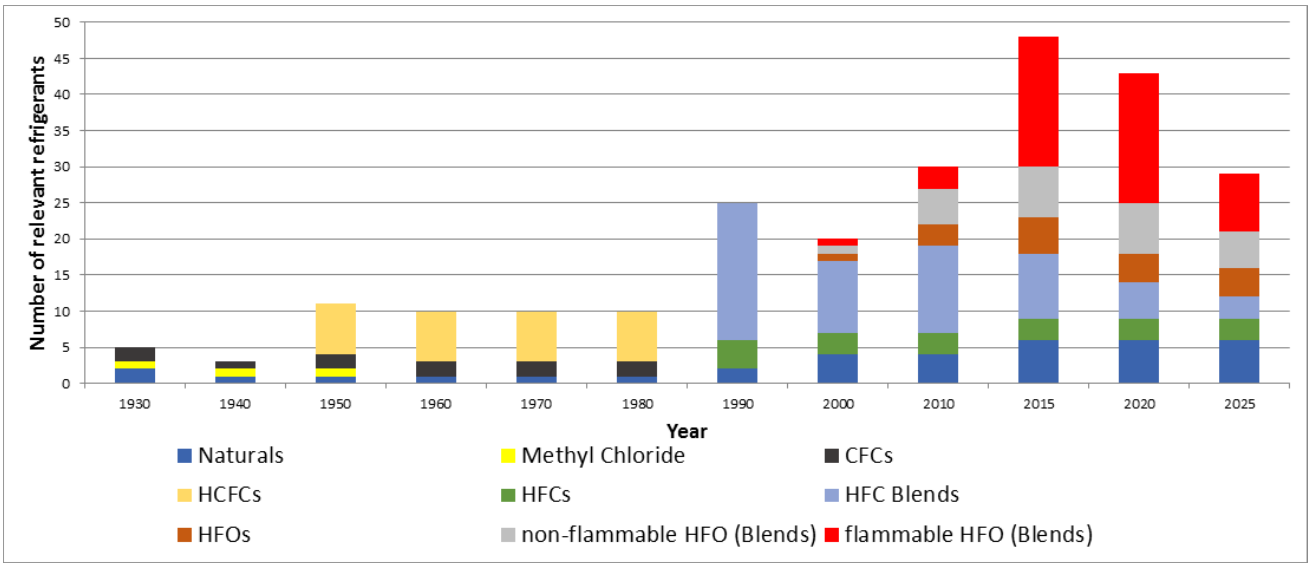
Statement from ASERCOM

This chart shows the number of refrigerants by category that were introduced and as well as phased out again.
The total number of since the beginning of the Montreal protocol is between 80 and 100, depending on the granularity of the analysis.
Long term speaking there might be still around 25-30 refrigerants surviving – including HFCs (for very low temperature, as pure refrigerant and within HFO blends).
In order to come to this lower number of refrigerants all industry is working actively on the evaluation and comparison as well as qualification to ensure efficiency for the different applications at the same time.



As can be seen the effort is enormous and through some international programs (AREP1 and AREP2) some initial weeding out of refrigerants was done, but much more work is required:

- Full analysis concerning Oil Miscibility, Bearing Analysis and Materials Compatibility for every new refrigerant
- Further increase of lab capacities for flammable refrigerants (for the EU market) while supporting existing developments with non-flammable refrigerants for the global market
- The magnitude of application envelopes (temperature ranges), cooling or heating capacity needed (sizes of compressors) and minimum efficiency requirements will not allow to be finished even before the next phase down step in 2021
- The equipment OEM then still needs to perform own lab and field tests to ensure the system efficiency and longevity.
- The update of the product standards for flammable refrigerants is slowly moving forward, so the acceptance of flammable refrigerants into the field is very slow for fear of liability in case of accidents.
- Reclamation capacity needs to be developed - retrofit of existing equipment is otherwise senseless.

Every introduction and campaigning of another new refrigerant – which quite often only differs in 1-2% point content mix - leads to more friction and time loss and to a lot of white noise and confusion in the market.

The phase down now works as foreseen and in the last 12 months the refrigerant prices started to increase dramatically. The availability of refrigerants is strongly reduced with the phase down step of 2018.

The communication to every market player or operator of HVACR equipment was lacking, but the lack of availability of refrigerants will finally wake up even the last actor in the chain.
The change in the market did not happen fast enough and is not reaching enough critical mass. The quantities of refrigerants needed these next few years will overshoot the available quota.

We will see the first operators or installers or smaller OEMs closing down because they will not be able to support their business with the adequate amount of refrigerants.

We have all dramatically underestimated the effort and invest needed behind all players to get to enough products ready for low GWP solutions while adhering to eco-design regulations.

It is really important to very closely monitor the whole market development – and we are glad that Oekorecherche is now checking for more parameters and we try to spread this information to as many market players as possible!

ASERCOM will discuss internally whether it is possible to provide an overview of the major compressor manufacturers compressor/refrigerant qualification status and give a firmer timeline of how far the industry is and what time frame to expect in order to move to really lower GWP solutions in the different applications.

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ASERCOM, the Association of European Component Manufacturers is the platform for dealing with scientific and technical topics and their challenges, promoting standards for performance rating, methods of testing and product safety, focusing on improved environmental protection, serving the refrigeration and air conditioning industry and its customers.

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