

Everything you need to help your heating **business grow**

Because we can deliver everything you need from a single source, we make it easy for you to provide your customers with the best indoor and outdoor heating solutions. Danfoss brings you ease of use, proven service quality and expertise, as well as products with great energy-saving features.



simply 1
provider makes
your life easier.

1 PROVIDER MAKES YOUR LIFE EASIER

At Danfoss, we use our know-how and expertise to combine the best products into a single solution. Bringing together an extensive collection of products and systems designed to increase indoor comfort helps save

energy, money and time. So no matter how your customers and the projects you work on may differ, we can create the solution you need to do your job perfectly.

We can help you design the best possible solution for your next heating project

1



**Radiator
Thermostats**



**Electronic
Room Controls**



**Heat Recovery
Ventilation**



**Hydronic Balancing
and Control**



**Floor
Heating**



**Outdoor
Heating**



**District Heating
and Cooling**



**Heat
Pumps**



**Burner
Components**

INTEGRATED PRODUCT SOLUTIONS

We put our 75 years' experience and our worldwide reputation on the line every time we supply a product or help you develop a solution. Designed to work seamlessly together, our wide range of products in residential heating, ventilation and pas-

sive cooling bring significant benefits for you and your customers.

From radiator thermostats, district heating substations to heat pumps, our products are energy efficient, provide excellent comfort and are easy to

install. This means more time for you to grow your business and your profits. And even better: satisfied customers will be recommending you to their friends.



Linking products in heating systems to optimize energy use, heat delivery and comfort. Here is an example.

A touch of control

Danfoss Link touch display unit controls a whole range of devices, including radiator thermostats, hydronic and electric floor heating devices and heat pumps. Because all elements in the system come from Danfoss, they are fully compatible and very simple to install.

Danfoss Link integrates easily with the heating system. It regulates heating throughout a home – simply, effectively, wirelessly, from one central point. As a central interface for the entire heating system, *Danfoss Link* enables 'heat scheduling'. This ensures that individual room temperatures will always match heating need at any given hour of the day. *Danfoss Link* also enables

the Danfoss heat pump, floor heating and thermostats to 'talk' to each other. By knowing the exact need for heating inside the house, the Danfoss heat pump is always running in an optimal way, providing additional energy savings and comfort due to fewer temperature fluctuations in the house.

Balancing is everything

The key to greater comfort and reduced energy consumption is to match the temperature in the heating system to the heating requirements of the building. This can be done effectively by energy efficient stand-alone components. Adding electronic controls, such as weather compensators, radiator thermostats and floor heating controls, creates even better results.

Comfort is in the air

Fresh air and cooling are often just as important as heating. In a new building, a heat recovery ventilation system is vital to ensure both fresh air and minimum energy consumption. If your customer is renovating a house and insulating it, they will probably experience a problem with moist air and a lack of fresh air, as their house becomes 'tighter'. Heat recovery ventilation will be required to solve this problem.

A good heat recovery ventilation system not only ensures an optimum indoor climate but also allows for so-called 'passive cooling' during warm weather.



solution 1
for energy and comfort benefits
 Products that 'talk' together create energy, comfort and installation benefits.

To make your life even easier, we have pre-defined three levels of product packages for different customer needs and budgets.

The following pages show three examples of how you can sell integrated solutions to your customers more effectively.

Basic package ● ○ ○

Contains efficient, self-acting stand-alone components. Compared to electronically controlled products, the options for controlling the heating system are less advanced.

Energy efficiency

Individual comfort

Level of customer investment ● ○ ○
 Your business volume ● ○ ○

Advanced package ● ● ○

The advanced package contains more electronically controlled products than the basic package. Electronic products enable advanced heat system control like scheduling.

Energy efficiency

Individual comfort

Level of customer investment ● ● ○
 Your business volume ● ● ○

High-performance package ● ● ●









Includes a central control and display. Not only does this enable convenient, centralized control and scheduling of heating. It also enables products to 'talk' together, optimizing the entire system as a whole.

Energy efficiency

Individual comfort

Level of customer investment ● ● ●
 Your business volume ● ● ●

NEW BUILD

What is your customer's main energy source?			District Heating		
What is the best package to recommend to your customer?			Basic Package	Advanced Package	High-performance Package
Which products are the most efficient for this specific energy source?			Substation: Akva Lux II VX or Termix VVX / VX Solo or Termix VX/ Akva Lux II or Termix Novi	Substation: Akva Lux TDF-F or Termix VMTD	Substation: Akva Lux II VX or Termix VVX / VX Solo or Termix VX
Central panel wirelessly controlling the heat from a single place for the entire house					●●●
	Electronic Room Controls	Danfoss Link			
		RET230 – Standard dial thermostat			
		TP4000 – 24-hour programable thermostat			
	Radiator Thermostats	TP5001 – 5/2 day programable thermostat			
		<i>living design</i> ® – standard thermostat	●		
		<i>living eco</i> ® – electronic thermostat		●●	
	Floor Heating Hydronic	<i>living connect</i> ® – controlled via <i>Danfoss Link</i>			●●●
		Pipes controlled via hardwired FH-Wx	●		
		Pipes controlled via wireless CF2+		●●	
	Floor Heating Electric	SpeedUp™ controlled via <i>Danfoss Link</i>			●●●
		Heating cable EFTPC controlled via EFET 535			
		Heating cable EFTPC controlled via EFIT 550			
	Heat Recovery Ventilation	Heating mat EFTM controlled via <i>Danfoss Link</i>			
		Danfoss Air Unit + Danfoss Air Flex	●	●●	
		Danfoss Air Unit + Danfoss Air Flex + Air Pre-heater			●●●
	Balancing Valves	MSV-BD + Flow indicator	●	●●	
		ASV-PV + ASV-BD			●●●
	Weather Compensator	ECL Comfort 210 with temperature sensors and motorized control valves		●●	●●●
	Outdoor Heating	EFTC cable + EFIT 850 thermostat			●●●

How to control / distribute heat in the house?

Installation planning has never been easier












The table below is your complete guide to planning the most energy-efficient solution for your customer. Based on the customer's available en-

ergy source and desired investment level – Basic, Advanced or High-Performance – the table shows you exactly which package and what combina-

tion of elements will help you design the best system for them.

Gas			Electricity - option 1			Electricity - option 2			Oil		
Basic Package	Advanced Package	High-performance Package	Basic Package	Advanced Package	High-performance Package	Basic Package	Advanced Package	High-performance Package	Basic Package	Advanced Package	High-performance Package
Gas boiler	Gas boiler	Air/water heat pump: DHP-AQ	Air/water heat pump: DHP-AQ	Air/water heat pump: DHP-AQ	Heat pump: DHP-Opti Pro	Electric floor heating	Electric floor heating	Electric floor heating	Oil-fired condensing boiler	Oil-fired condensing boiler or air/water heat pump: DHP-AQ	Oil-fired condensing boiler or heat pump: DHP-Opti Pro
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RENOVATION

Relevant scenario	Recommendation	Product	
For customers with an oil-fired boiler.	Replace the old oil nozzle and remove soot from the oil-fired boiler.		Nozzle with/without LE-valve
For customers with condensing boilers.	Introduce balancing.		MSV-BD
For customers with condensing gas boilers.	Replace the dial room thermostat with a programable room thermostat.		TP5001
For customers with electric floor heating.	Install thermostats with timer.		EFET 535
For customers with hydronic floor heating.	Install individual wireless room control for hydronic floor heating.		CF2+
For customers with radiators.	Replace manual valves or old radiator thermostats with electronic thermostats.		<i>living eco</i> ®
For customers with district energy, oil or gas boiler.	Install a weather compensator and let the heat supply reflect the outside temperature.		ECL Comfort 210
For customers who want to easily retrofit floor heating for improved comfort.	Install electric floor heating controlled via programable thermostats or remote controller.		Heating mat EFTM controlled via EFIT 550
For customers who want fast-reacting floor heating for improved comfort.	Install SpeedUp™ light hydronic floor heating, directly below the floor surface controlled via the programable CF2+ control system.		SpeedUp™ controlled via CF2+
For customers wanting improved indoor air quality with almost no heat loss.	Install a heat recovery ventilation system.		Danfoss Air Unit + Danfoss Air Flex
For customers wanting a greener and more energy-efficient heat source.	Replace inefficient oil or gas boiler with air/water or ground/water heat pump (alternatively check the availability of district heating).		DHP-H Opti Pro or DHP-AQ

Great offers from you to your customers

Share your expertise and make extra profits by recommending the following components to your customers for the renovation of their heating systems. Every small improvement

saves energy, reduces costs and increases comfort. The table below gives you an easy overview of the possibilities, based on your customer's main heating source and budget.

Use this table to find the products that match their needs and the approximate energy savings they can expect.

Energy saving	Information	Investment
4%	Maintenance means savings. Annual replacement of oil nozzle, adjustment of combustion and removing soot from the oil-fired boiler optimizes combustion and reduces oil consumption.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
10%	Improve balance to ensure that the boiler always operates in optimal condensing mode.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
10%	Via the advanced time-proportional control program in the programmable room thermostat, the gas boiler is kept in condensing mode for longer. The boiler is most efficient in condensing mode.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
20%	The right temperature at the right time for electric floor heating.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
15%	The desired temperature at the right time.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
23/46%	By replacing old thermostats with our new electronic ones, your customers can save 23% of energy used. By replacing manual valves with electronic new <i>living by Danfoss</i> products, they can save 46%.	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
15–40%	Ensures that the heat source delivers the right temperature to the radiator or floor heating system.	● ● ● ● ● ● ○ ○ ○ ○ ○ ○
25%	Fast reaction floor heating systems. The rapid response of these systems provides the desired temperature in minutes, providing energy savings, reduced costs and optimized comfort.	● ● ● ● ● ● ○ ○ ○ ○ ○ ○
25%		● ● ● ● ● ● ● ● ○ ○
20%	All air is exchanged at least every 1/2 hour, controlling humidity. Heat in the exhaust air is recovered.	● ● ● ● ● ● ● ● ● ●
50–75%	Highly efficient compared to traditional energy sources, heat pumps can help achieve massive savings.	● ● ● ● ● ● ● ● ● ●

PRODUCT HIGHLIGHTS



Danfoss Link

Benefits for you:

Two-way wireless communication between devices gives a perfect diagnosis of the system as you install it. It also ensures trouble-free operation, because the system constantly monitors itself, saving you unnecessary phone calls or visits. The touch screen, colour display and intuitive menu guide you quickly through the set-up process. Configuration is the same whether you're installing radiator-based, electric or hydronic floor heating, so installation quickly becomes routine. Upgrading the software is easily achieved using an SD card.

Benefits for your customer:

Your customers can combine different heating systems and control them all through one device. Significant energy savings can be achieved through weekly heating schedules and an 'away' function. This automatically reduces the temperature while the householder is away and warm it up before he or she returns. With sleek styling to complement any interior, *Danfoss Link* has received the prestigious red dot design award.



Radiator Thermostats

Benefits for you:

Saves you time. Sensors are compatible with all Danfoss and other thermostatic valves. It fits RA, RAV, RAVL and most competitor valves with M30x1.5. *living eco*® and *living connect*® both have an LCD display on the front – so set-point temperature and program settings are visible. Simply enter date and time and the thermostat is ready.

Benefits for your customer:

23% energy saving when installing new electronic '*living by Danfoss*' thermostats compared to old thermostats. If you replace a manual valve, you can save up to 46% energy.

This section shows the product features that are most important for you and your customers. Remember: components can be combined for increased efficiency and comfort.



Electronic Room Controls

Benefits for you:

Easy to install and program. Time and date are factory-set. The thermostats are also pre-programmed so that you can easily change settings to suit individual heating requirements.

Benefits for your customer:

Using advanced time proportional control, the Danfoss programmable thermostat can save up to 10% extra energy when combined with a condensing boiler.



Heat Recovery Ventilation

Benefits for you:

1 click plug-and-play. Once the communication module has been connected, the Danfoss Air System automatically leads you through the set-up process for the entire system solution – without having to use a single tool.

Benefits for your customer:

Up to 95% heat re-used. Danfoss heat recovery ventilation re-uses most of the heat before expelling the used air.



Hydronic Balancing and Control

Benefits for you:

The LENO™ MSV-BD makes your work easier thanks to balancing valve measuring nipples that can rotate 360° for easy access. The valve can also be used as a shut-off valve and includes a drain cock for easier servicing.

Benefits for your customer:

The LENO™ MSV-BD optimizes the system, reducing energy consumption by 8-10%.

PRODUCT HIGHLIGHTS



Floor Heating Hydronic

Benefits for you:

For faster, easier installation, SpeedUp™ requires no screed. This reduces installation time and cost while making your job easier.

Benefits for your customer:

SpeedUp™ fast-reaction floor heating provides the desired temperature in 30 minutes, saving energy and money while optimising comfort. Can be controlled by Danfoss link, CF2+ or FH-Wx control systems.



Floor Heating Electric

Benefits for you:

Easy and inexpensive installation, with no piping or screed required. Construction work is limited, saving time and cost.

Benefits for your customer:

No need to pull up the old floor. Can be laid directly on top of the existing floor. These are the thinnest mats on the market and an excellent solution for rooms where the floor level cannot be raised.



Outdoor Heating

Benefits for you:

Quick and easy cable installation. No screws or additional tools required. For areas where you need ice protection, just roll out a heating mat and lay the bricks or asphalt on top.

Benefits for your customer:

Danfoss ice and snow melting systems keep roofs and gutters, driveways, stairs and drainpipes safe and clear throughout the winter.

Our thermostats and sensors detect temperature differences and switch the heat on or off as required. Minimum energy use for maximum results.

Combine products for optimal design

Mix and match across
product lines for enhanced
energy savings.



District Heating and Cooling

Benefits for you:

Danfoss substation and controls for district heating are hassle-free to install, commission, operate and service, reducing both installation time and cost of ownership.

Benefits for your customer:

By adding the ECL Comfort intelligent weather compensator to the system, your customer can achieve up to 40% energy savings – while enjoying maximum indoor living comfort.



Heat Pumps

Benefits for you:

The Danfoss heat pump range supports 72 pre-defined applications with capacity from 4kW to 42kW. The unique self-commissioning flow adjustment and electric element make installation 'plug-and-play'. Prefabricated kits and pumps delivered already refrigerant-charged save you up to 3 hours installation time.

Benefits for your customer:

50–75% energy savings. The best seasonal performance on the market. Highest possible heating, hot water and cooling comfort at the lowest possible cost. Select and forget – no additional adjustments are required to ensure that the heat pump performs optimally.



Burner Components

Benefits for you:

Just 34 service components from Danfoss cover 90% of your needs for servicing oil-fired boilers.

Benefits for your customer:

Annual replacement of the oil nozzle, cleaning and servicing of the oil-fired boiler will improve fuel economy by 4% when just 1 mm of soot in the boiler is removed.



up to
85%

reduced energy demand can be achieved through a complete renovation of the building envelope and heating system (source dena, 2010).

1. Building envelope

2. Heat source

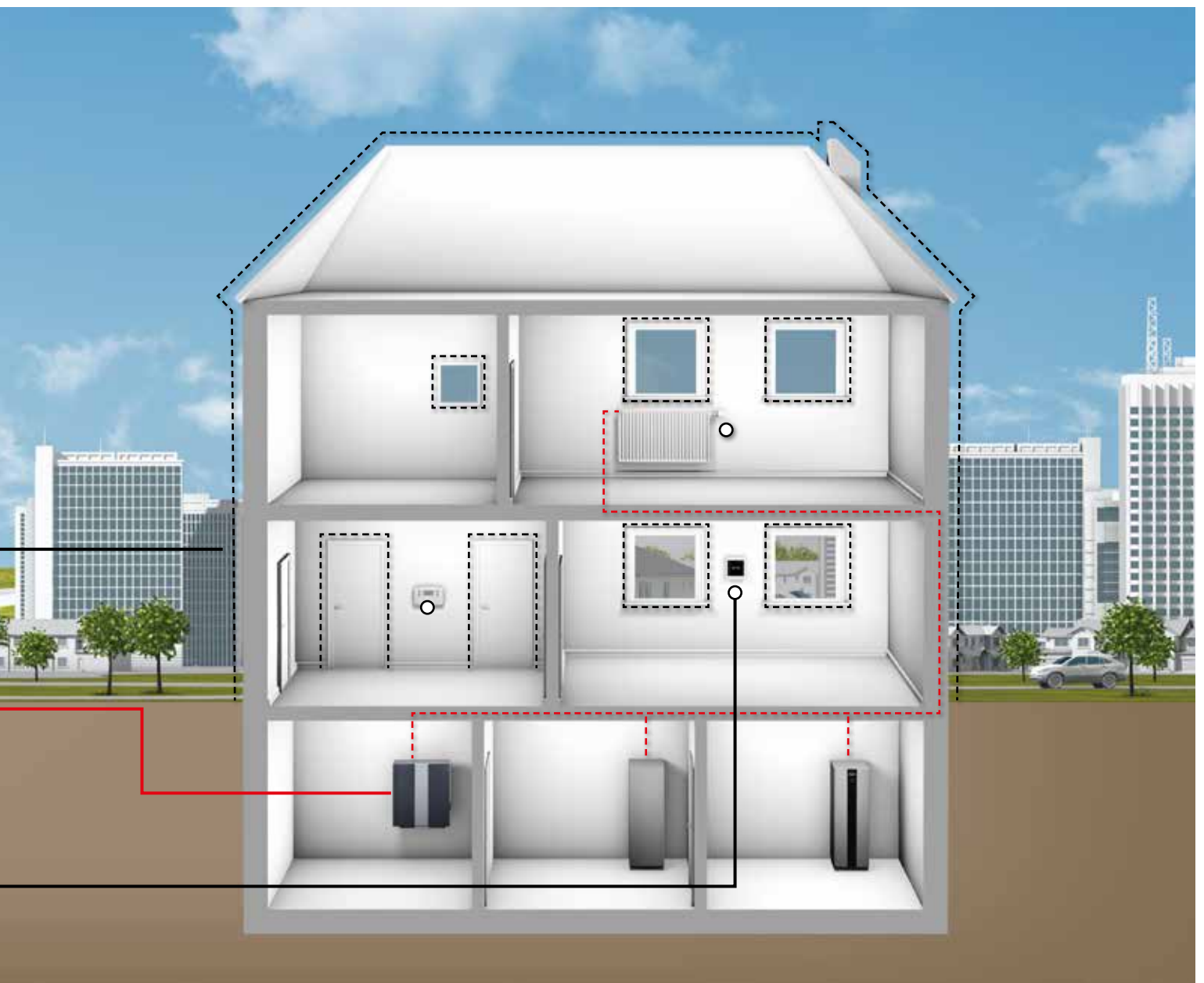
3. Control

THE FULL STORY FOR YOUR CUSTOMERS

You know how the different elements of a system connect, and what you can do to reduce energy use and save money. Your customer may not. That's why we've created this quick reminder section to help you explain the benefits and win the business.

To get the most out of renovation or new build projects, you need to think about the building envelope, the heat source and how the system is controlled. It's no good saving energy with a great control system only to lose it again through poor insulation.

Danfoss systems and products are designed to work seamlessly together in all conceivable conditions to achieve the best possible results.



1. Building envelope

Typically, around 30% of a building's energy use is lost through the walls, windows and roof. High-quality insulation and good double-glazed windows massively reduce energy use while increasing comfort.

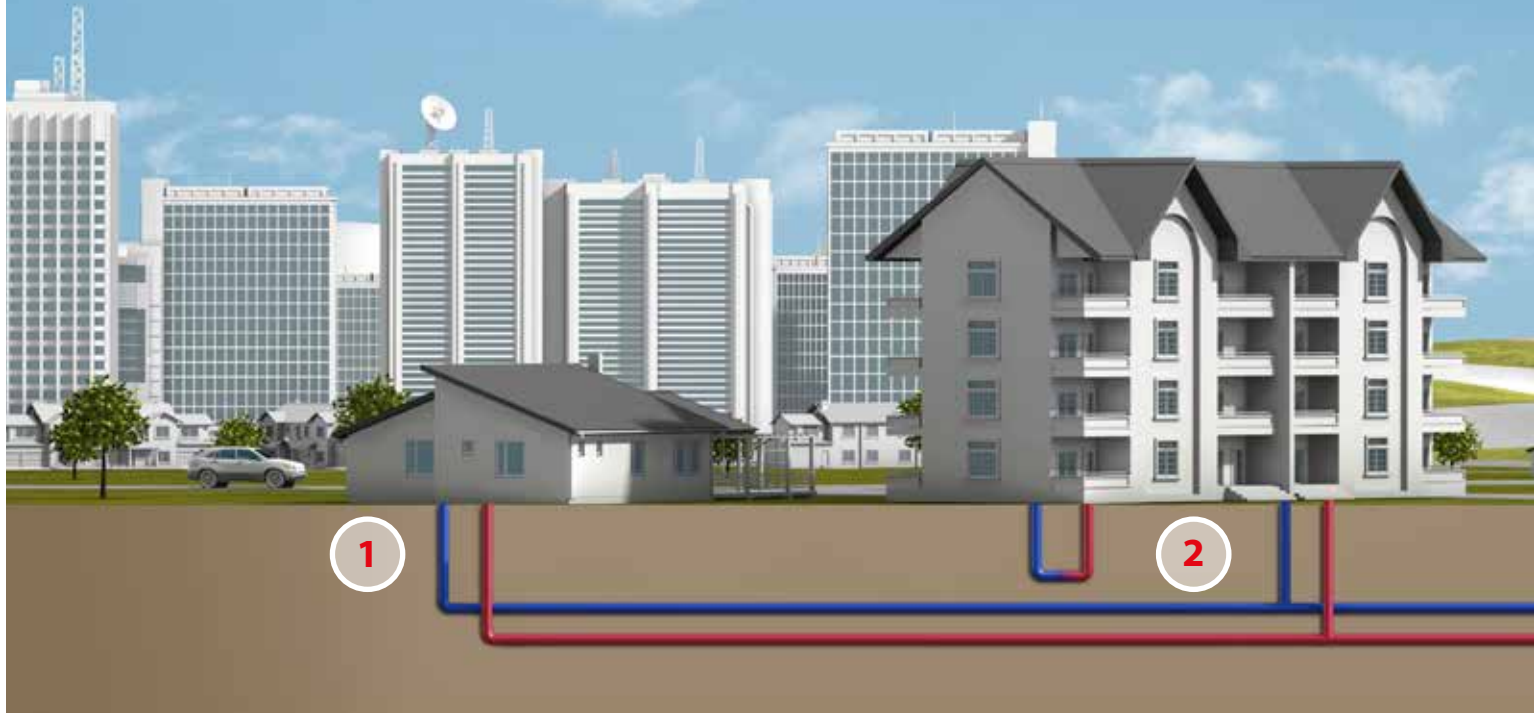
2. Heat source

Choosing the right heat source for a building can save huge amounts of energy and money. A number of conditions should be considered before choosing, including the size of the building, insulation, comfort level, maintenance issues and the available heat sources in the local area. If district heating is available, this is normally the most common choice.

3. Control

Control systems and components are one of the easiest and most important ways to save energy. Depending on things like the desired temperature, outdoor temperature and hot water consumption, controls ensure efficiency by maintaining the exact temperature, pressure and flow required.

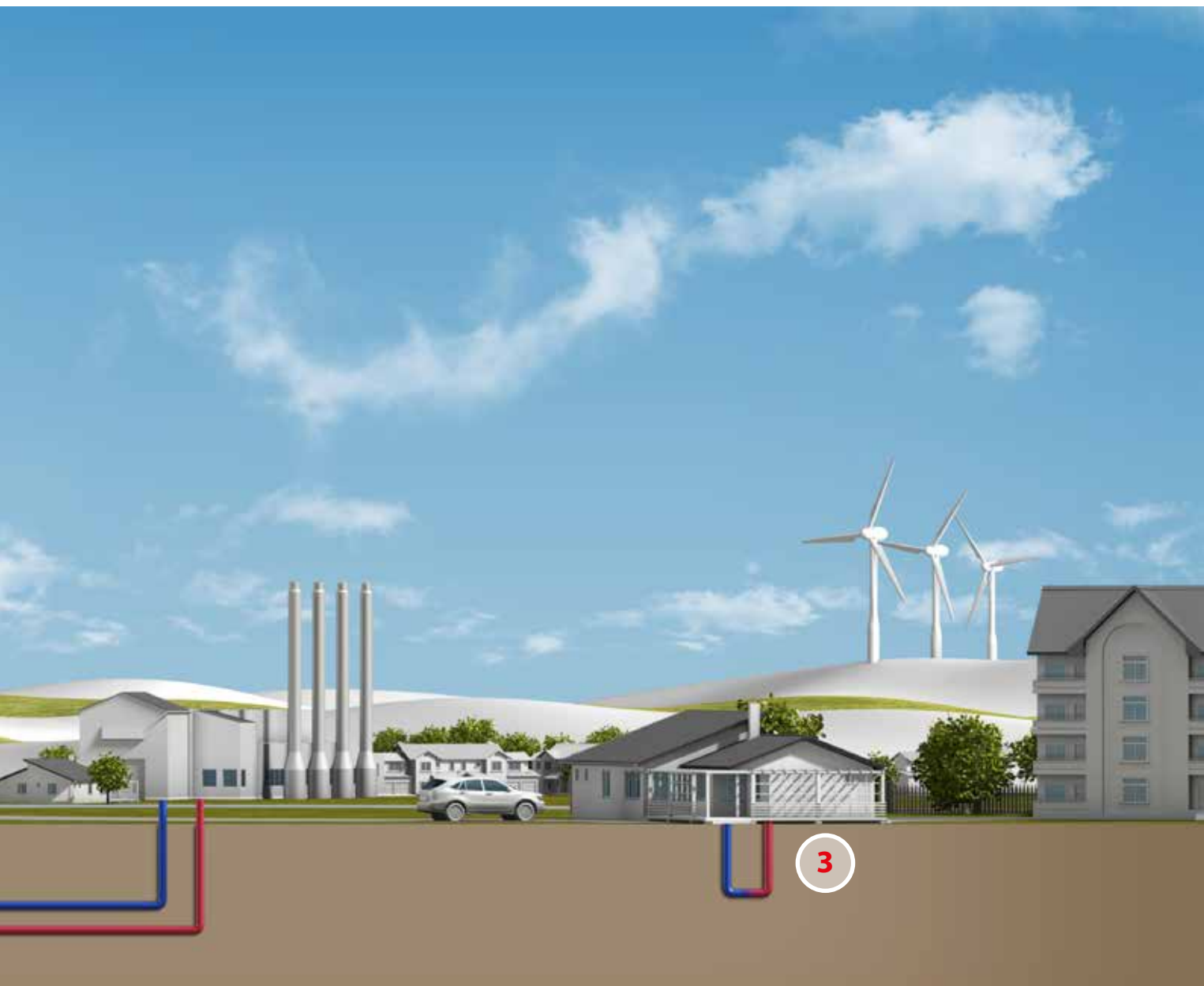
MATCHING ENERGY SOURCES TO ENERGY NEEDS



Infrastructure and available heat sources

Where available, district heating is the best heat source you can choose. District heating is good for us financially and good for society as a whole. Where district heating is not available, try to make the best use of the available alternatives, especially

renewable energy. The best solution is always when you succeed in matching the infrastructure with the available supply of energy sources, building type and your customers' specific needs.



1. District heating

Used in urban areas or rural areas where micro networks have been established. District heating is cost and energy efficient and convenient for people to use. Choose district heating wherever possible.

2. Combination heat sources

Used in buildings where a primary heat source is combined with a secondary energy supply (e.g. a heat pump or a thermal solar heating system). These systems are typically used when renewable energy sources cannot cover the entire heat demand of the building.

3. Individual heating

Used outside urban areas, or where there is no opportunity to connect to a district heating network. Depending on local circumstances, you may use heat pumps, solar heating, boilers or electric heaters. Energy savings can typically be achieved by installing a Danfoss heat pump or installing oil or gas fired condensing boilers.

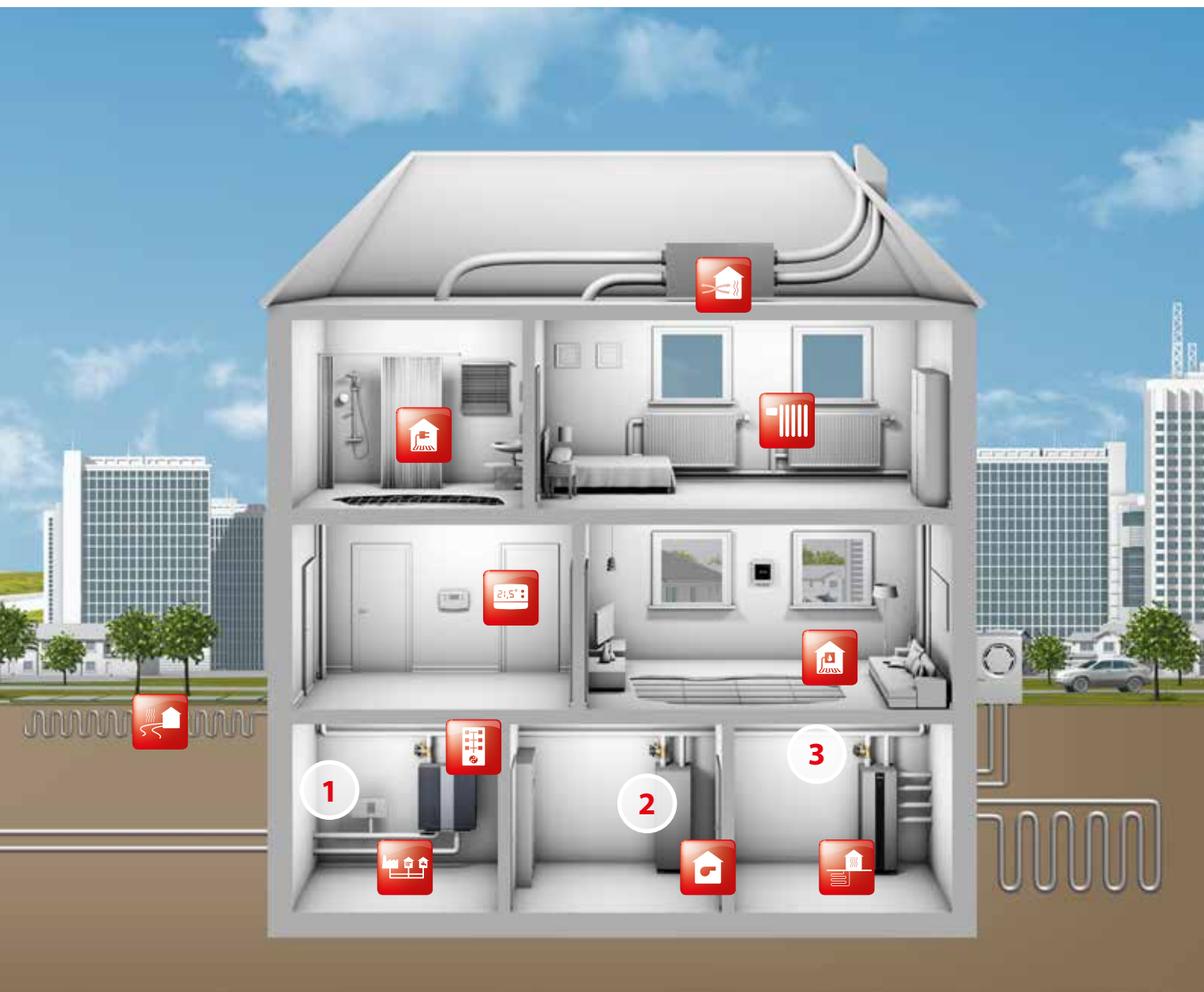


Saving energy with automatic controls

Danfoss automatic controls constantly adapt to both indoor and outdoor conditions, saving energy and money while improving home comfort. With the use of intelligent features like night set-back, timers and individual room control, Danfoss automatic controls prevent overheating and the unnecessary consumption of hot water and electricity.

All Danfoss automatic controls have been carefully developed to make the design, planning and installation of a control system easy. This allows your customers to enjoy the benefits of increased comfort and reduced energy costs, while you enjoy more word-of-mouth recommendations.





Examples of how controls optimize heat systems

1. Adjusting to outside temperatures

When flow temperature in the heating system reflects outside temperature, the user will enjoy both increased comfort and lower heating bills. In one-family homes, the expected energy saving from weather compensation is 10% on average and can be as high as 40%.

2. Using available energy sources

Whether a building uses single or multiple heat sources, correct control mechanisms ensure optimum output and match supply to the actual needs of the building. In this way, comfort is kept high and energy consumption low.

3. Balance = savings and comfort

A properly balanced heating system supplies the correct heating capacity to all rooms, regardless of load conditions. Energy is saved because temperatures match the need in every part of the heating system.

START COMBINING TODAY

With Danfoss as your heating solutions partner, you can enjoy easier planning, design and installation of high-performance heating solutions.

Working with a single provider makes your life easier and ensures consistent standards and advice – the best way for you to provide your customers with the ultimate in energy-efficient solutions.

1 way

visit heating.danfoss.com

For more information,
support and materials for
your customers.

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