

# Industry insight.

EU f-gas regulation summary.



The revised f-gas regulation 517/2014 has recently been published and will become law on 1 January 2015.

It will impact the use of fluorinated gases such as HFCs, PFCs and SF<sub>6</sub> in a range of applications including refrigeration, air conditioning, electrical switchgear, foams and aerosols.

Linde explores the impact of the new regulation and provides direction on how these will change our industry.

The updated f-gas regulation should provide a practical and achievable solution to the challenge of minimising the environmental impact of f-gases in a technically and commercially viable manner.

The revision will strongly impact the use of gases with a high Global Warming Potential (GWP), especially those with a GWP exceeding 2500. The quantity of HFCs available for use is being phased down and regulatory controls mandate that they be used in a responsible way and handled only by trained engineers. All of this takes us towards a much greener refrigeration industry.

With the regulation now published, we all have a much clearer view of the changes that lie ahead. As an industry, we need to work together to manage those changes and comply with the new legislation.

### Focus on Responsible Supply

One of the key changes under the revised f-gas regulation – and one that has gone un-noticed by many – is the duty to ensure that f-gases are supplied in a responsible manner.

The previous f-gas regulation mandated that only trained individuals and/or certified businesses were authorised to use f-gases. The new regulation increases the responsibility on distributors to ensure that f-gases used in certain applications are only sold to people or businesses that hold relevant certification or who have attended accredited training programmes.

As an industry, we need an efficient and unified way of checking compliance without causing unnecessary delays in the supply chain or compromising customer service.

On the user side, it is therefore critically important for companies to ensure that their business and employees have the correct knowledge, training and certification to ensure that they are entitled to purchase and use these gases.

### Changing Gas Requirements

Another key factor under the new legislation is the combination of phase-down and service bans.

The revised regulation will reduce the supply of f-gases via a cap and phase-down approach. The phase-down will be managed on a CO<sub>2</sub> equivalent basis, reducing supply to 21% of the 2009-2013 baseline by 2030.

Gases with a high GWP will require a substantial quota allocation. (A distributor can sell one tonne of R404A or three tonnes of R134a for the same quota allocation, for instance.) This change will also drive the industry towards gases with a lower GWP.

The service and maintenance ban will end the use of virgin HFCs with a GWP of 2500 and above in existing refrigeration equipment from 2020. This is similar to the service ban on HCFCs such as R22 that came into effect in 2010. Refrigeration systems using gases such as R404A, R507 and R422D (ISCEON<sup>®</sup> M029) will all be impacted by these bans.



## Alternative Options

On the upside, however, we have time to adjust to these changes. And of course there are many solutions and alternatives on offer today. A number of replacement gases for R404A are already widely available – for example R407A, R407F (Performax™ LT) and R442A (RS-50). These gases can be used as “drop-in” replacements for R404A in existing equipment with minimal system changes. These alternatives are also suitable for use with new equipment designed for R404A.

R422D has been the most popular R22 retrofit gas. However, alternatives such as R438A (ISCEON® MO99), R427A (Forane® 427A) and R424A (RS-44) provide an alternative to R422D – with the added bonus of lower GWP.

As R22 equipment is already relatively old, the 2020 service and maintenance ban may actually provide a window of opportunity. It could be a good time for users to invest in new refrigeration equipment that combines improved energy efficiency with low-GWP refrigerants such as natural refrigerants and HFOs. These new gases will become an increasingly large part of our product portfolio over the coming years, and it is important that the industry knows how to source, store and use these products.

## Reclaiming and Re-using

Finally, the combination of phase-down and service and maintenance bans will lead to increased demand for reclaimed refrigerant gases. Notably, users will be able to continue to use reclaimed refrigerants with GWP in excess of 2500 in existing refrigeration equipment until 2030. Reclaimed gas is also exempted from phase-down restrictions.

The regulation limiting the use of ozone-depleting substances focused heavily on the possibility of using reclaimed materials (e.g. R22R), and this latest round of legislation builds on this concept. Correct end-of-life management (via recovery and then destruction or reclamation) can avoid the release of harmful substances to the atmosphere. Refrigerant reclamation also minimises the energy and natural resources required to create new gas. Reclaimed refrigerants are set to play a critical role in the future of this industry.

Providing a full range of recovery packages plus facilities for supplying reclaimed refrigerants back to the market is a critical part of any distributor's offer. Linde is no exception here – recovery and reclamation is a fundamental building block in our total solution for customers who require f-gases.

## Looking to the Future

The new f-gas regulation is going to drive substantial change in our industry – quite possibly the biggest transition that the industry has ever gone through. It will continue to increase our industry's focus on environmental responsibility and will have a major impact on both refrigeration and air conditioning equipment and the range of refrigerant gases used in such equipment. Accompanying and enabling this change, refrigerant distributors such as Linde are working tirelessly to meet your needs for reliable, effective refrigerants that satisfy the requirements of both industry and legislators.

For more insight on the EU f-gas regulation, how it impacts you, and how Linde can help you manage these changes go to [www.linde-gas.com/fgas](http://www.linde-gas.com/fgas).

# Getting ahead through innovation.

With its innovative concepts, Linde is playing a pioneering role in the global market. As a technology leader, it is our task to constantly raise the bar. Traditionally driven by entrepreneurship, we are working steadily on new high-quality products and innovative processes.

Linde offers more. We create added value, clearly discernible competitive advantages, and greater profitability. Each concept is tailored specifically to meet our customers' requirements – offering standardised as well as customised solutions. This applies to all industries and all companies regardless of their size.

If you want to keep pace with tomorrow's competition, you need a partner by your side for whom top quality, process optimisation, and enhanced productivity are part of daily business. However, we define partnership not merely as being there for you but being with you. After all, joint activities form the core of commercial success.

Linde – Ideas become solutions.



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