





Daikin's vision on the future of heating in Europe

Daikin Europe Press Conference
ISH 25
18 March 2025

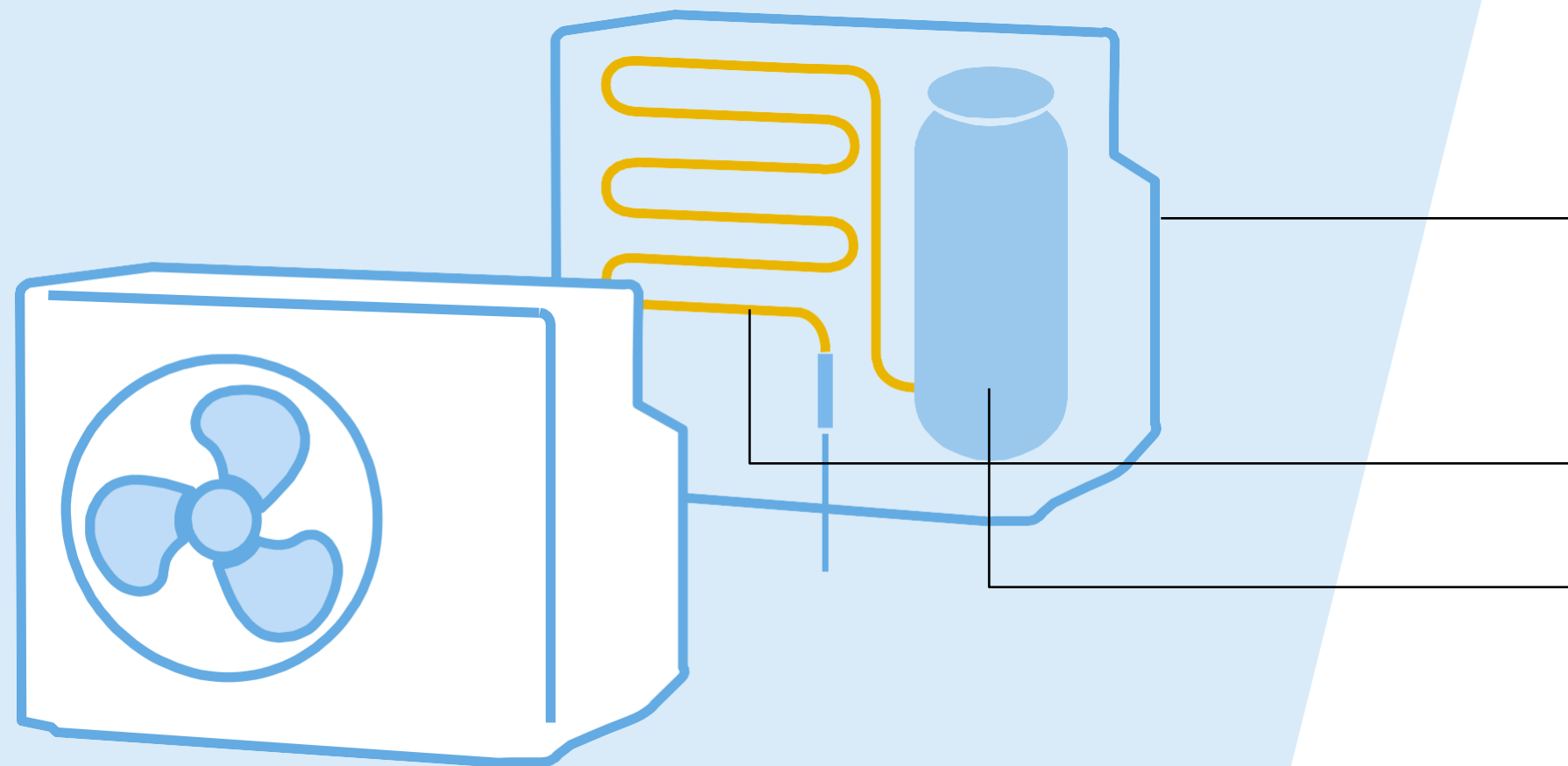


Daikin, a
pioneer in
heat pumps

From a pioneer in heat pump technology ... to global leader

From expert in all essential components of heat pumps ...
... to a global

HVAC-R leader



Units and systems

With direct and indirect temperature exchange

Refrigerants

Compressors

Established **global** presence

Global
N°1 Air Conditioning
company*

Innovation
100 years

Active in
175 countries
world-wide



Daikin
is a leading
player
worldwide

Heating
Cooling
Ventilation
Air purification
Refrigeration

Turnover
28 Billion Euro

Employees
98,000

R&D Centres
53 world-wide

Manufacturing
125 Production sites

European leadership

Manufacturing in
15 Factories

Development
12 R&D centres

Partner support in
+110 Training centers

Daikin
is a leading
player in
Europe

Made in
Europe
for Europe

Years of innovation

50 in Europe

Residential air conditioning

N°1 in Europe

Most installed
hydronic heat pump brand

N°1 in Europe

Active in

44 countries in Europe

European production network | close to market

13

HVAC-R manufacturing sites

- 50 years of manufacturing excellence
 - DX
 - Heat pumps
 - Applied systems
 - Cold chain systems
- Annual production: 5,800,000 units



Product development in touch with local markets

12

HVAC-R R&D centers

- Local climate needs
- Customer centric controls
- R&D innovation and partnerships
- Core : EDC – Belgium
 - EMEA Development Centre
 - Global R&D HQ for sustainable heating and cold chain



Daikin partners | driven by care

- Extensive network of professionals
- Dedicated to ensuring people's comfort
- Through energy-efficient installations and services

35,000+

**Installer &
maintenance partners**



Driven by care | in residential heating & cooling

Registrations

End users 616,000

Installer companies 12,700



Online platform connecting installer, end user and Daikin



Stand By Me

Best comfort and after-sales service for end users



Heating Solution Navigator

Heat pump & selection & installation tool



E-Care Mobile App

Registration, configuration and troubleshooting



Residential Solution Navigator

End user heat pump selection tool



A pan-European support and guidance program for the residential installer

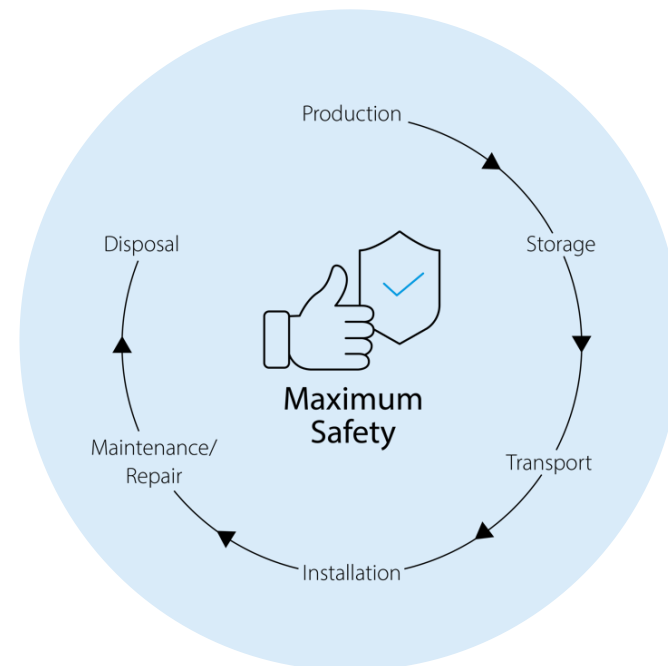
Unlock full business potential

Extensive trainings + certification for:

- Peace of mind
- Highest installation quality and
- Profound after-sales care throughout the product lifespan of our products

More installer benefits:

- Specialised knowledge
- Strong technical foundation
- Certification to create trust
- Joint business expansion
- Merchandising



Programme 1

Daikin Altherma 3

R-32

1 Day

Product training
(F-Gas licence necessary)

Programme 2

Daikin Altherma 4

R-290

3 Steps

Safety training
(30 minutes, 1 hour + 1 day)

1 Day

Product training
(F-Gas license necessary)

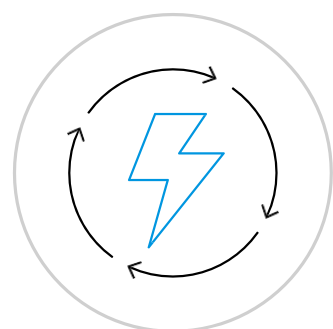
Daikin partners | driven by care

116

Training centers



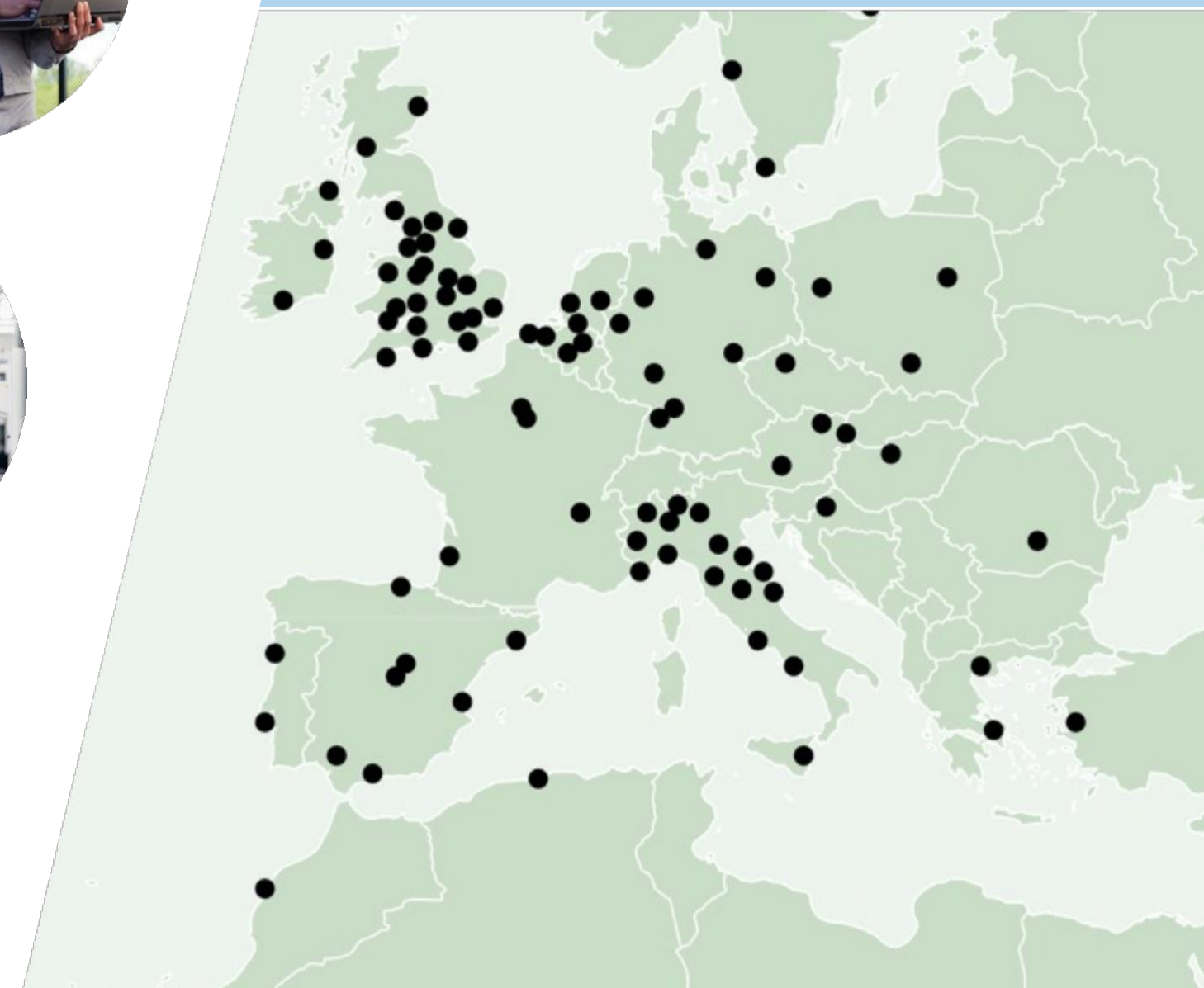
Green skills development
for a resilient economy



Empowering the transition to
renewable energy



Face to face and online
training sessions/year
across Europe



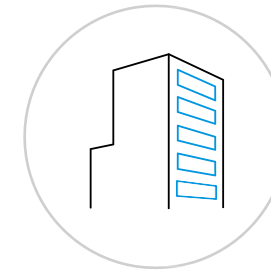


The market
changes ...
with long
term growth
foreseen

General market trends



Residential



Commercial



Industrial

Challenge

High upfront costs and energy prices slowing homeowner adoption.

Low GWP* technologies are at **early stages** for reaching very high efficiency.

High dependency on fossil fuels.

Trend

Slow shift from **gas boilers to heat pumps** due to subsidy uncertainty.

Continuously growing interest for decarbonization of buildings.

Demand for high capacity heating loads is **slowing the transition from fossil fuels.**

Opportunity

EU mandates & rising energy prices will drive long-term demand.

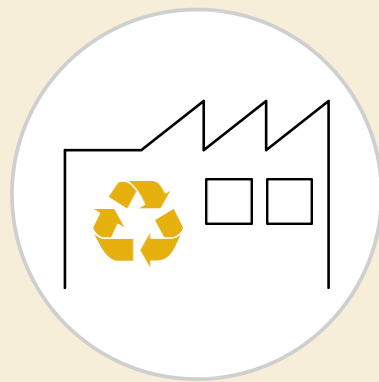
Cloud based technologies for energy optimization and heat recovery.

Digitalisation boosts demand for data centers and waste energy recovery/district heating.

Temporary slowdown in the European hydronic heat pump market after major investments

Heat pump sector investments

2022- 2025*



7 billions euro in residential heat pump production capacity

**Source: EHPA*

Challenges in the market

Economic Downturn

- Slow down & cost of living crisis

Policy Instability

- Reduced priority for energy transition in member states
- Changes in support for heat pumps

Gas Prices

- Continued subsidising of gas
- Renewed interest in gas production

Job Reductions

- Over 4,000 jobs cut



Slower transition from fossil fuels to heat pumps



Inconsistent regulations and incentives in key European markets limit heatpump deployment

Energy prices and regulation for the replacement market remain main challenges

Best practice example: UK-BUS incentive

- Consistent incentive policy
- Straightforward incentive registration process
- Other markets suffer from instable incentive value and complex application

BUS (UK): Boiler Upgrade Scheme

- Cover part of the cost of replacing fossil fuel heating systems with a heat pump or biomass boiler
- Incentive up to £7,500

From strong to weaker
implementation



	Regulations New Build market	Regulations Replacement market	Incentives value & registration processes	Energy Prices electricity/gas ratio	Market growth Air to water HP qty 2023/2024
Germany	●	●	●	●	-43%
France	●	●	●	●	-45%
United Kingdom	●	●	●	●	+34%
Netherlands	●	●	●	●	-37%
Italy	●	●	●	●	-37%

Source : EHPA, Daikin Europe internal analysis

Despite temporary slowdown, long term growth towards 2030 remains valid

Fit for 55 package

- Aim to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels

Energy Performance of Buildings Directive (EPBD) | proposed revision:

- Possible introduction of minimum energy performance standards for existing buildings
- Requirement for new buildings to be “zero-emission” by 2030.

Carbon Pricing Mechanisms (ETS2) | Start: 2027

- Expansion of EU Emissions Trading System (ETS) to include buildings
- Possible increase of cost of fossil fuel heating, indirectly incentivizing the switch to heat pumps.

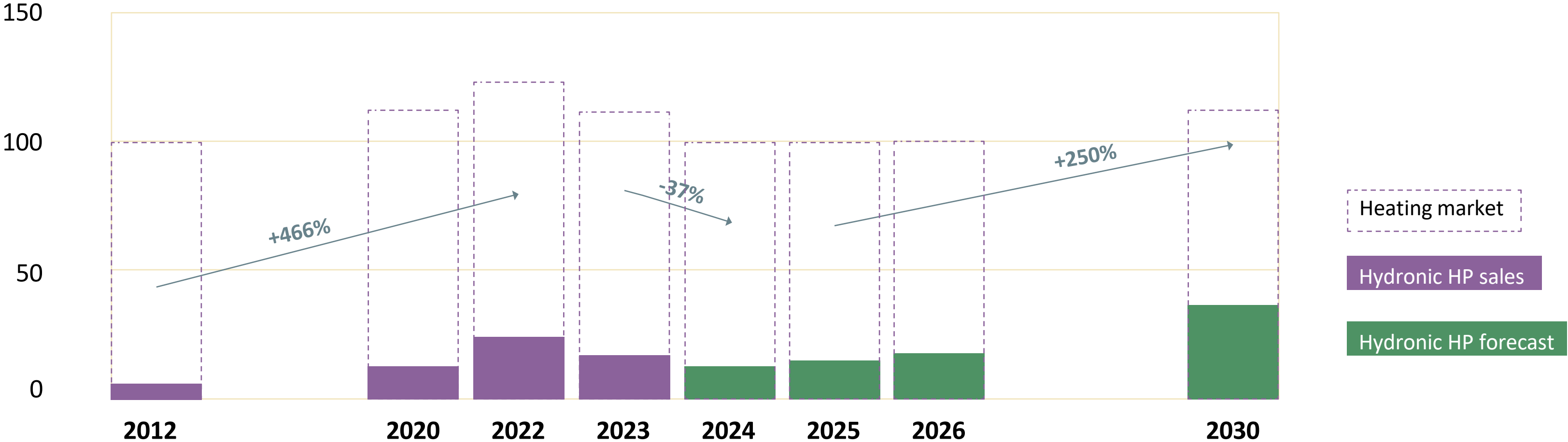
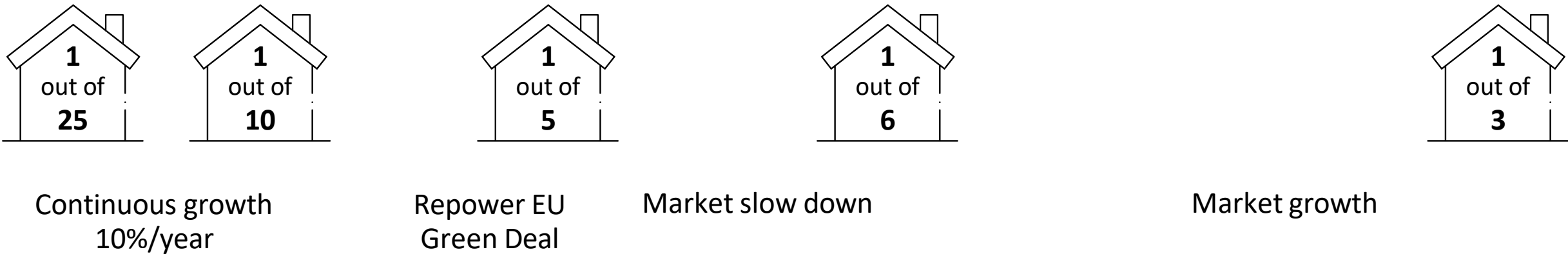


European Union
remains committed
to the

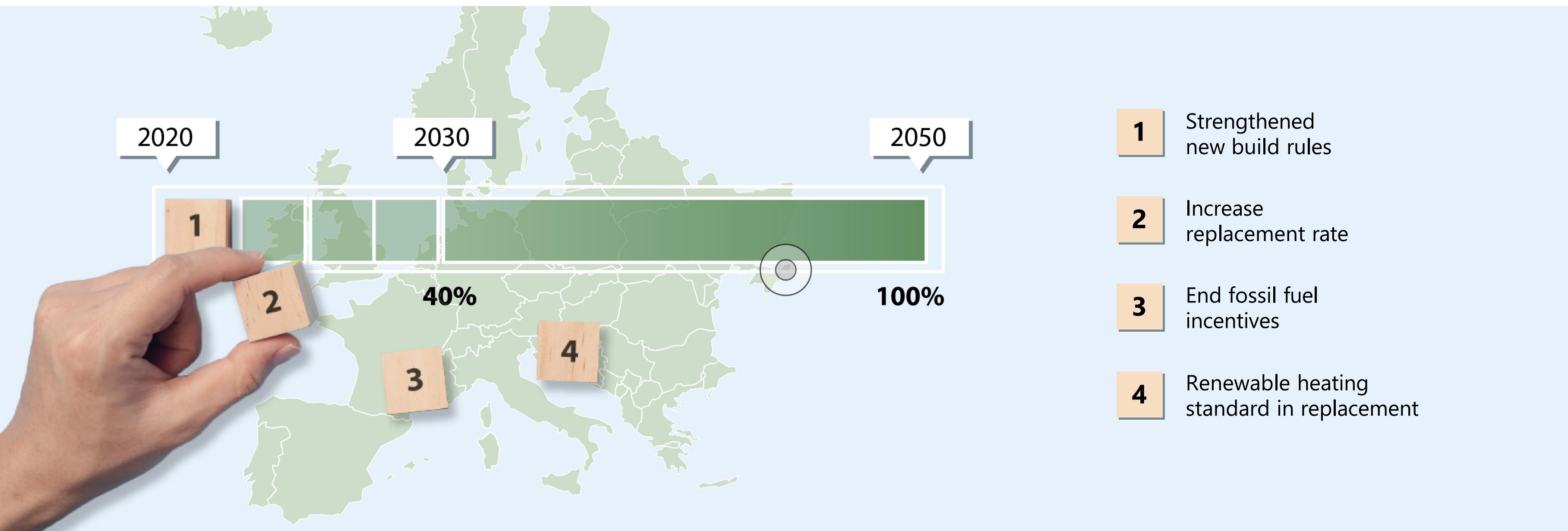
2030 goals


European Hydronic heat pump market evolution

Source: BRG, own estimate - index 100 total heating market in 2012



The 4 steps to decarbonising residential heat remain the priority

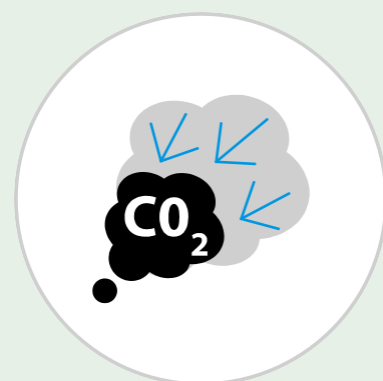




A well considered
refrigerant
strategy is
essential to drive
decarbonisation

Refrigerants play a key role in heat pump development

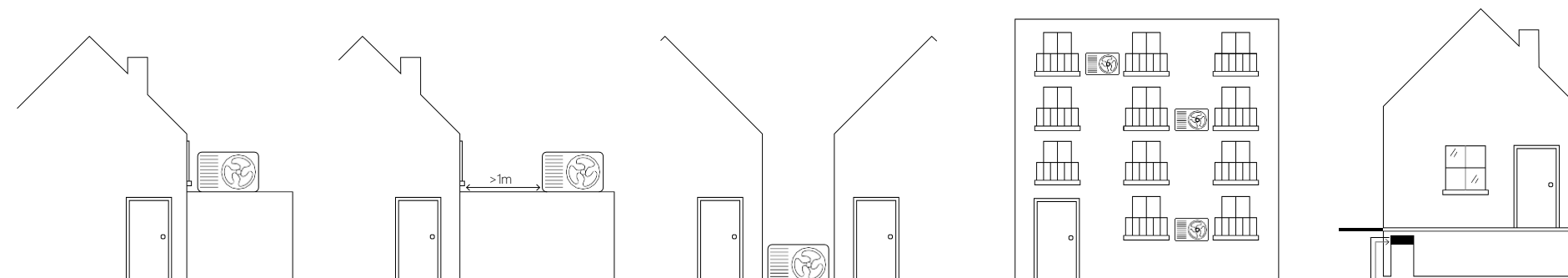
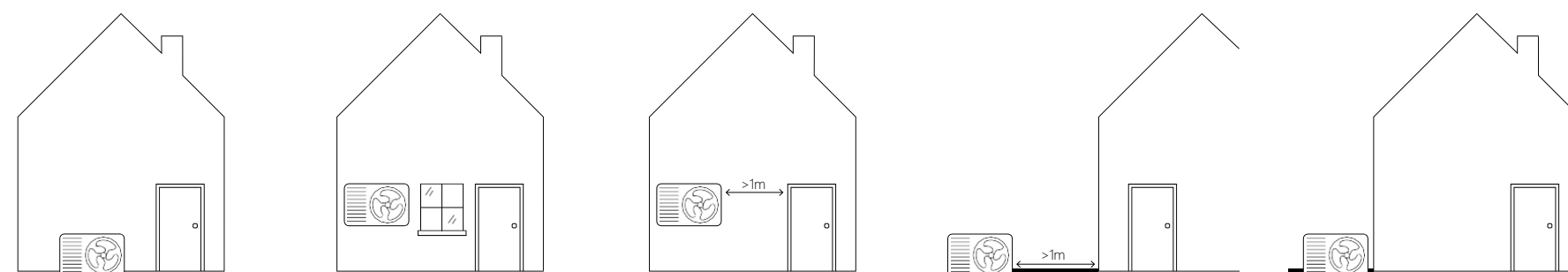
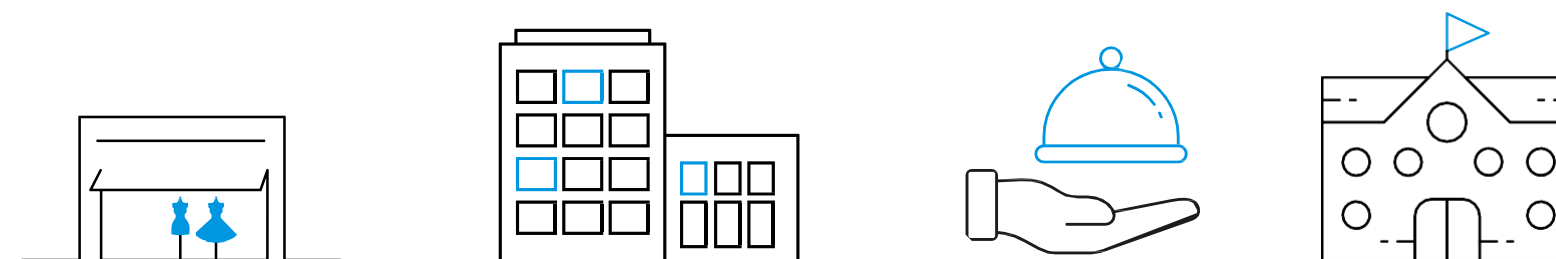
For European wide **heat pump deployment**, heat pumps require ...



sustainable
CO₂ reduction



the right performance in
cooling ° heat ° hot water



Daikin developed a **well considered refrigerant approach**

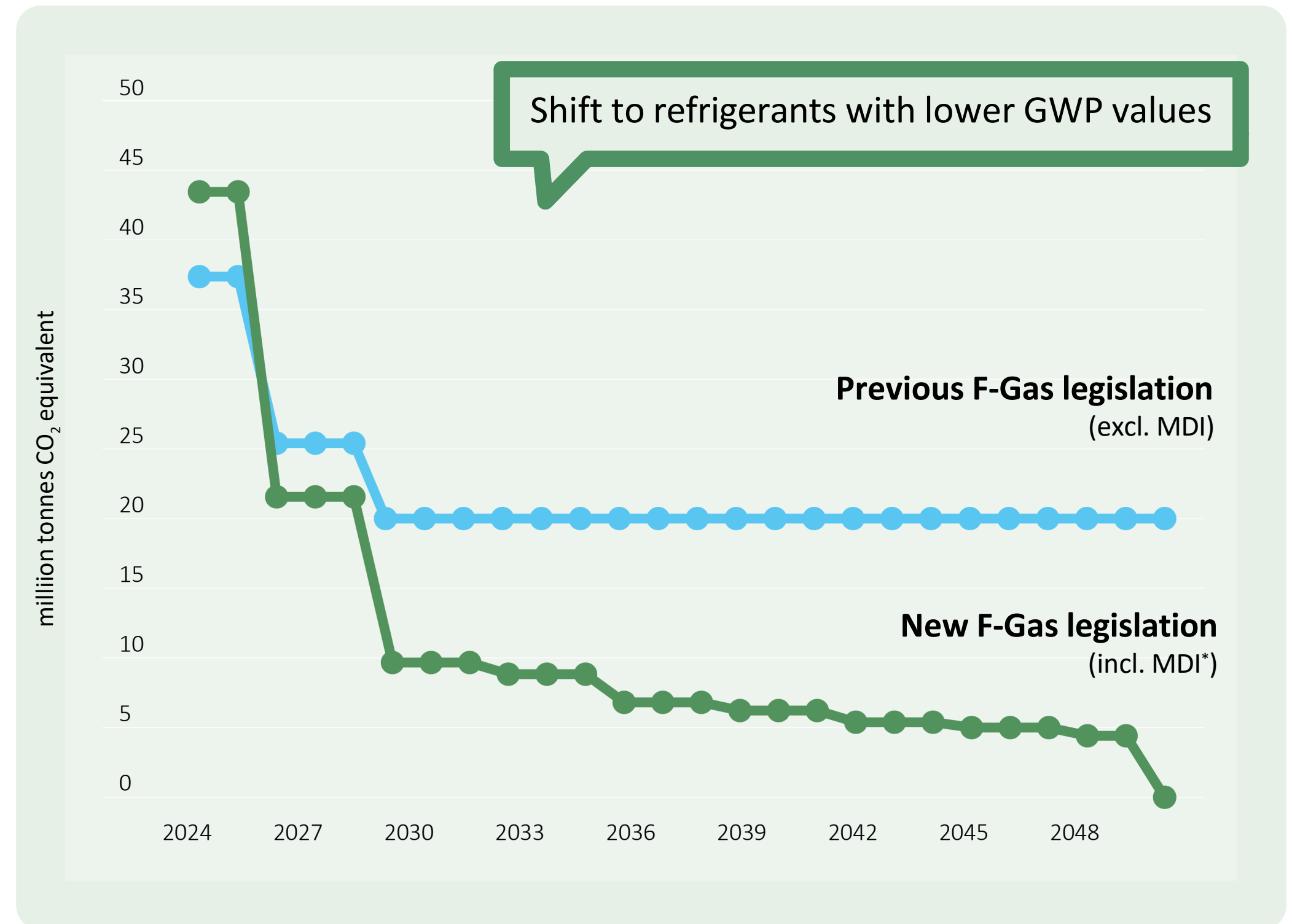
- Meeting refrigerant challenges
- Taking changing legislation into account

Revised F-Gas regulation

Stricter phase-down path

- Use of lower GWP refrigerants
- Lower refrigerant charges
- Increase refrigerant re-use

Consumption of virgin (=newly produced) HFCs managed by a quota system

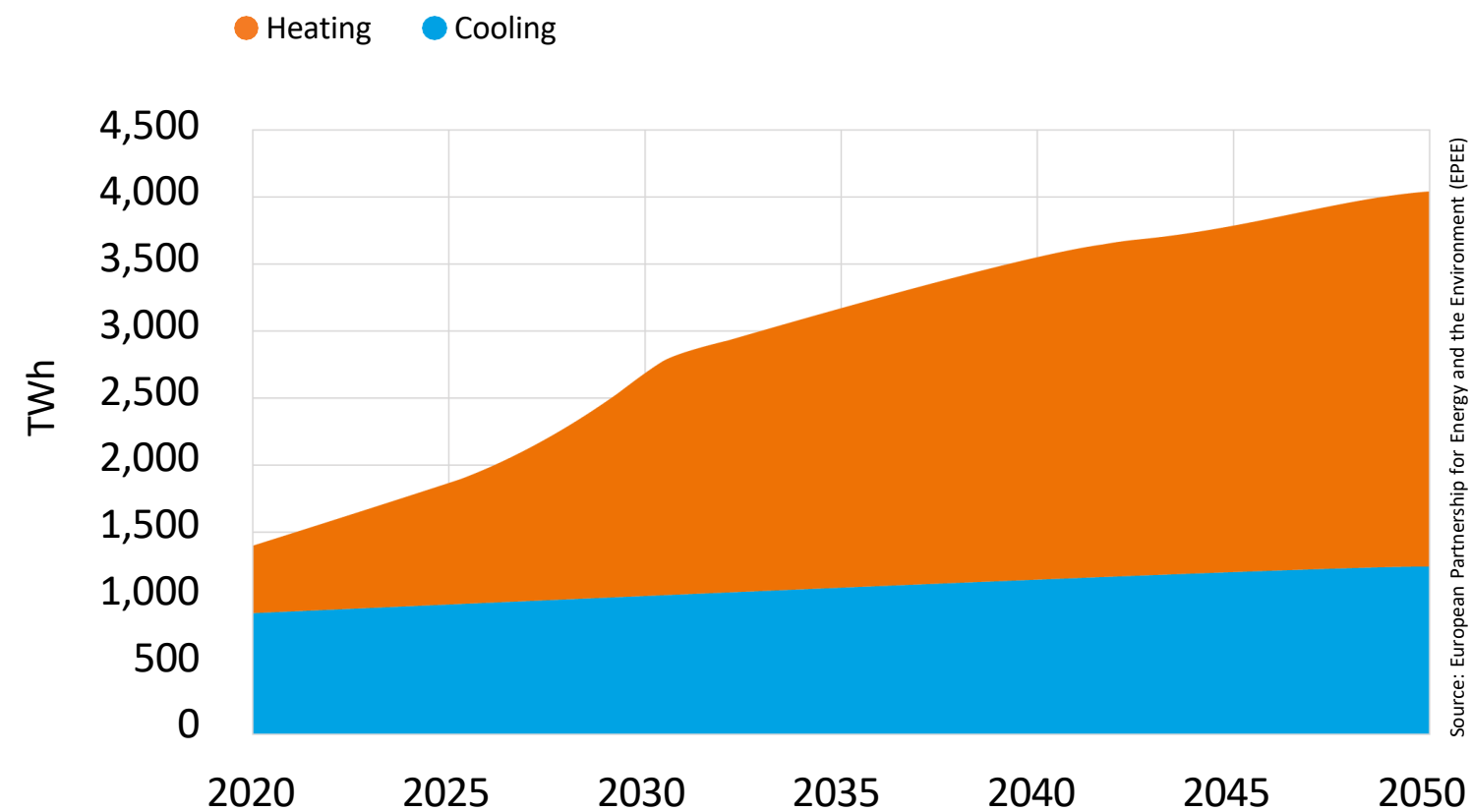


*scope has changed, the MDI (metered dose inhalers) sector is now also in scope of the HFC phase down

Importance of Heat Pumps from an environmental perspective

The delivered **heating** by RACHP* equipment is forecasted to grow to nearly **600%** between 2020 and 2050 and **cooling** to nearly **140%**

Cooling and Heating Delivered All RACHP Sectors, Mid-Growth **

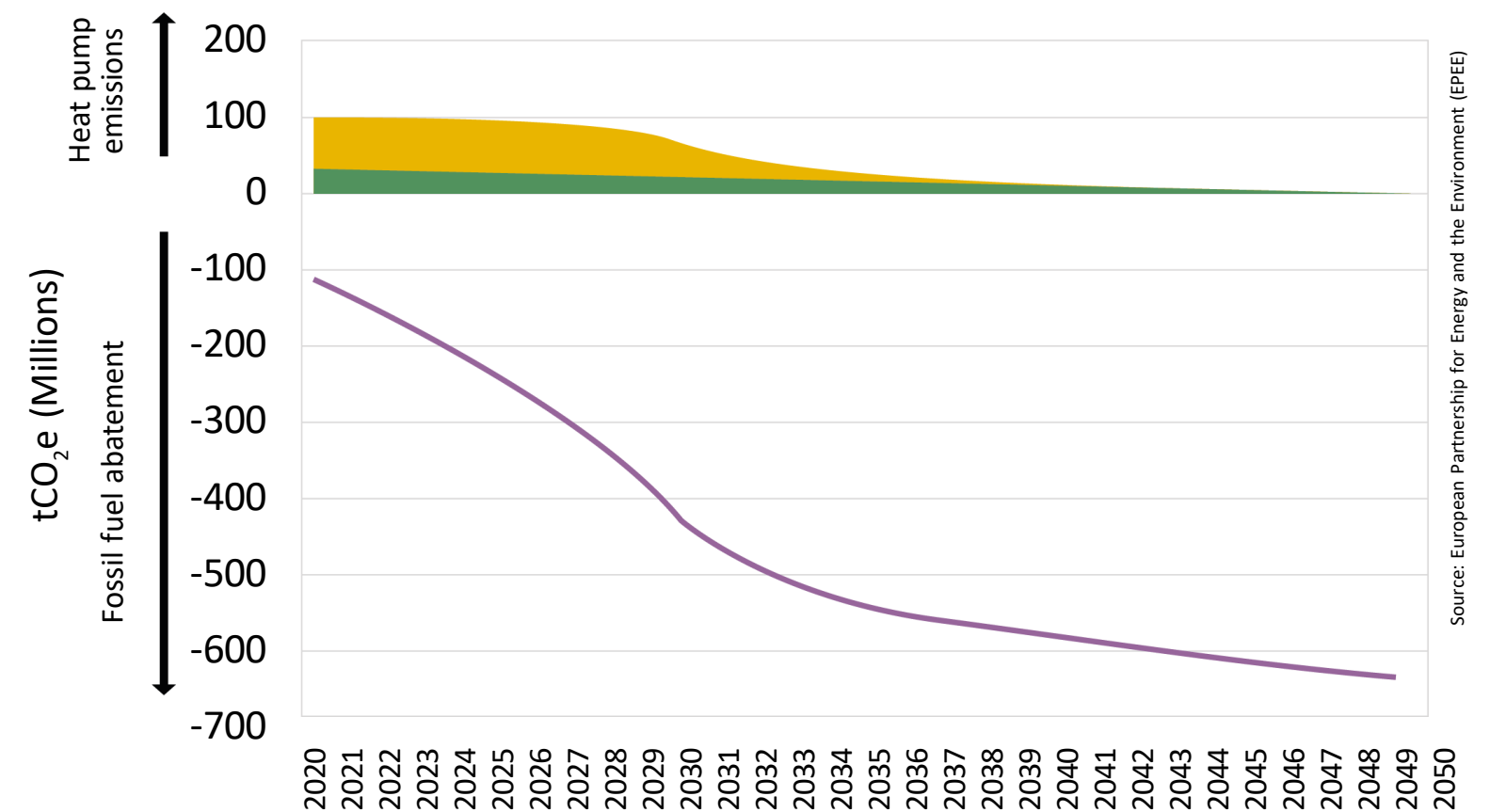


*refrigeration, air conditioning and heat pump

The impact on the climate cannot be tackled by only looking to the heat pump alone

Comparison of heat pump emissions vs fossil fuel abatement**

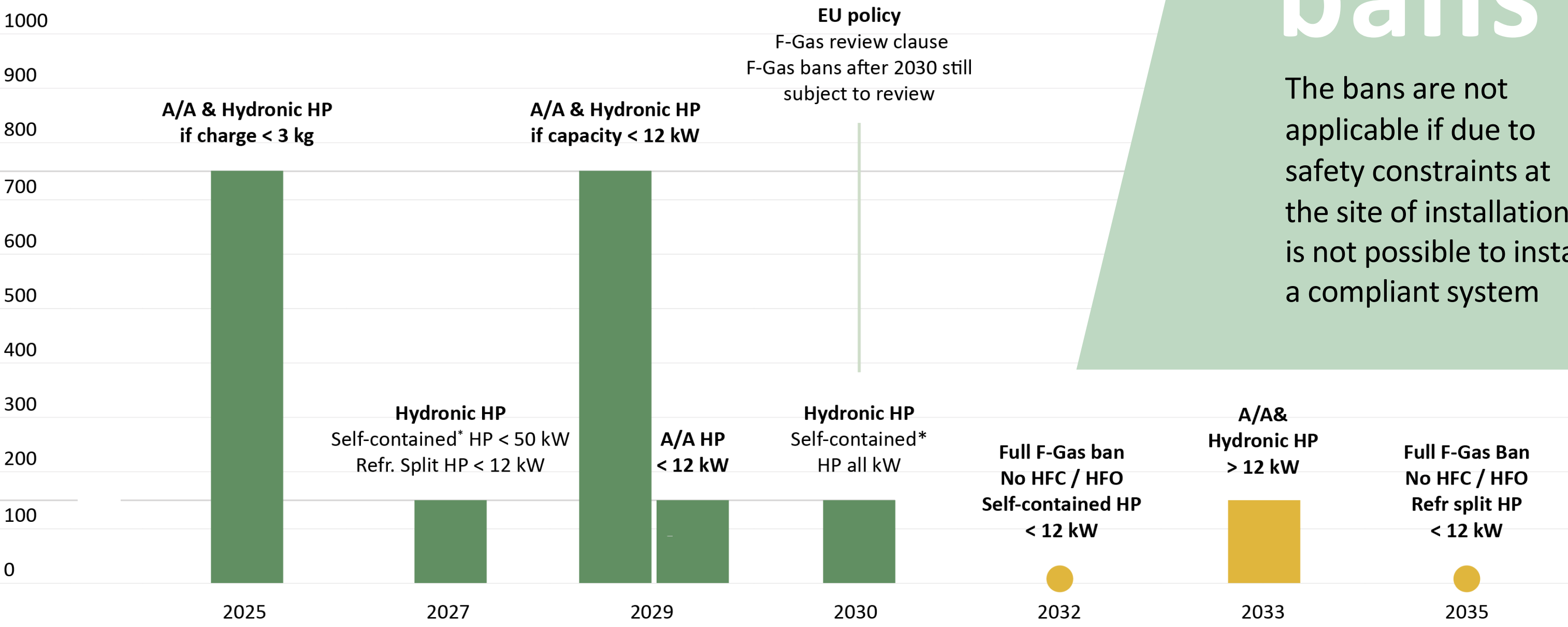
● Low Carbon energy emissions ● Refrigerant emissions (All gases) ● Fossil fuels abatement tCO₂e



GWP ban evolution

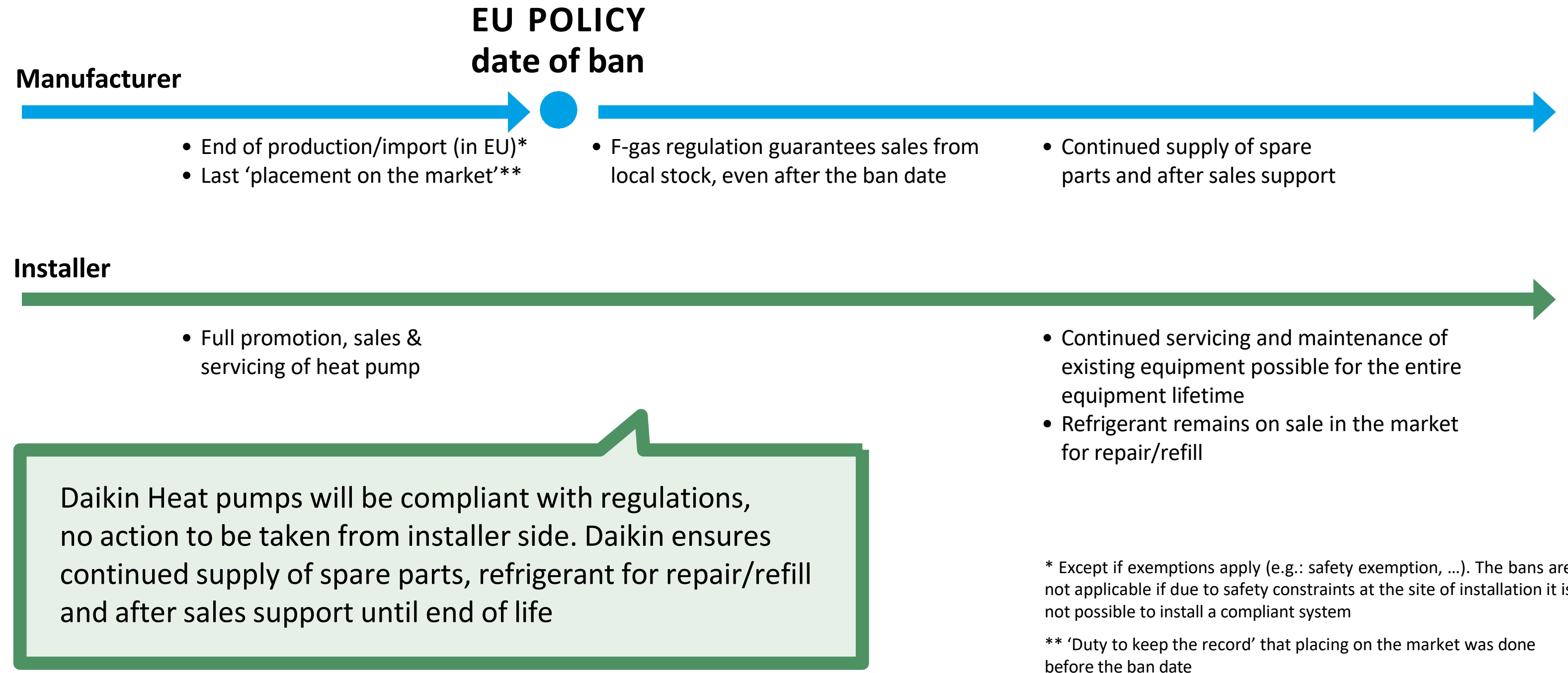
GWP bans

The bans are not applicable if due to safety constraints at the site of installation it is not possible to install a compliant system



*self-contained heat pump include : monobloc, hydro split ground source

What does an F-gas product ban mean in practice?

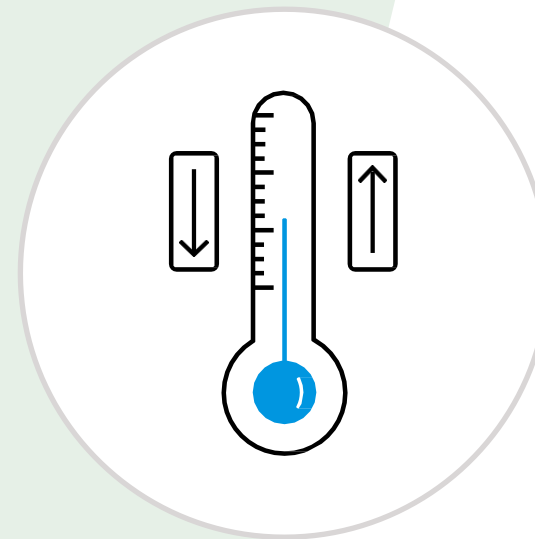


A balanced refrigerant choice per application



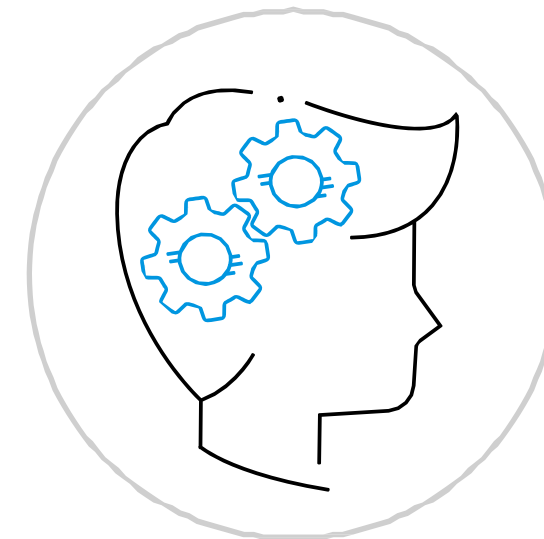
Objective

Drive the much-needed decarbonisation in the building sector



Need

Flexibility in refrigerant choices



Approach

No one-size-fits-all solution.
Different applications present different challenges

What to take into account for future refrigerants?

Selecting the right refrigerant for each application is not a one-size-fits-all solution

Best-balanced refrigerant choice for each application



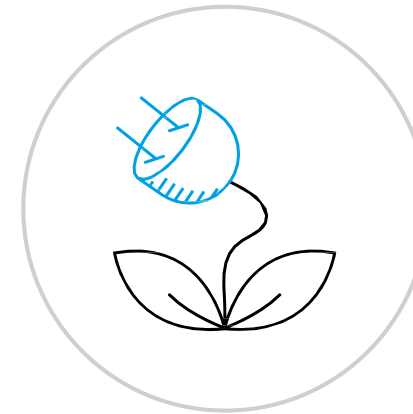
Environmental Impact

- Lower global warming potential
- In line with the F-gas regulation GWP bans and quota phase down



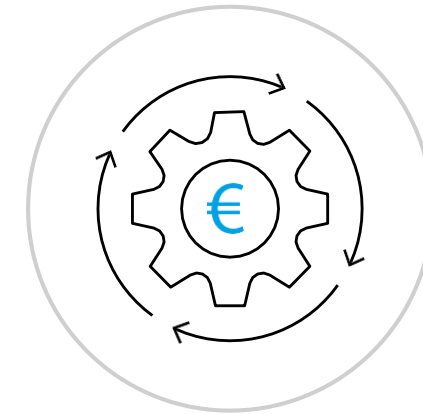
Safety

- Related to transport, storage, installation, recovery & recycling
- Toxicity or flammability characteristics



Energy readiness

- Contribute to reducing overall system operation and maintenance costs
- Potential to be recycled and reused



Affordability

- Ease of installation
- Cost of equipment and safety precautions

Residential: Safety under control!

- R-290 is a high-flammable refrigerant
- Installation limitations exists for some types of houses
- Heat pumps with non/light flammable refrigerant guarantee installation in all cases

Example: residential housing



Safety



- Related to transport, storage, installation, recovery & recycling
- Toxicity or flammability characteristics

Future refrigerants in Europe | Air-to-air applications

Application size



Larger Commercial



A2A VRF

R-410A

GWP	Type
2088	A1
Production until	
31/12/2028+ (with reclaimed refrigerant)	

R-32

GWP	Type
675	A2L
until	
31/12/2032*	

R-744 (CO₂)

GWP	Type
1	A1



Large residential /
light commercial



A2A large split
& multi-split

R-32

GWP	Type
675	A2L
until	
31/12/2028+	

R-454C

GWP	Type
145.5	HFC/HFO A2L



Small
residential



A2A small split

R-32

GWP	Type
675	A2L
until	
31/12/2028*	

R-290

GWP	Type
0.02	A3

Best candidate will be selected for each application, taking into account safety, environmental impact and affordability.

* Exemptions may apply beyond this date, currently being clarified

** Refrigerant GWP values in accordance with the revised F-gas regulation (EU 2024/573)

Application size

Future refrigerants in Europe | Hydronic (air-to-water) applications



Commercial
Air-to-water scroll heat pumps

R-32	
GWP	Type
675	A2L
Production until	
31/12/2026 for <50kW 31/12/2029 for >50kW	



R-454C	
GWP	Type
145.5	HFC/HFO A2L

R-290	
GWP	Type
0.02	A3

- For other compressor technologies, various refrigerant options are being evaluated including both synthetic and natural refrigerants.
- Best candidate will be selected for each application, taking into account safety, environmental impact and affordability.



Split type A/W heatpump



Self-contained A/W heatpump

Residential

R-410A	
GWP	Type
2088	A1
Production until	
Split type 31/12/2024 for <3kg* 31/12/2026 for ≤12 kW* 31/12/2028 for >12kW*	
Monobloc (Self-contained) 31/12/2026*	



R32	
GWP	Type
675	A2L
Production until	
Split type 31/12/2026 for ≤12 kW* 31/12/2032 for >12kW*	
Monobloc (Self-contained) 31/12/2026*	



R-454C	
GWP	Type
145.5	HFC/HFO A2L

R-290	
GWP	Type
0.02	A3

Refrigerant future



Developed
in Europe
for Europe

What's new ?

R-290 Modular Air to Water Heat Pump | EWYK-QZ



- Highly **efficient** and **scalable** heating and cooling
 - minimises environmental impact while delivering outstanding performance
- For **multi-family, commercial** and **industrial** applications
- **Modular** design
 - easy expansion
 - flexibility to adapt to changing energy demands
- **Future-ready**, sustainable solution
 - meets the latest F-gas regulations



Features

- **CLWT up to 75°C**
- Inverter Scroll Compressor
- Daikin VFD fans
- **Daikin Safety Shield:**
 - 2 leak detectors
 - 2 extraction fans
 - siren for visual alert

with external electrical connection for additional safety
- Capacity
 - **100 – 125 kW** per single module
 - Up to 4 modules in master/slave – up to **500 kW**
 - Up to 4 arrays (**2000 kW**) with iCM system control

Future VRV solutions landscape

R-32 portfolio:
a dedicated solution that makes it **easy to decarbonise commercial buildings now!**



VRV 5 S-series

VRV 5 Heat Recovery

VRV 5 Heat Pump



Introducing **CO₂ VRV** - Unique offering for customers:

- prioritising the use of so-called “natural” refrigerants over efficiency
- looking into solutions beyond the F-gas regulation deadlines



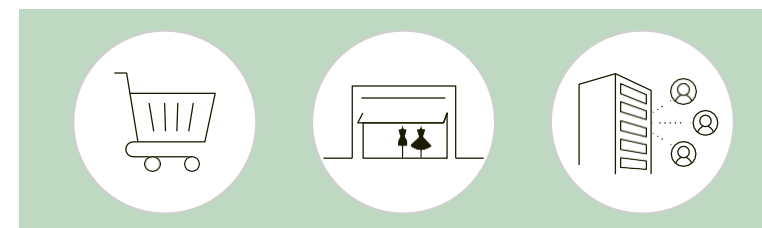
CO₂ VRV



FXFN-B2



FXSN-B2



The CO₂ VRV **does not replace R32 VRV5** range, but further **strengthens the extensive product portfolio**, aiming to explore new technologies

Daikin Altherma 4 H : the next generation

One efficient heat pump

Heats when it matters most

Inhouse developed and
European product technology

One safe heat pump

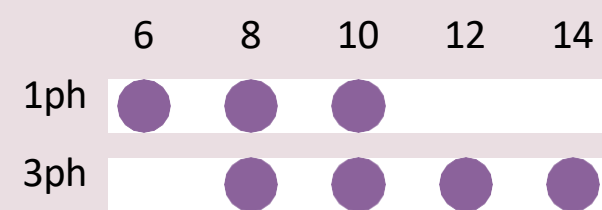
Leading safety standards
in the market

One user friendly heat pump

New user-friendly touchscreen

One silent heat pump

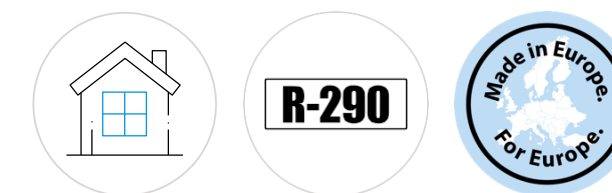
down to 28 dBA at 3 meters



- 70 - 75°C LWT at -15°C
- Heating capacity (14kW unit):
13,3 kW at -7 °C/55°C
- Operates down to -28 °C



Replacement



Highest industry safety
measures, especially working
with R290

Micro channel heat exchanger

reduced refrigerant
volume

A+++



R-290 scroll compressor

wide range
silent





Highest industry safety measures, especially working with R290

Stylish Outlook

- For new built & small renovation

Optimal Performance

- A+++
- 50° LWT at -28°C

Range

- Hydrosplit & Monobloc

User friendly

- Single drain hole
- Easy access to compressor

Silent

- Down to 32 dBA at 3 meters



Daikin Altherma 4 H : the next generation

One efficient heat pump

Heats when it matters most

Inhouse developed and European product technology

One safe heat pump

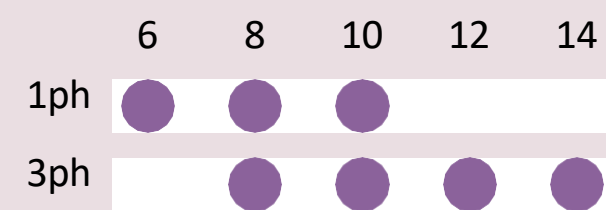
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- 70 - 75°C LWT at -15°C
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- Operates down to -28 °C





Daikin Altherma 4 X: Air-to-air X air-to-water heat

Simultaneous air-to-water & air-to-air heating & cooling



Our vision on the future of heating

Hydronic Heat pump market

Temporary **slowdown**
after major **investments**

Outlook 2030 **growth**
1 out of 3 = heat pump

Multi-refrigerant strategy

Optimized performance in
all applications

Flexibility in **refrigerant**
choice required

No one-size-fits-all

Close to Market
European Network



Driven by Care
116 training centers
Stand By Me

Years presence
+ 100 Global
+ 50 Europe

Global &
European
leader
in HVAC-R

Replacement

New build

Residential

Commercial
Small to large

Large Commercial
& Industrial

R-290

R-454c

Daikin Altherma 4 H
Daikin Altherma 4 X

R-744

CO₂ VRV
VRV 5

R-32

R-290

Modular heat
pump EWYK-QZ



PRESS KIT