

Mitigation of Fluorinated greenhouse gases across EU (Part II)

This article provides information about the production, reclamation, imports and exports of F-gases. According to the EEA report “Fluorinated greenhouse gases 2020”, from 2007 to 2014, the production of F-gases in Europe decreases successively, except in 2008 and 2009 when the financial crisis affected the whole market. As shown in Figure 1, the F-gases production increased slightly after 2014, but, the GWP of the produced gases (shown as a blue line in Figure 1) continued to decrease. In 2018, noticeable reduction in the volume of the F-gases production and their GWP values were observed. The production of F-gases decreased by 28%, while the GWP of the produced gases fell by 16%. In 2019, the F-gases production decreased slightly, but, the GWP of the produced gases increases significantly. The more complete reporting on the by-production of R23 with a very high GWP value of 14800, both amounts captured for destruction and amounts not captured can explain GWP increasing trend in 2019. Although the refrigerants such as R134a, R143a and R365mfc were subjected mainly by the production reduction after 2018, still HFCs were the main produced F-gases (more than 90% of total), with R134a and R365mfc as the largest parts.

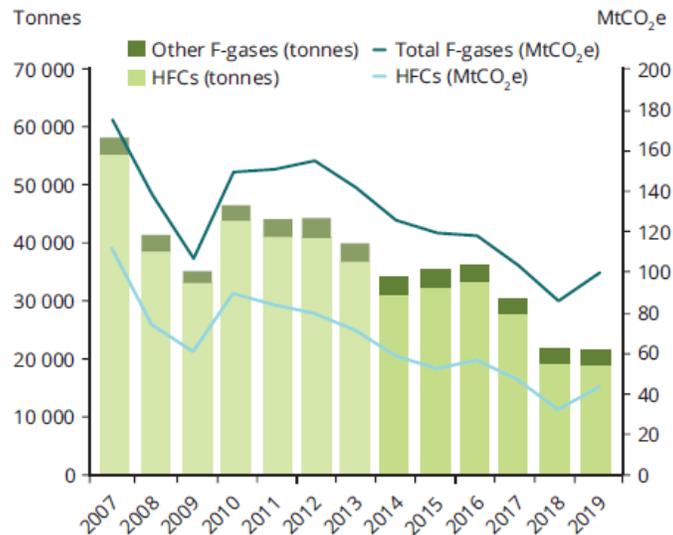


Figure 1. EU production of F-gases

To explain the reclamation of F-gases, it is important to define this term first. In this article, the term “reclamation” refers to the reprocessing of a recovered fluorinated greenhouse gases in order to match the equivalent performance of a virgin substance. In Figure 2, a fluctuation in the reclamation of F-gases is obvious. During 2014 to 2018 the reclamation of F-gases increased, but in 2019 it decreases by 20% compared to 2018. The reduction after in 2019 is due to the fact that one single gas importer stopped including their report data amount reclaimed by an independent sub-contractor.

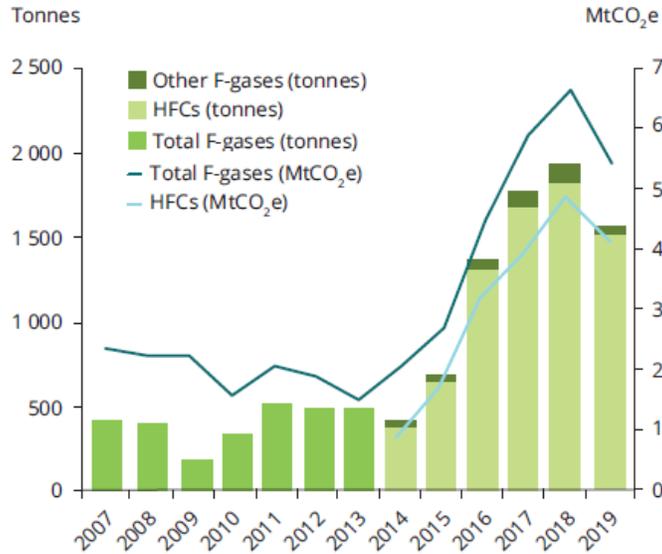


Figure 2. EU reclamation of F-gases

Figure 3 represents the EU imports of F-gases which includes both the bulk imports and the imports contained in equipment. The total F-gases imports decreased by 14% in 2019 compared to 2018, (reduced from 98223 to 84284 tonnes which is a result of 22% reduction in bulk imports. From 2018 to 2019, the imports of HFCs decreased by 19% and a reduction in the GWP of the imported F-gases is reported to be 19% as well. It is important to note that before the year 2014 the reported data included only the bulk imports, but after 2014 it included both the bulk imports and the equipment related imports.

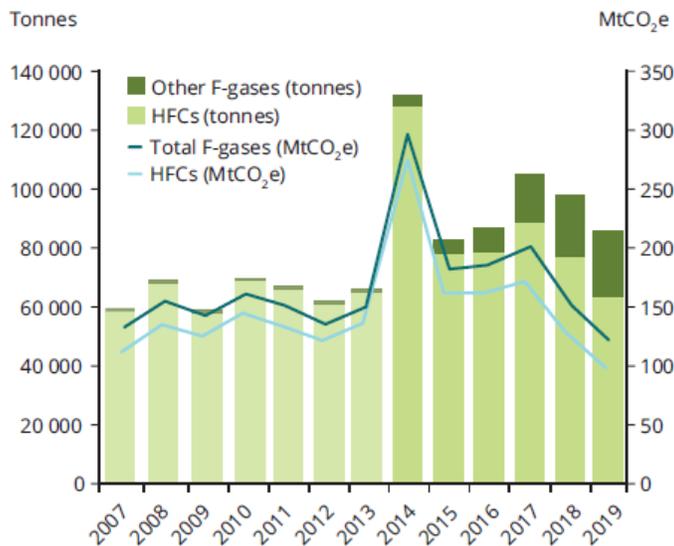


Figure 3. EU imports of F-gases

The bulk exports of F-gases from the EU-28 is presented in Figure 4. The export volume exhibits a fluctuation since 2007, but after 2017 it has a decreasing trend. A stepwise reduction by about 10% is reported annually from 2017 to 2019. The total F-gases exports in 2019 was 26033 tonnes which was equivalent to 86.1 million tonnes of CO₂. From 2018 to 2019 the exports of HFCs decreased by 14%, but the exports of gases such as SF₆ and unsaturated HFCs and HCFCs increased.

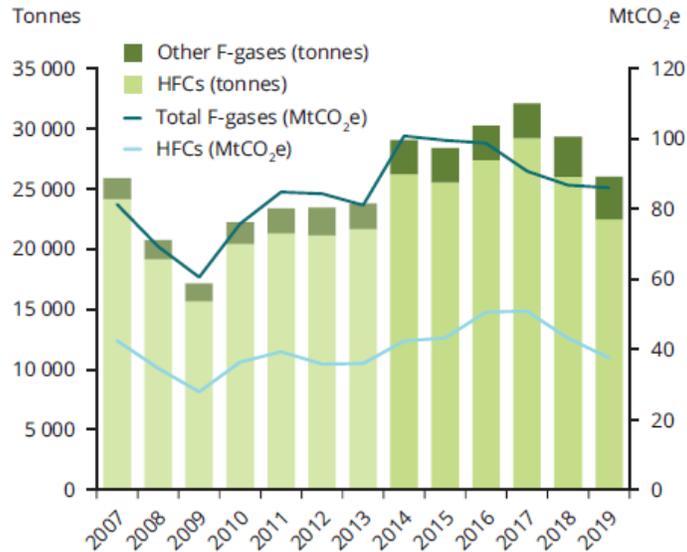


Figure 4. EU bulk exports of F-gases

In the next issues, details of the supply of fluorinated greenhouse gases to the EU will be presented.

Reference

European Environment Agency report “Fluorinated greenhouse gases 2020”, 2020