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R22 phase-out

ASERCOM members have discussed the R22 phase-out in the past and have reviewed their assessment to integrate developments in the industry and in the legal base:

The regulation EU2037/2000 prohibits the use of both Virgin and Recycled HCFCs since 31st of December 2014 (complete ban in EU). The complete phase-out of HCFCs leads to three scenarios:

- Maintenance of Service: Prohibited
- Retrofit: an active adaptation of the plant to the new R22 substitute considering the F-Gas restrictions on GWP (global warming potential) refrigerants, e.g. overhauling of the complete refrigeration system. Important: R22 cannot be recovered and it must be discarded as hazardous waste
- New installation by means of a refrigerant with a low impact to the environment like Ammonia, CO₂ or Hydrocarbons

Whereas commercial plants may work with a drop-in refrigerant, the choice of scenario for the large variety of industrial plants will lead to mainly individual solutions depending on various considerations:

- Technical: Complexity of the plant, type of compressor, type of evaporation, capacity, oil management, sealing, pressure levels and pressure drop, controls
- Commercial: Remaining life time, operational cost, installation cost, down time and availability of refrigerants
- Safety and Environmental: Safety standards, national regulations, toxicity, combustibility, GWP, ODP, TEWI
- Legislative: PED category, approvals, documentation and phase-down/availability of refrigerants with high GWP according to F-Gas regulation

Above mentioned factors are not complete, but just some of the main requirements.

A thorough and often complex analysis of the properties of the new refrigerant, with respect to the requirements of the plant, will be necessary to avoid unexpected problems, when drop-in or retrofit is considered. In this case, the contact to the compressor manufacturer is strongly recommended too.

ASERCOM is convinced that a new installation will be the preferable solution, to avoid efficiency, performance, serviceability and reliability issues

These recommendations are addressed to professionals, industrial, commercial and domestic refrigeration system manufacturers / installers. They have been drafted on the basis of what ASERCOM believes to be the state of scientific and technical knowledge at the time of drafting, however, ASERCOM and its member companies cannot accept any responsibility for and, in particular, cannot assume any reliability with respect to any measures - acts or omissions - taken on the basis of these recommendations.
