Linde support.

Linde can support you through this transition. We offer the reliable supply of a wide range of refrigerant gases including many lower GWP refrigerant gases as detailed in this leaflet. Linde also provides extensive technical & legislation support as well as a varied range of services including refrigerant recovery and reclamation.

Any questions?

For further information or queries on the f-gas regulation and how Linde can help meet your environmental and legislative challenges, please contact your local Linde supplier.

Linde Gas

www.linde-gas.dk, www.linde-gas.ee, www.linde-gas.fi , www.linde-gas.is, www.linde-gas.lt, www.linde-gas.lv, www.linde-gas.no, www.linde-gas.se

Making our world more productive

HFC cap and phase down.

EU f-gas regulation.

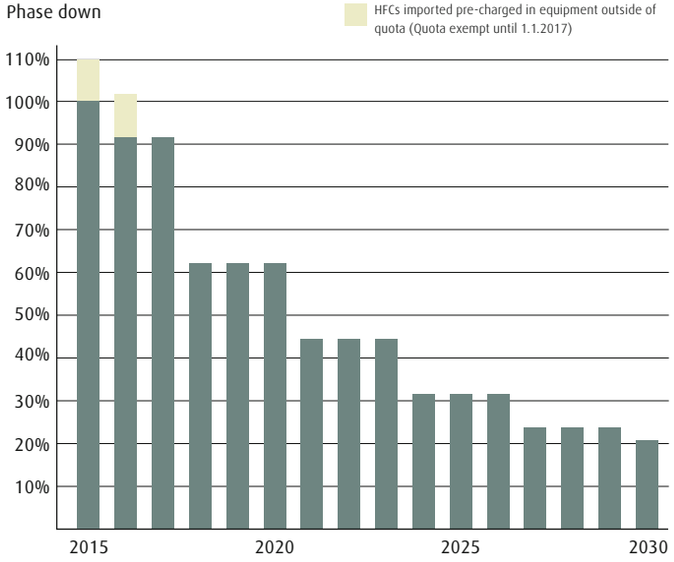
Cap and phase down – legislation summary.

Starting on 1.1.2015, the cap and phase down will limit the total supply of HFCs across the EU based on total tonnes CO_2 equivalent (CO_2e)*.

By 2018, the supply of bulk HFCs will have already been reduced to 63% of the 2009–2012 average. By 2030, the supply will have reduced further to 21% of the 2009–2012 baseline.

Additionally, from 2017, it will also include the supply of equipment containing HFCs. This sector was not included in the original 2009–2012 "baseline" calculation, and as such effectively reduces supply by a further 10%.

HFC phase down schedule (CO_2e basis, in %)



100% = Average of 2009–2012

Implications and options.

Implications: potential shortages and price rises

The cap and phase down does not ban the sale of any particular HFC. Instead, starting in 2015, it will limit the total supply of all HFCs across the EU based on the total tonnes CO_2 equivalent (CO_2e).

Some of the supply reduction will be met by industry changes driven by other parts of the regulation (e.g. lower leakage, service and maintenance and equipment and product bans). However it is likely that these bans alone will not be enough.

Therefore there is a real risk of refrigerant supply shortages and associated cost increases unless industry proactively moves to lower its f-gas CO_2e demand.

Options: lowering CO_2e demand

Users of f-gas equipment can lower their CO_2e demand by using less virgin gas, or using gases with lower GWP.

Use less virgin gas

→ Follow correct maintenance procedures, including leak checks, and use of leak detection systems and refrigerant recovery

→ Use reclaimed or recycled gas.

Use lower GWP gas

→ Convert existing equipment to use a lower GWP retrofit gas

→ Replace with a new installation that uses as lower GWP gas (e.g. HFO or Natural Refrigerant)

*CO_2e is the entire weight of each gas multiplied by its respective GWP

Solutions: potential alternative gases.

Lower GWP refrigerant gases

Gas	Other names	GWP	Replacement for
R717	Ammonia	0	R134a
R744	Carbon Dioxide	1	R134a, R404A
R1270	Propene	2	R404A, R22, R404A, R410A
R290	Propane	3	R410A, R22, R404A, R410A
R600a	Isobutane	3	R134a
R1234yf	Opteon® YF Solstice™ yf	4	R134a
R1234ze	Solstice™ ze	7	R134a
R513A	Opteon® XP10	631	R134a
R32		675	R410A
R449A	Opteon® XP40	1397	R404A
R407C		1774	R22
R407F	Performax™ LT	1825	R404A (R507, R22)
R410A		2088	R22
R407A		2107	R404A (R507, R22)
R427A	Forane® 427A	2138	R22, R422D
R452A	Opteon® XP44	2141	R404A
R438A	ISCEON® MO99	2265	R22, R422D
R417A	ISCEON® MO59	2346	R22

Opteon® XP10 will be also known as R513A and XP44 – R452A pending final approval.