

Blueprint for an F-gas-free future: The EU's new F-Gas Regulation



Despite posing a threat to the planet and human health, F-gases are still present in many commonly used items and applications. The good news is that viable alternatives exist, so F-gases can be phased out – a step the European Union is taking with its new F-Gas Regulation.

What are F-gases and how are they used?

Fluorinated gases (F-gases) are a group of synthetic, human-made gases that include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), nitrogen trifluoride (NF₃), and hydrochlorofluorocarbons (HCFCs). They are commonly used in various industrial applications, such as refrigeration, air conditioning, insulation, electronics manufacturing, and switchgear.

The EU will phase out F-gases by 2050

The EU reached a landmark provisional agreement in October 2023 to phase out all F-gases by 2050, taking a staggered approach. Its new EU F-Gas Regulation is an ambitious step and a progressive piece of legislation. It also signals to the market that it must innovate and move away from F-gases faster.



Why are F-gases so damaging?

F-gases such as HFCs were developed as alternatives to ozone-depleting substances, but they have significant global warming potential (GWP) and a huge impact when they leak into the environment because some F-gases break down into forever chemicals (PFAS) - ultra-persistent, polluting substances that risk human health.

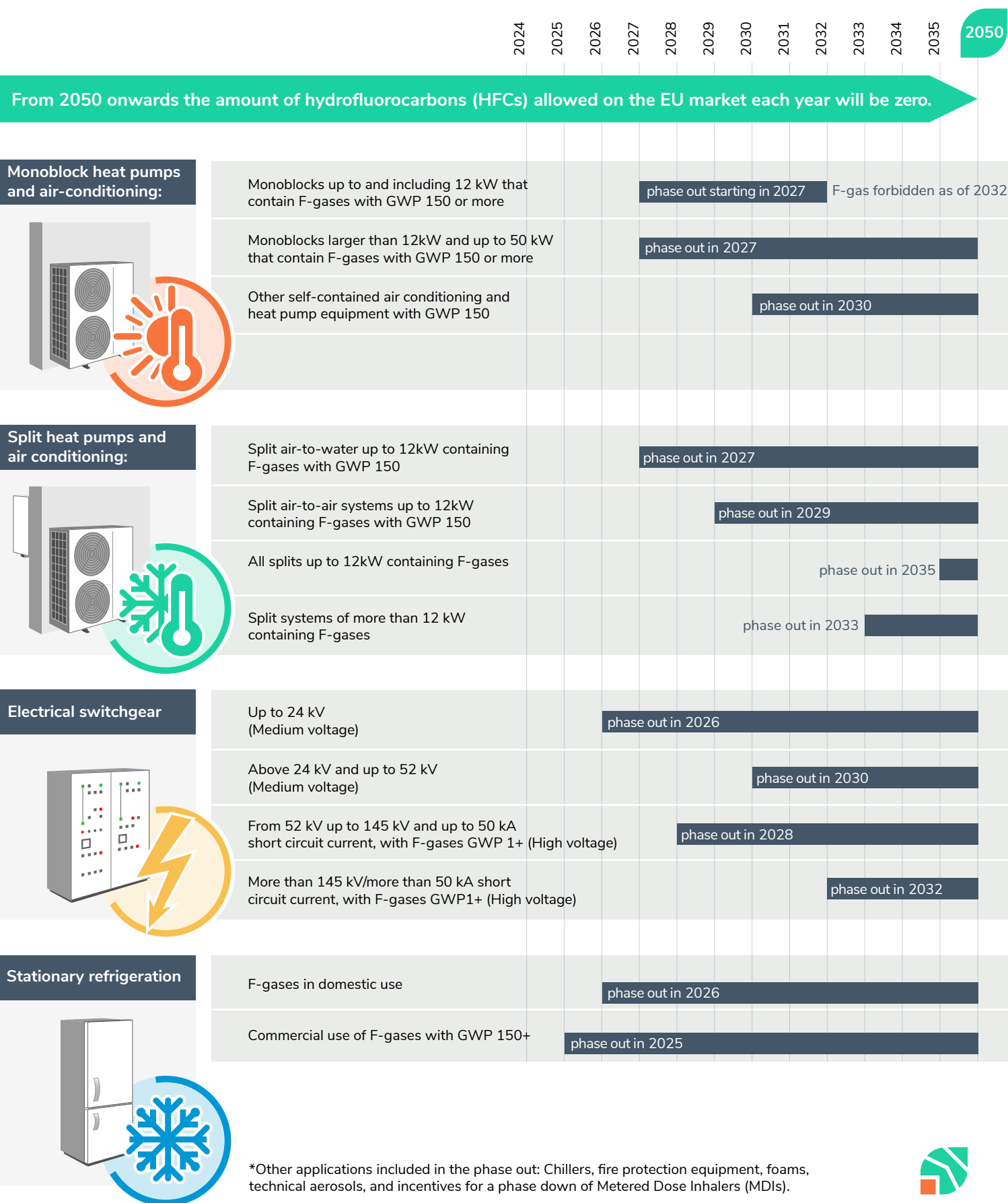
The world has already established commitments to phase down F-gases in international agreements like the Montreal Protocol and the Kigali Amendment.

Is the industry ready?

F-gases can and should be phased out. They harm our planet and our bodies – and viable alternatives exist. Natural refrigerants such as ammonia, hydrocarbons, and carbon dioxide can be used in heat pumps and air conditioning while maintaining efficiency and cost-effectiveness.

In the case of switchgear, F-gas-free technology is already used and it does not even require major changes to existing infrastructure.

Timetable for F-gas phase out by application in the EU



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F-gases will be phased out in the EU, opening the market to natural alternatives. This is a huge success given the damaging impacts of these polluting gases, which are currently responsible for 2.5% of the EU's greenhouse gas emissions and its primary source of PFAS.



The F-Gas Regulation will:



Make it safer and easier to install, service, maintain, repair, check for leaks, and decommission F-gas alternatives (such as natural refrigerants). Technicians will have to fulfil mandatory certification and training requirements.



Introduce measures to prevent illegal trade and support compliance.



Progressively prohibit the use of HFCs in servicing equipment. Virgin HFCs will not be permitted in servicing equipment with GWP >2500 in 2025 for refrigeration equipment, and in 2026 for air conditioning and heat pump equipment. A further limit on using HFCs with GWP >750 to service stationary refrigeration equipment will begin in 2032.

Potential loopholes in the EU F-Gas Regulation

Building codes and standards should not impede the implementation of the F-Gas Regulation or allow the industry to continue selling F-gas-based technologies. However, there is a risk that exemptions included in the legislation will allow this to happen.

For example, according to the F-Gas Regulation, the phase out for certain applications could receive an exemption if **“required to meet safety requirements”**.

In addition, **“when safety requirements at the site of installation would not allow using alternatives to fluorinated greenhouse gases, the GWP limit is 750.”**

Determining the full meaning of these statements is crucial because they could negatively affect the uptake or wider use of natural refrigerants.

Several countries have building safety and fire regulations that in some cases explicitly prohibit the use of certain substances in public or private buildings.



Italy, France, and Spain reported several national decrees that severely restrict the use of flammable refrigerants for use in air conditioning equipment in certain types of public access buildings.



Sweden reported that additional risk assessments are required for the use of flammable refrigerants, leading to additional time and cost constraints.



In many Member States, local building codes and fire regulations - as well as transport and storage-related codes - can severely restrict the use of flammable refrigerants.

Standards and national rules must not impede the implementation of the F-Gas Regulation and the adoption of natural refrigerants. They should be updated to reflect the technological reality. Otherwise, safety requirements could be used to avoid phasing out certain equipment in a timely manner in unpredictable ways.