AmCham EU
SPEAKING FOR AMERICAN BUSINESS IN EUROPE

Our position

Fluorinated greenhouse gases regulation: a multisectoral perspective

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American Chamber of Commerce to the European Union
Speaking for American business in Europe

Avenue des Arts/Kunstlaan 53, 1000 Brussels, Belgium • **T** +32 2 513 68 92
info@amchameu.eu • amchameu.eu • European Transparency Register: 5265780509-97

Executive summary

Although they do not harm the ozone layer, hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6) are powerful greenhouse gases (GHGs) that contribute to climate change. The European Union is right to target this widely used family of fluorinated gases (F-gases) and push society towards ultra-low climate impact gases, known as hydrofluoroolefins (HFOs) and other alternatives. However, banning fluorinated gases outright would create unintentional consequences.

Introduction

These gases are critical in indoor and outdoor monoblock and split heat pumps and chillers. The EU's proposal would profoundly change the heating and cooling of buildings (from houses, supermarkets, hospitals, schools, office buildings and district heating and cooling installation of towns and municipalities to nuclear power station islands and beyond building) in data centres, vaccine cold chains; semiconductor production; electrical power grids; research laboratories; aerospace and medical uses.

Economic stakes are high as EU looks to ban a whole family of F-gases

While alternatives to high global warming potential (GWP) HFC gases exist in many areas, transitioning is not as simple as filling up a machine with a different gas and expecting it to function; this would be akin to putting petrol in a diesel car. There are no universal solutions. Even where there are alternatives, change must be gradual, taking disparate markets and uses and product lifetimes into account. Existing products that rely on these gases also need to be serviced and maintained until they are taken out of service and recycled.

Pushing a transition too hard and too fast would result in a significant delay of heat pump rollout, put at risk the REPowerEU targets, waste existing assets, jeopardise the Net Zero Industry Plan and weaken the economy and consumer demand for the uptake of next generation products of all kinds of heat pumps and chillers.

To ensure the EU meets its HFC-phase-out goals, it must balance ambition with pragmatism. Under the EU's current HFC phase-down, emissions are already being reduced by 80% by 2030 compared to 2015. The European Commission's proposal would add a 15% acceleration on top of this, bringing the target emissions reduction to 95%. This is a big – if not impractical – ask. The European Parliament is pushing its ambition even higher and ignoring the economic and social impact of its demands.

Although industry supports the Commission's ambition to transition to low-carbon impact technologies, decision-makers need to carefully set out the timetable and conditions for technological change that could have a serious societal and economic impacts.

Sector-specific comments

Heating and cooling

The heating and cooling sector is the largest user of F-gases, and it is moving rapidly to low-carbon impact refrigerants in supermarkets. While technology is also changing in the heat pump and air conditioning sector, refrigerant choices are more limited, particularly due to safety concerns.

The proposed ambitious phase-out trajectory would hamper the rollout of new heat pumps and the servicing of existing products. Industry is also concerned that product bans in this sector are not tailored enough and would ban a wide range of products with unintended consequences. Just like buildings and building codes are diverse across Member States based on their different environments, all product bans in this sector need to account for its complexity to ensure compliance and where necessary, effective enforcement by national authorities. Where heating and cooling equipment is installed and currently complies with the F-gas regulation, the Commission should clarify that the proposed product ban would not impede maintenance of such equipment through any supply constraints.

Biopharmaceutical

If access to HFC/HFO refrigerants were suddenly restricted or eliminated, the impact to the biopharmaceutical industry would be catastrophic, causing extensive increases in costs due to the scope of deployed assets.

The biopharmaceutical industry has a very large inventory of temperature-controlled storage facilities for drug substances, drug products, active pharmaceutical ingredients and excipients with strict temperature control – most often requiring very low temperature refrigeration – as well as governing authority reporting requirements.

Strict temperature control is accomplished with a variety of custom and commercially available refrigeration systems that range in size from very small to warehouse sized or drive-in scale storage facilities. The industry has a variety of deployed refrigeration systems that range in age from new to over 50 years old. It is difficult to estimate the value of controlled-temperature storage facilities, but as an order of magnitude one company reports that they represent roughly a billion dollars in assets. It is even more difficult to estimate the value of the stored materials, but a good estimate is an order of magnitude higher than the asset value. The industry is migrating away from high GWP HFCs toward HFC/HFO refrigerants, but to date has avoided A2L, A3 and B ASHRAE safety-rated refrigerants primarily for safety concerns related to toxicity and flammability in facilities and to warehouse operators.

The industry's rigorous validation process requires systems to be extensively tested before storing products, making the process extremely slow. It can take months to verify and prove effectiveness for each storage space or facility. The ability to change all of the temperature-controlled assets is limited by human resources and equipment supply chains. Any equipment failures following refrigerant elimination or restrictions could lead to product loss, including stock and supply shortages, and prevent medicine from reaching people and animals worldwide.

Insulating low-pressure spray foams

Ultra-low GWP HFOs are used in spray polyurethane foams to enable their insulating and structural properties. Spray polyurethane foams comprise much less than 3% of total HFO global use. Due to regulation under the Montreal Protocol and Kigali Amendment, all foams have moved to HFO blowing agents where critically necessary to maintain insulation performance standards. Low-pressure spray polyurethane foam (SPF) foams are the smallest market share of all foam types in the category.

Low-pressure, closed-cell SPF is used in insulation of cryogenic apparatuses critical to liquified natural gas (LNG) terminals in the EU, cold storage and refrigerated transport of pharmaceuticals and food, and other limited applications, including buildings and retrofits of infrastructure such as railways and tunnels. HFOs and hydrochlorofluoroolefins (HCFO) are critical components in high-performance, niche use insulation and SPF's sealant applications. They reduce thermal conductivity within the closed-cell foam structure and across surfaces, insulate and assist with polyurethane foams' superior adhesive qualities while allowing the products to air seal, reducing unnecessary air infiltration. HFO enables insulation performance that is 50% or greater than water or other not-in-kind blowing agents. The HFOs have low thermal conductivity which resist the transfer of heat, creating an ideal insulation for important building and infrastructure in extreme temperatures.

HFO is irreplaceable when used in these critical closed-cell, low-pressure SPF products and applications. There are no known nor anticipated viable alternatives to these insulating compounds, which have been proven to be safe for human health and the environment. Even if there were any potentially viable alternatives, they would require extensive research and development that would likely span decades. Any reduction of output from the niche SPF industry would decrease the pace at which Europe is able to decarbonise its building stock and reduce energy use, negatively impact the food and medical cold chain and lead to unintended environmental consequences, as each alternative product has its own drawbacks and suboptimal functional performance compared to SPF products.

Switchgear

As proposed, prohibiting the placing on the market of high-voltage (HV) switchgear could significantly limit competition in Europe, where only one European HV switchgear original equipment manufacturer would be able to supply SF_6-free solutions that comply with the requirements.

The thresholds agreed by the European Parliament would prevent the use of important technologies already on the market that significantly reduce GHG emissions compared to SF_6 and in the case of HV, reduce the CO_2 footprint. The regulation should support innovation and the deployment of grid equipment delivering the lowest impact according to a life cycle assessment in line with COMMISSION RECOMMENDATION (EU) 2021/2279. Revised rules should be technology neutral and competition-oriented in order to deliver on climate, environment, and energy objectives, notably the swift phase-out of SF_6, the deployment of readily available and best performing alternatives from a life cycle point of view, and the roll out of renewables through cleaner and safer grids, respectively.

Conclusion

The F-gas regulation is a success story that has triggered significant reductions in greenhouse gases in Europe and encouraged international efforts to reduce greenhouse gas emissions. It is inevitable when aiming to push for ever greater reductions that more sectors are impacted and the regulatory framework must be more nuanced. Our comments are aimed at ensuring the draft F-gas regulation achieves a balance between ambition and pragmatism and ensure that it remains a proportionate and effective mechanism to reduce greenhouse gas emissions without undue economic impact.