

THE ROAD TO CLIMATE-FRIENDLY REFRIGERANTS IN THE EUROPEAN UNION

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0. Abstract

EU Regulation 517/2014 on fluorinated greenhouse gases is reducing (phasing-down) the supply of hydrofluorocarbons (HFCs) to the EU market by around 80% by 2030, compared to the 2009-2012 baseline figures. Such phase-down encourages climate friendly alternatives to hydrofluorocarbons by reducing the availability of HFCs in the market. The resulting scarcity is in line with the objective of the Regulation, i.e. to reduce emissions of fluorinated greenhouse gases.

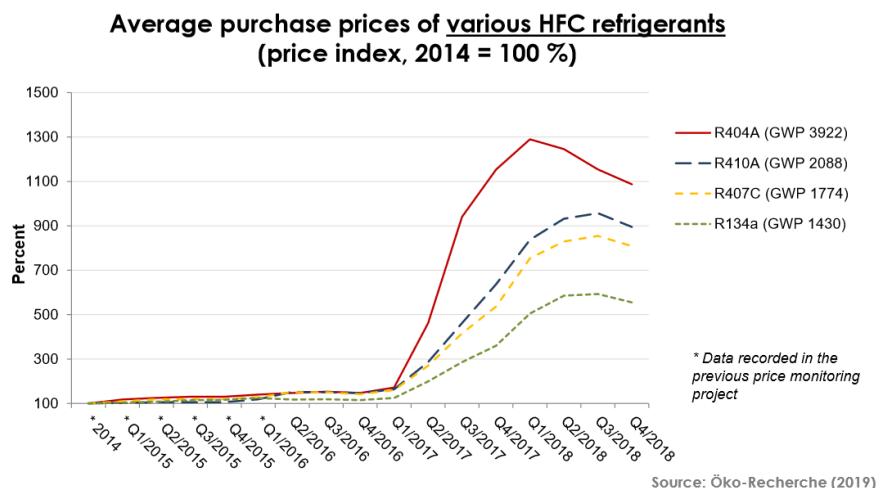
The European Commission is taking several measures to ensure a smooth transition towards climate-friendly refrigerants. Among them, standardisation mandate requesting European Standardisation Organisations (ESOs) to draft technical specifications for the use of flammable refrigerants in RACHP equipment is currently ongoing.

The fight against the small quantities traded illegally is another area where the European Commission is acting in close cooperation with Member States, with an array of actions aimed at stifling circumvention of the quota system.

1. Phase down, prices up

In 2018 a significant reduction (down to 63% of the baseline from 93%) of HFC quotas in the market took place. According to a continuous monitoring carried out by DG CLIMA, gas prices have risen sharply in 2017, while remaining relatively steady in the early years of the phase-down (2015-2016). The rising of gas prices is a desired effect of the scarcity created by the quota system and is a strong incentive to install new, more climate-friendly equipment, retrofit existing equipment, reduce leakage of gases from equipment and reuse gases.

Price developments at service company level



It is important to recall that the phase-down measure had been strongly favoured by most industry associations during the negotiations for the Regulation in order to avoid outright prohibitions.

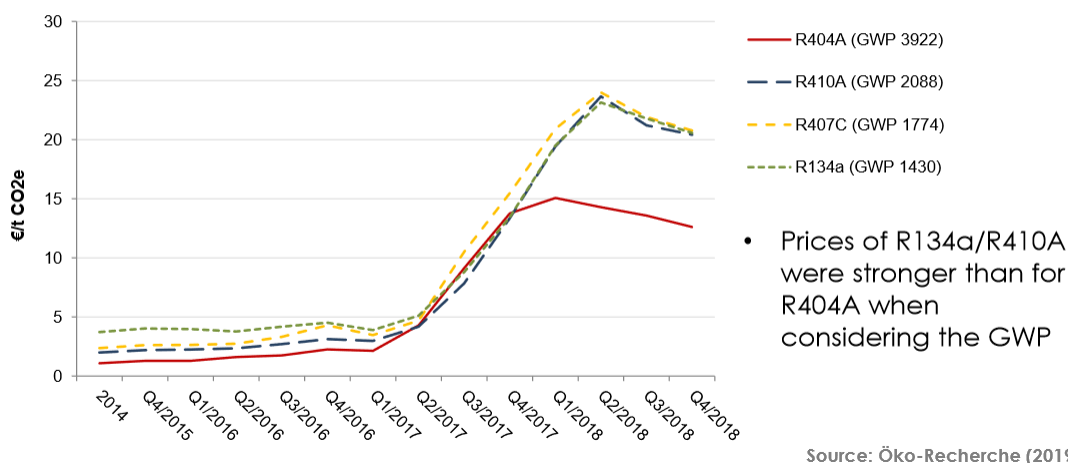
Gas prices in 2018 kept increasing strongly at the beginning of the year, followed by a significant drop in the last two quarters. Several different aspects might have caused such development:

- Residual quota quantities (mainly Q4)
- Stockpiling in previous years
- Increased care in handling refrigerants
- Move to lower GWP alternatives
- Illegal trade

According to information received from various sources, Q4/2018 was characterised by very low demand, leading to further price reductions. In addition, refrigerants were offered at reduced prices as many quota holders wanted to sell residual quota quantities before the end of the year to avoid a reduction in quota quantities in the next allocation period. Customers were said to be “very relaxed” as no problems regarding the availability of refrigerants could be observed.

Until the end of 2017, the phase-down- induced surcharges on HFC refrigerants moved very similarly for all observed gases and reached an average level of approximately 13 €/t CO₂e which can be interpreted as a quota surcharge. Starting 2018, the CO₂e-surcharge for high-GWP R404A (GWP 3922) stabilised, while the surcharges for the other key refrigerants (GWP 1430 – 2088) further increased until mid 2018 (up to 20 €/t CO₂e) and started declining slightly afterwards.

**Average purchase prices of various HFC refrigerants
(in €/t CO₂e)**

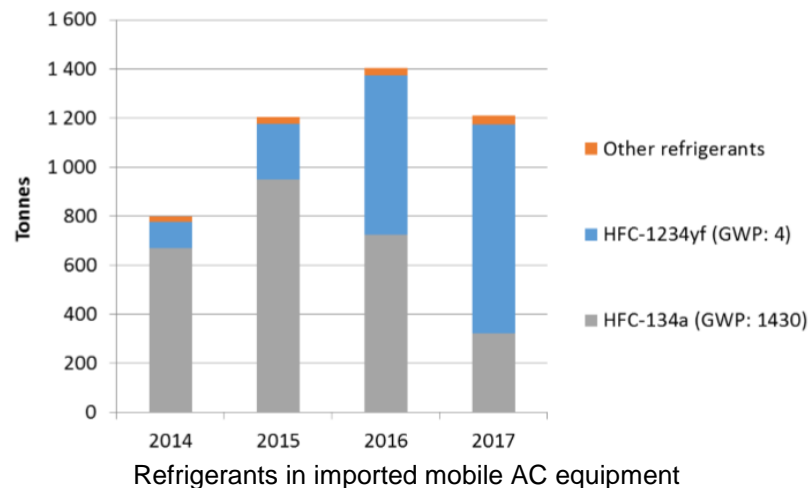
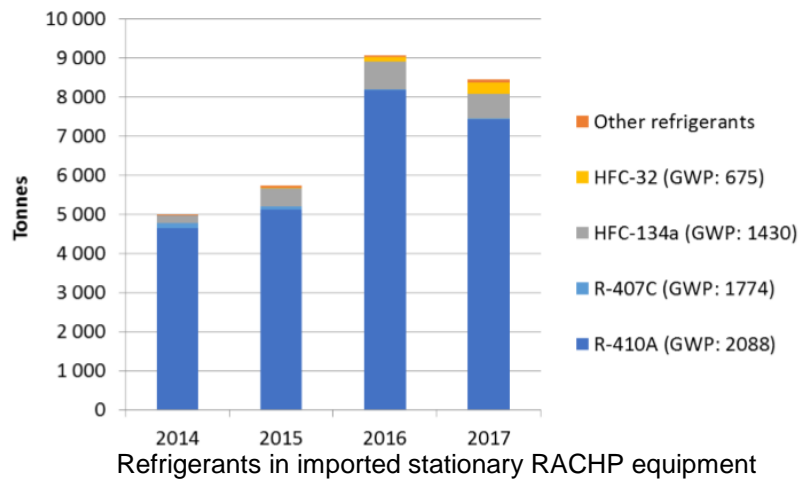


According to first indications, the trend of late 2018 seems to continue in Q1/2019, with a low demand and further price reductions of refrigerants and quota authorisations.

Nevertheless, prices are now still 5 to 10 times higher than they were in 2016.

The HFC phase-down is also reflected in the choice of refrigerants in imported RACHP equipment. HFC-32 with a moderate GWP of 675 is on the rise in stationary applications replacing R-410A with a higher GWP of 2088. For air conditioning system in imported

vehicles, low-GWP unsaturated HFC1234yf has reached a market share of about 70 % in 2017.



2. Promoting climate-friendly refrigerants through standards

Another part of the multipronged strategy to promote climate-friendly refrigerants is the Commission implementing decision requesting to draft a European standardisation deliverable with technical specifications for the use of flammable refrigerants¹, in particular those classified as A3, in refrigeration, air conditioning and heat pump equipment. The European standardisation deliverable should contain technical specifications for the installation and operation of refrigeration, air conditioning and heat pump equipment containing flammable refrigerants, complementing existing harmonised standards. The technical specifications shall provide for risk mitigation measures not yet addressed in existing standards for specific refrigerant classes, or not fully reflecting the state of the art, and establish complementary specifications for the installation of equipment in order to enable a wider use of flammable refrigerants without compromising safety. CEN/Cenelec have established a joint working group to fulfil this standardisation request, whose deliverables should be adopted by end of 2020. This process is independent, albeit related, with the standardisation activities ongoing at international level.

¹ <http://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=search.detail&id=578#>

3. Fighting illegal trade

An increased risk of illegal trade linked to the HFC phase-down was to some extent foreseen. Since the EU started limiting the supply of HFCs in 2015, HFC prices in the EU have been much higher than on the world market; this has proven to be the efficient driver for replacing HFCs with more climate friendly alternatives. In 2017 the European Commission analysed the extent of illegal trade during 2016 and found that illegal trade was insignificant at that time. However since then, HFC prices have increased further and there are signs that illegal trade has also picked up. Nevertheless, it has to be reminded that it is unlikely that trade in bottles and small refillable containers by private people would jeopardise the overall environmental goals, and no concrete evidence of large-scale trade (e.g. isocontainers) entering illegally the EU has been found.

Member States, which are principally responsible for the enforcement of the F-gas Regulation, are already taking some targeted measures to prevent illegal trade in HFCs. These include: regular checking of certain companies when their goods pass through customs, customs officer training, spot checks, meetings between the environment ministries and inspectorates and customs authorities, frequent website checks and requesting the closure of illegal websales. Furthermore, some Member States are planning to set up an expert group to exchange best practices for customs authorities and prepare a joint guidance document on implementation.

The European Commission is also taking and planning several measures, in particular:

- continue insisting on the importance of Member States' enforcement of the F-gas Regulation and facilitate the sharing of best practice in all F-gas Committee meetings;
- open EU infringement procedures if illegal trade is a major issue in a Member State and there are signs that the Member State is not making a sufficient effort;
- compare customs surveillance data and EU F-gas reporting data and request Member States to follow up on possible cases of illegal trade;
- continue providing guidance to customs authorities on how they can check registration and quota requirements;
- continue supporting the establishment of an expert group for customs authorities;
- continue building an IT system under the "EU Single Window environment for customs" initiative. This is expected to become operational in 2020 and will link the HFC Registry with the Single Window system and allow customs to get automatic alerts about potential illegal trade.

4. Conclusions

The EU policy on fluorinated gases is working well and delivering the expected results. The F-Gas Regulation is ambitious and ensures compliance with the Montreal Protocol as regards hydrofluorocarbons until 2030. Moreover, the Regulation is promoting innovation for climate-friendly technologies and the EU is having a first mover advantage. Since 2015 the 'new sale' of hydrofluorocarbons in the EU has been reduced by almost half in terms of the potential climate impact. The European Commission, in cooperation with Member States, is taking several actions to prevent and tackle the modest illegal trade.