

KEEPING HEAT PUMPS ROLLING

Ensuring all refrigeration technologies are kept in play is critical to delivering the heat pump roll out.



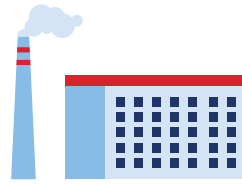
Honeywell

REPowerEU is the European Commission's plan to rapidly make Europe independent from Russian fossil fuels well before 2030. The strategy seeks to diversify energy supplies, boost renewable energy and enhance energy savings. One of the key areas of focus, therefore, is tackling the enormous energy requirements of heating and cooling the 131 million EU buildings.

BUILDINGS ARE RESPONSIBLE FOR:



40%
of EU energy consumption



36%
of greenhouse gas emissions

DELIVERING REPOWEREU

Today



19.9 million
heat pumps in Europe

Target by 2030

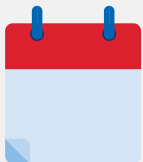
60 million
heat pumps in Europe



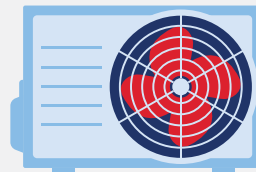
3 million
heat pumps sold in Europe in 2022

40 million
more needed

The Challenge



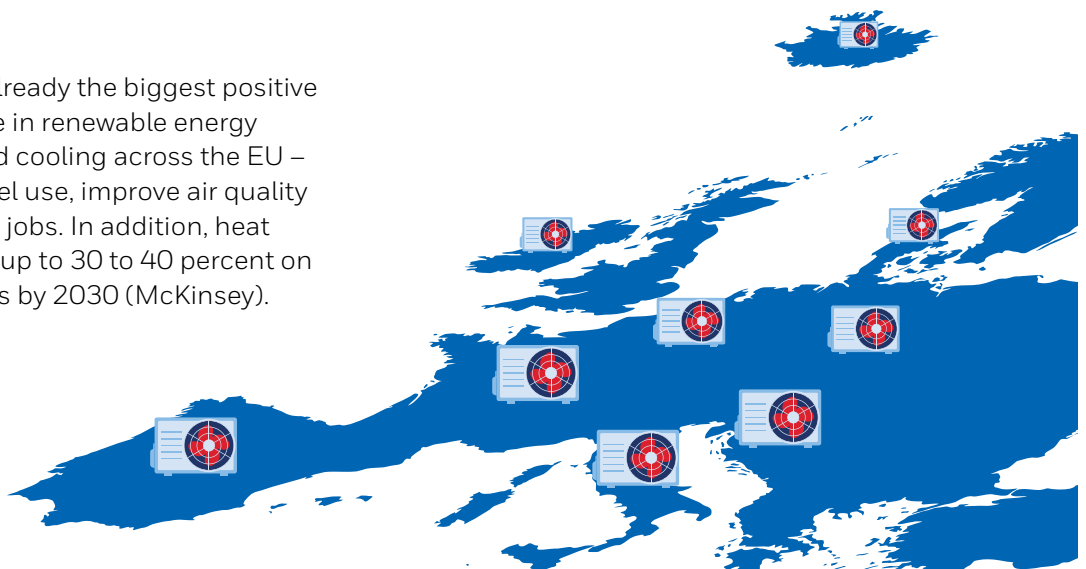
6 million
every year



2 new heat pumps
for every one on the market today

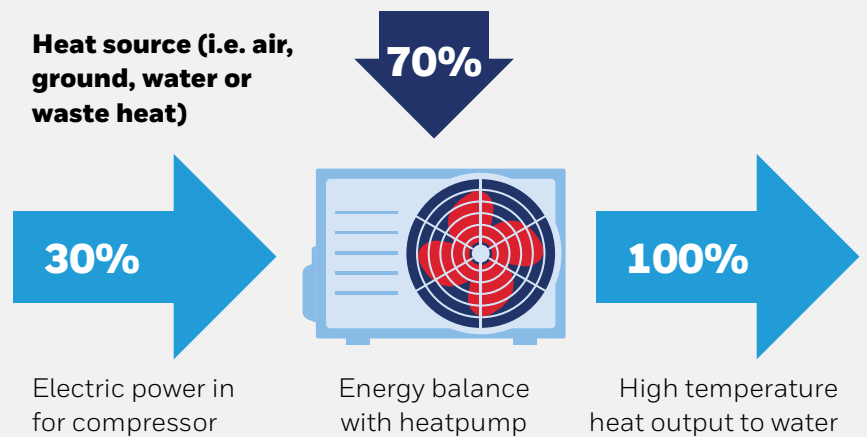
WHY HEAT PUMPS?

The heat pump sector is already the biggest positive contributor to the increase in renewable energy production for heating and cooling across the EU – helping to reduce fossil fuel use, improve air quality and create millions of new jobs. In addition, heat pumps could help to save up to 30 to 40 percent on a household's energy costs by 2030 (McKinsey).



HOW HEAT PUMPS WORK

- Converts energy from air, ground, water or waste heat
- **3x times more efficient than traditional fossil fuel boilers**
- Refrigerant and energy related emission from heat pumps is negligible compared with fossil fuels



THE ROLE OF HFOS IN HEAT PUMPS

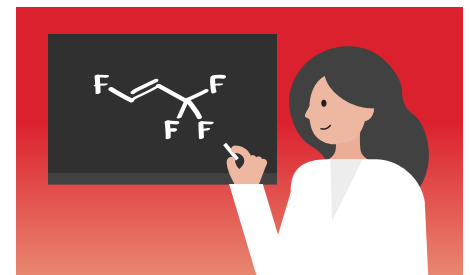
Hydrofluoroolefins (HFO) refrigerants are a critical part of heat pump technology and can help Europe reach its energy independence quicker by helping to reduce energy consumption – a key objective of REPowerEU.

Unlike alternatives, HFO refrigerants offer solutions across most heat pump applications,

property types and system sizes – from residential and district heating, to industrial and commercial and can be used in both indoor and outdoor applications. HFOs have higher energy efficiency, lower total cost of ownership and are safe for use in heat pumps, even in densely urbanized areas or buildings.

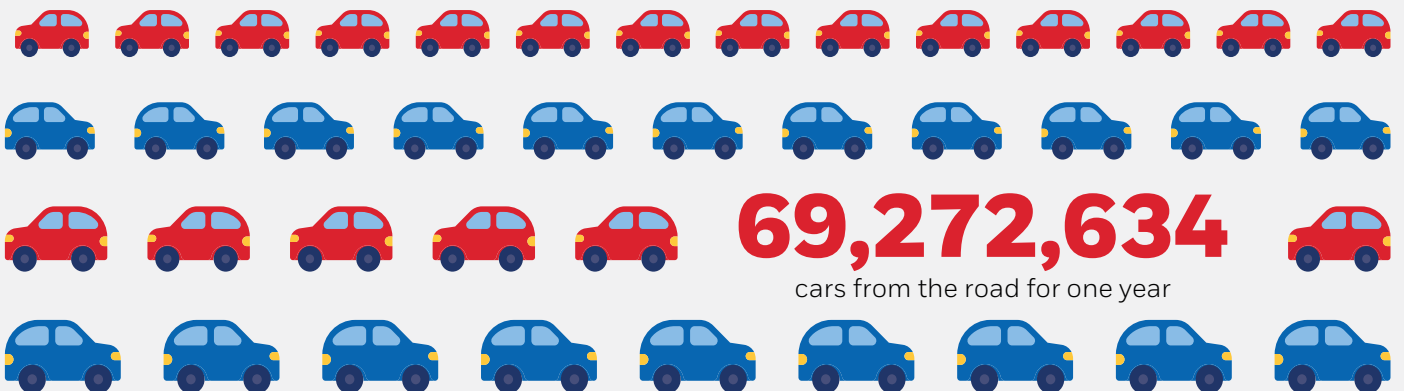
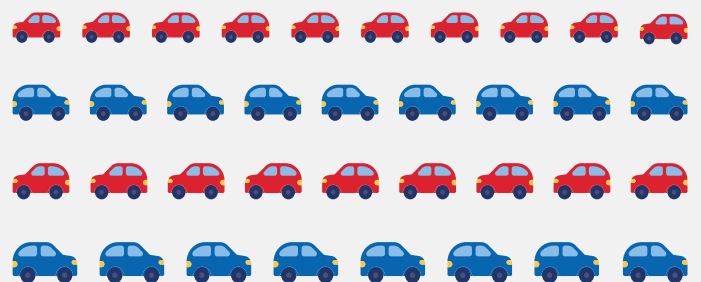
This kind of application becomes clear in a market like Spain where around 65% of housing stock are high rise and small apartments. In

such applications highly explosive refrigerants, such as propane, will most likely not be possible in many cases, due to local building and safety regulatory requirements.



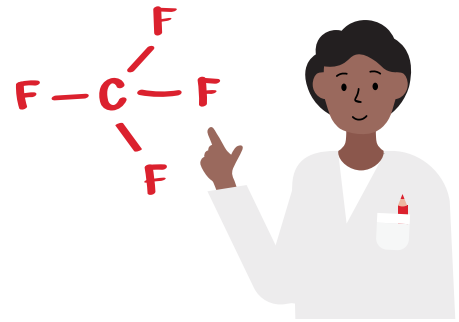
IMPACT OF HFOS ON EMISSIONS

Honeywell's HFO products alone have helped avoid the release of over 329 million metric tons of CO₂e into the atmosphere so far – **the equivalent of taking over a quarter of all cars in the EU off the road for one full year.**



EUROPEAN RESIDENTIAL BUILDINGS

The EU has stated a goal to decarbonize 40% of residential buildings by 2030, in addition to tackling emissions from industrial facilities. European's needs vary based on the type of home, its size, age and location, as well climate conditions, costs and most importantly safety. All these variables will be the determining factors of the type of heat pump to be used.



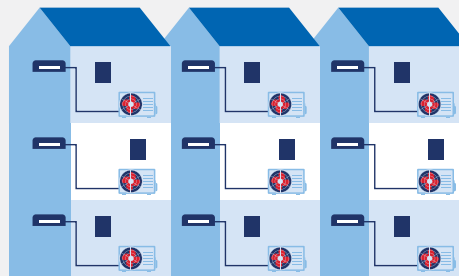
PROPERTY TYPES AS A PERCENTAGE OF ALL EU RESIDENTIAL BUILDINGS

Apartments

46%

Little or no outdoor space.
More complex planning and application requirements, stricter safety requirements.

Air to Water Split



Multiple pieces with part of the system inside the dwelling.

↑ Suitable for HFOs

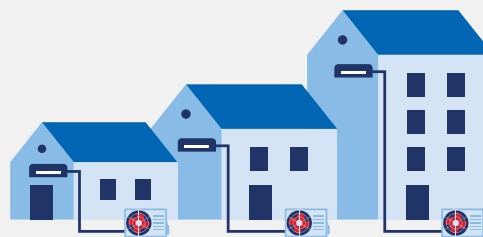
↓ Unsuitable for propane

Terraced/ Semi detached

19%

Limited outdoor space.
More complex planning and application requirements, stricter safety requirements.

Air to Water Split



Multiple pieces with part of the system inside the dwelling.

↑ Suitable for HFOs

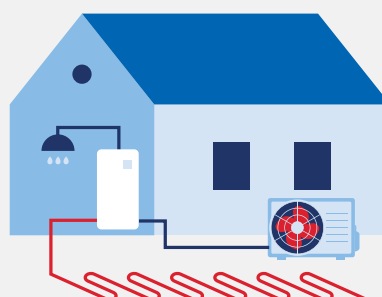
↓ Less suitable for propane

Standalone

35%

More outdoor space.
Much more scope for outdoor equipment .

Air to Water monobloc



Single piece that sits outside the dwelling.

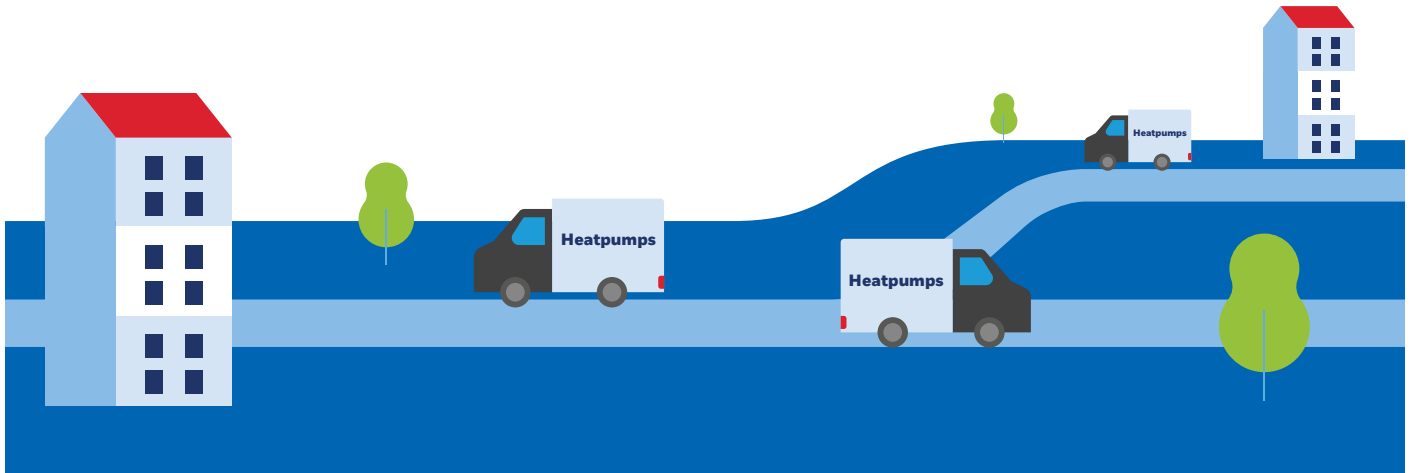
↑ Suitable for HFOs,
Propane

THE UNINTENDED CONSEQUENCES OF THE F-GAS REGULATION REVIEW

Under the Parliament proposal to revise F-Gas regulations, HFOs would be quickly phased out. This restricts the European market to solutions which are not suitable or not compliant with Member

State regulations for over half the homes in Europe. For example, according to the European Heat Pump Association, propane is unsuitable for packaged products to be installed inside the building

requiring an intermediate/ high load (e.g., an air to water split heat pump). Banning HFOs would significantly limit options, increase overall costs and slow the ambitious heat pump roll out.



It is critical that any revision to the F-gas regulation does not further restrict choice, availability and suitability of heat pump technologies. In addition to the already outlined risks, the Parliament proposal would lead to

higher energy usage and overall increased emissions.

To ensure a successful roll out of heat pumps across all of Europe, for all types of homes and buildings we believe all energy efficient technologies with low GWP

should be retained and leveraged. We call upon EU policymakers and regulators to ensure all Europeans have options and protect REPowerEU by rejecting the Parliament proposal to ban all F-Gases.



For more information:
advancedmaterials.
honeywell.com/be/en/hfo-facts



References:
hwl.co/references

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