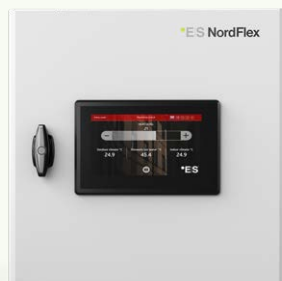


Analyze your energy and cost savings

The **ES Calculator** analyzes your energy and cost savings using your current heating solution as the baseline. With this calculation available in minutes, you are able to make qualified decisions about your installation without the hassle of engaging various other stakeholders saving you both money and time.



ES NordFlex Controller data



- Cascade up to 16 units from one controller.
- Control of four mixing circuits with different temperature zones, including DHW production.
- Simultaneous heating, cooling and DHW production.
- Remote control.
- BMS compatible.

Possible cascade heat pump control	16 (1.4 MW)
Possibility to connect multiple controllers	Yes
System configuration tool	Yes
Cascade control logic	Need based on heating/cooling demand – output based on the maximum COP output of each heat pump
Preprogramed system specific	Yes
Heat demand calculations	Calculated curve or laniary curve
Additional heater support	Yes – multiple
Additional heating sources control logic	On/Off; 0–10 V signal; Modbus communication
District heating connectivity	Yes
Domestic hot water production	Yes
Domestic hot water circulation control	Yes
Cooling production	Yes
Simultaneous production of Heat/DHW/Cooling	Yes all modes – Simultaneous Heating/ DHW/Cooling
Display	7” touch screen
Tailored system documentation	Yes – Tailored system documentation
Scheduling functions	Holiday mode, Night mode, DHW Boost, Anti-legionella mode
Software update	Via USB
Settings and configurations	Installer menu & USB auto upload
Internet access	Yes – with LAN cable or modem
Possible user groups (zones)	4
Energy consumption meter	Yes – optional
Energy production meter	Yes – optional
Room sensor support	Multiple – based on demand
Pressure monitoring	Yes – Support for pressure switches and pressure measurement on primary and/or secondary water circuit
Input/output standard	12 Analog inputs (NTC or 0–10 V) 4 Digital inputs (230 V) 4 Digital inputs (24 V) 2 Analog outputs (0–10V) 14 Relays (2 A, 250 V)
Flexible function for inputs/outputs	Yes – functions dedicated to inputs/ outputs by installer
Additional input/output	Yes – with input/output expansion module
Power supply to switching valves etc.	24V DC 40 VA included
Power supply	230 V
Communication	Modbus RTU/TCP
Specific hydraulic and electric scheme included	Yes – project specific with configurator
BMS compatibility	Yes

Want to know more?

We can help you take control of your property's climate and choose the right energy solution that meets your needs and challenges. Energy Save can assist you when it comes to optimizing your building energy systems to maintain or obtain an environmental certification and of course reduce both consumption and cost. You can also contact your local supplier directly among our distribution and installation partners.

Our energy efficient solutions are suitable for:

Existing properties, new production and all kinds of temporary and mobile solutions including construction site heating and drying.

Contact us today if you would like to:

- Reduce your carbon footprint
- Reduce your energy costs
- Reduce investment costs
- Improve and take control of your indoor climate
- Invest in a sustainable energy solution

About Energy Save

ES Energy Save Holding AB (publ) is an innovative Swedish energy technology company that, through costeffective and smart air/water heat pump systems, contributes to sustainable energy conversion in Europe. The company has been supplying heat pumps to the European market since 2009 and is listed on Nasdaq First North Growth Market.

Sweden, HQ

ES Energy Save Holding AB
Metallgatan 2-4, SE-441 32 Alingsås, Sweden

Norway

Energy Save AS
Kirkeveien 50, 1396 Hvalstad, Norway

Slovenia

Energy Save Nordic D.O.O.
Ulica heroja Nandeta 37, 2000 Maribor, Slovenia

www.energysave.se