THE CHANGING REFRIGERANT LANDSCAPE OF THE 21ST CENTURY

2000

A new millennium but the end of the road for R-22 in new refrigeration and AC under the regulation (EC) 2037/2000. R-407C, R-410A and R-404A become the established replacements.

2004

All new equipment now banned for use with HCFCs. The HFC takeover is now complete for new equipment with carbon dioxide also making a comeback. R-22 retrofit market is booming with numerous options including the popular R-417A and R-422D

2006

In accordance with the Kyoto Protocol, F-Gas Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases came into force, stating that operators of stationary refrigeration or air conditioning systems must prevent leakage and refrigerant must be recovered.

2009

The ban on the use of virgin HCFCs for servicing/ topping up existing systems was coming into force. Large quantities of R-22 were still being used. Companies such as Climalife offering expert advice on the best retrofit options.

2014

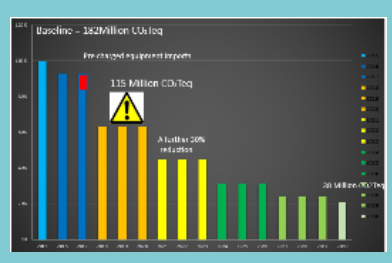
Complete ban on the use of R-22 at the end of 2014. F-Gas II (EU 517/2014) was published detailing new equipment and service bans as well as a phasedown in terms of carbon dioxide equivalents (TCO2e) placed on the market.

New lower GWP refrigerants such as R-449A, R-452A and R-513A were introduced to the market as replacements for the high GWP R-404A/R-507A and R-134a.

ASHRAE introduced the new A2L lower flammability safety class.

2015

HFC TCO2e phase-down begins. The baseline limit of 2015 was 182 Million TCO2e, which is equivalent to an average refrigerant GWP of ~2000 i.e. approximately half the GWP of R-404A and just below the GWP of R-410A.



2016

The global Kigali Amendment to the Montreal Protocol requiring a TCO2e phasedown of high GWP HFCs by more than 80 per cent over the next 30 years was agreed.

2018

Climalife launched the 2018 F-Gas Challenge. Its aim was to make sure there was enough refrigerant to meet demand after the first large F-Gas phase down step.

R-404A was the refrigerant under the most pressure (with GWP 3922) and prices escalating fast over the 12 prior months. Take up of R-404A alternative refrigerants, such as R-448A and R-449A (GWP values 1/3 that of R-404A), grew significantly towards the end of 2018.

Very low GWP R-1234yf was now established for auto AC in new cars and at Chillventa, A2L very low GWP alternatives for R-404A and R-410A were launched.

2020

A year of change and new challenges.

The European F-Gas legislation banned the use of virgin refrigerants with a GWP of 2500 or more in stationary refrigeration applications for new equipment and servicing. Reclaimed and recycled product is exempt from the ban and can continue to be used until 2030, if available. Throughout the pandemic a full range of lower GWP alternatives and support are available from Climalife including the very low GWP A2L refrigerants.

2021

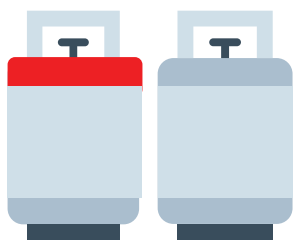
At Chillventa event many manufacturers launched their ranges of A2L ready equipment.

The here and now.

No longer part of the EU, the UK adopts its own version of F-Gas mirroring its EU equivalent. The UK now has its own quota system which does have implications for trading between the UK and Ireland and on pre-charged equipment coming into the UK.

In the short term, keeping within limits of the quota by retrofitting systems to some of the lower GWP solutions may be an option for some however, it won't be long until everyone has to take the longer term view and use equipment and refrigerants that will enable us all to achieve the F-Gas phase down targets.

It is just nine years until 21% of the 2015 baseline refrigerant quota will be all that is allowed to be placed on the market. These targets won't be so tough if we action them sooner keeping the control in our court and not driven by a last minute need to change.



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