

# Natural Refrigerants in Heat Pumps

Emissions from cooling and heating equipment result from both the energy used, but also from leaking refrigerant gases. Hydrofluorocarbons (HFCs), widely used in heating and cooling, are potent greenhouse gases with global warming potentials (GWPs) hundreds to thousands of times greater than CO<sub>2</sub>. **Natural refrigerants**, by contrast, offer minimal climate impact and do not generate persistent pollutants like PFAS — unlike certain synthetic alternatives such as hydrofluoroolefins (HFOs). HFOs are a new generation of synthetic fluorinated gases that can generate PFAS or “*forever chemicals*” — highly persistent substances that pose risks to human health and the environment. PFAS are likely to face further regulatory restrictions at the EU level, thus natural refrigerants are the best alternative.

## Natural Refrigerant Heat Pumps Are No Longer a Future Promise — They're Here

The research found over 310 **efficient air-to-water heat pump models using natural refrigerants**, such as propane (R-290) and carbon dioxide (CO<sub>2</sub> -R-744). They are available and listed for [Europe](#) and the respective Topten-websites in [France](#), [Italy](#), [Spain](#), [Portugal](#), [Austria](#), [Switzerland](#), and [Luxembourg](#), produced by at least 48 different manufacturers. These models **meet or exceed A++** energy efficiency ratings, offering a low-carbon, high-performance alternative to conventional systems that rely on hydrofluorocarbons (HFCs). The focus of these recent Topten updates are to highlight models that align with the European Union F-gas Regulation, which will ban self-contained heat pumps using refrigerants with a GWP above 150 from 2027.

*“This data sends a clear signal: the technology needed to decarbonise residential heating exists today, and it’s scalable,” said Nicole Julien (ECODES). “Europe’s shift away from climate-damaging refrigerants isn’t just necessary — it’s already underway.”*

These findings not only demonstrate that natural-refrigerant heat pumps are available and effective but also confirm that many models achieve better energy performance and higher flow temperatures than their fluorinated counterparts, as highlighted in the EIA’s [Refrigerant Myth Busting](#) report.

## Policy recommendations to promote best-in-class natural refrigerant heat pumps

- **Bonus subsidies** for energy efficient natural refrigerant heat pumps will help drive down consumer bills and emissions. These can be funded via the EU’s Social Climate Fund
- **Heat pump training schemes** should include natural refrigerant handling and provide technicians with information on the restrictions under the F-gas Regulation and the benefits of natural refrigerant systems
- **National Green Public Procurement schemes** should support use of natural refrigerants in public buildings

*“The transition is not just mandatory — it’s possible, practical, and already happening.” Said Fionnuala Walravens (EIA).*



### More information:

- Contact: [policy@topten.ch](mailto:policy@topten.ch)
- Download the EIA Report [Pumping up the Potential](#) on maximising the climate benefits of Europe’s heat pump roll-out with natural refrigerants.
- Read the detailed policy advisor: [Heat Pump Policy Advisor \(Topten.eu\)](#)