

The New EU F-Gas Rules

Introduction
Challenges for the European HVAC&R
Industry Sector
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Introduction

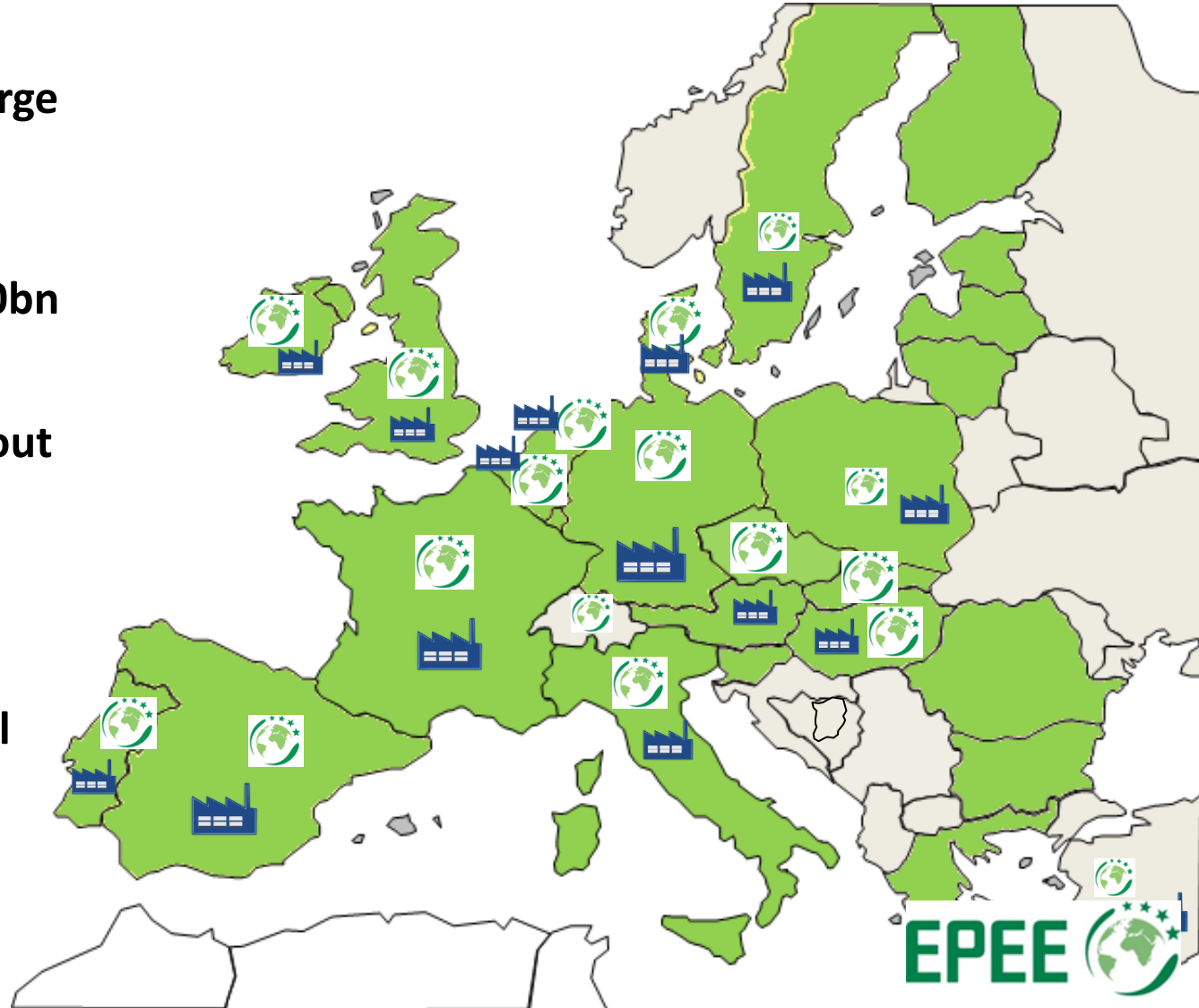
EPEE

The Voice of the European Cooling,
Refrigeration and Heat Pump Industry



EPEE: the voice of the heating, cooling and refrigeration industry in Europe

1. Small – medium – large size enterprises
2. Over 200,000 direct employees, over €30bn turnover
3. Production throughout Europe
4. Using all types of refrigerants
5. Representing the full value chain of the heating, cooling and refrigeration sector



EPEE's main fields of activity



Promote Energy Efficiency

- 2030 targets
- Ecodesign & Energy label Directives
- Eco Label Directive
- EPBD - Energy Performance of Buildings Directive
- RES - Renewable Energies Directive
- Energy Efficiency Directive



Promote sustainable management of refrigerants

- Make the new F-Gas rules work
- Support EU Commission and Member States in implementing the new rules
- Support global action to reduce consumption of HFCs



Raise awareness on Market Surveillance

- Importance of properly enforcing and policing legislation



Promote an HVACR association network at EU level

The New EU F-Gas Rules

The International Context
Main Pillars of the New Rules



EU Legislation on Refrigerants in the international Context

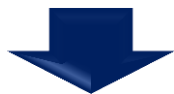
Montreal
Protocol
UNEP



EU 2037/2000
Regulation on Ozone-
Depleting Substances



EU 1005/2009
Revised Regulation on
Ozone-Depleting Substances



Kyoto Protocol
UNFCCC



EU 814/2006
F-Gas Regulation



EU 517/2014
Revised F-Gas Regulation



EU 20-20-20 Targets
EU 2050 Low Carbon Roadmap



The Main Pillars of the new EU F-Gas rules

2050 Low Carbon Roadmap

Containment & Competence

Regular leak checks

Certification and training of installers

Phase-Down

Consumption Reduction of HFCs

Y 2020:
-37%

Y 2030:
-79%

GWP Limits

2015: GWP 150
Domestic Refrigerators & Freezers

2020: GWP 150
Moveable A/C

2020: GWP 2500
New stationary Refrigeration Equipment

2022: GWP 150
Multipack refrigeration systems >40kW (except cascades: GWP1500)

2025: GWP 750
Single split a/c < 3kg

Others

2017:
Traceability systems for pre-charged equipment

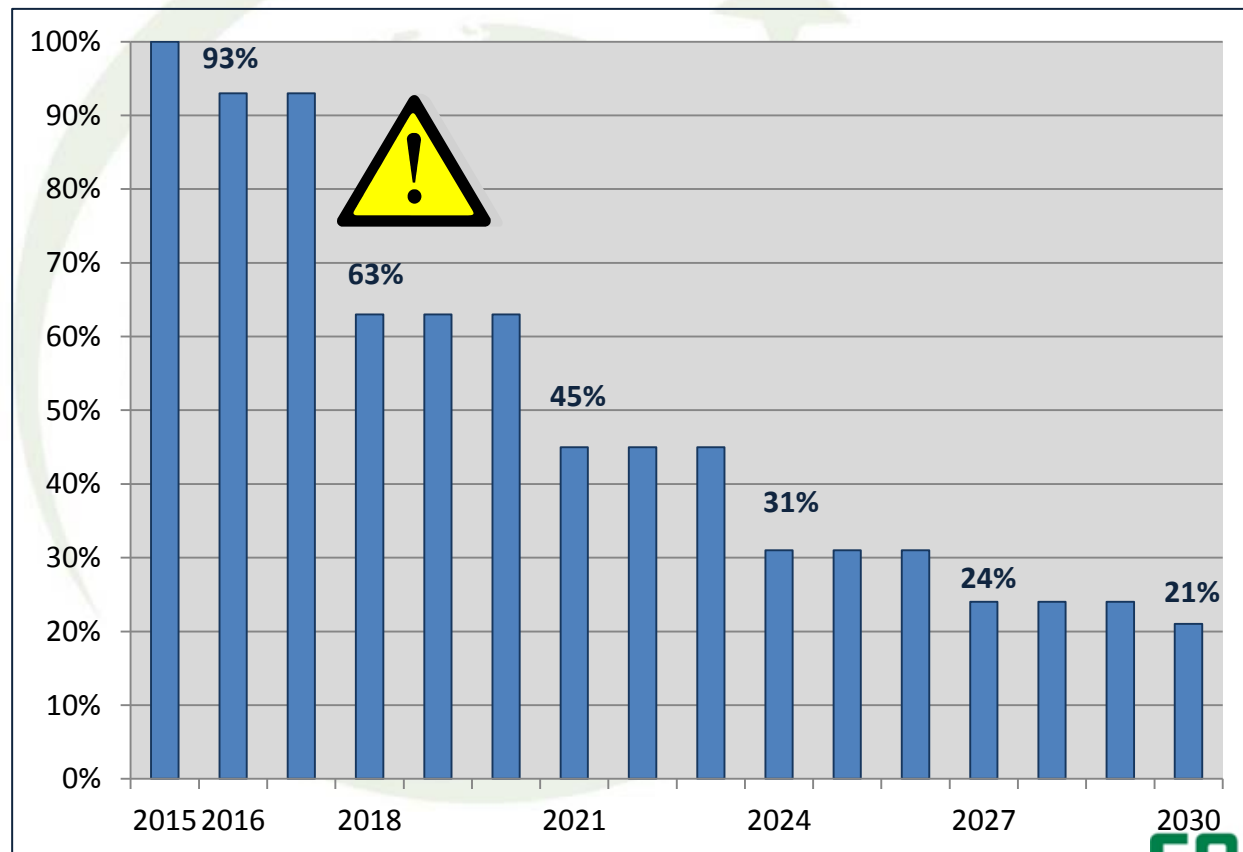
2020:
GWP 2500 for service & maintenance

The phase-down schedule

3 main principles:

1. Only HFCs covered by quota can be placed on the EU market
2. Only bulk HFC producers or importers can apply for quota (quota “holders”)
3. Manufacturers of equipment cannot apply for quota (quota “users”)

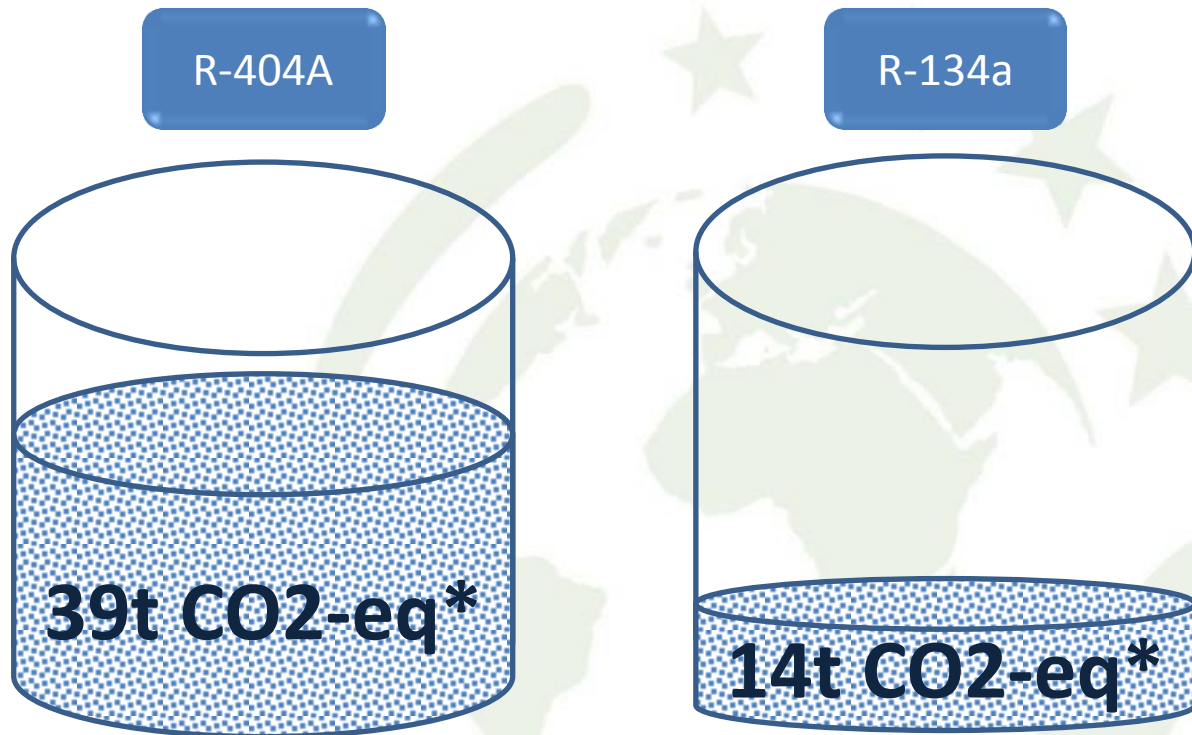
Year	Reduction by
2015	100% (Freeze)
2016-17	93%
2018-20	63%
2021-23	45%
2024-26	31%
2027-29	24%
2030	21%



Challenges for the European HVAC&R Industry Sector



Understanding the principle: CO2-equivalents



CO₂-eq reduction:

- Reduce GWP
- Reduce charge
- Containment
- Recovery



10 kg



GWP 3922



10 kg



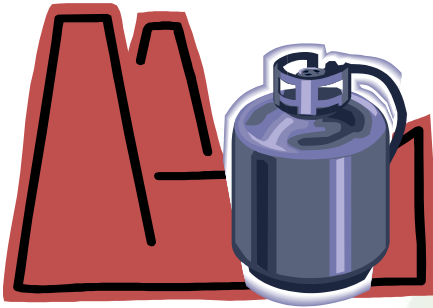
GWP 1430

*kg x GWP



European Partnership for Energy and the Environment

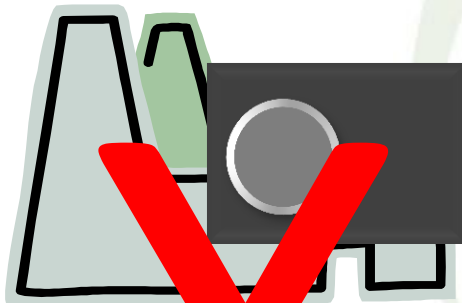
The Phase-Down: Who can apply for quota?



Can apply for quota:

Bulk HFC producers or importers

Bulk = HFCs not contained in equipment



Can **NOT** apply for quota

Pre-charged equipment manufacturers

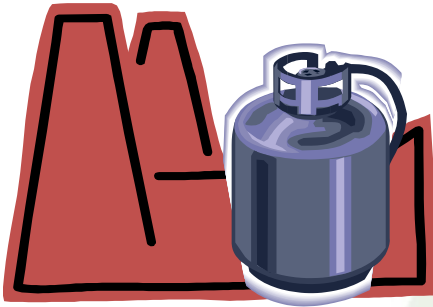


Can **NOT** apply for quota

EU Importers of pre-charged equipment

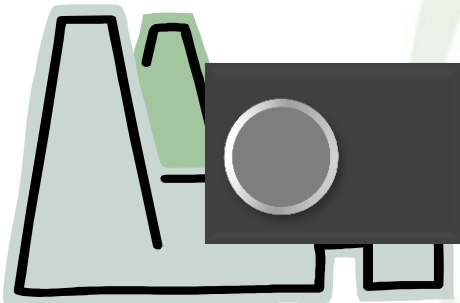
The Phase-Down:

All HFCs placed on the EU market must be covered by quota



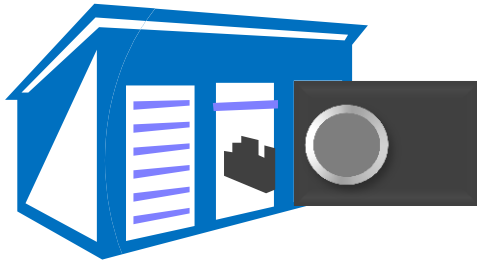
Bulk HFC producers or importers

- Need to apply for quota
- Quota will be allocated by the EU Commission based on historic reference values & pro rata allocation mechanism for companies without historic values



Pre-charged equipment manufacturers (e.g. split a/c)

- Continue to source their HFCs as usual
- Establish Declaration of Conformity (DOC) for HFCs



EU Importers of pre-charged equipment

- Need authorization to use EU quota for HFCs contained in imported pre-charged equipment
- Establish Declaration of Conformity (DOC) for HFCs
- DOC to be verified by independent auditor

Impact on refrigerant producers and equipment manufacturers

- **Refrigerant producers** are developing lower GWP refrigerants to support and enable the phase-down:
 - Many alternatives exist already
 - Refrigerant properties such as flammability, high pressure, toxicity require adaptation and education of the market (users, installers, manufacturers)
- **Equipment manufacturers** are switching to lower GWP refrigerants where ever possible
 - Investments into R&D are required to develop safe, energy efficient and economically viable products
 - Some sectors can move more quickly than others
 - Early action pays off as higher GWP HFCs will be the first to be impacted by the phase-down

Key first target: Refrigeration applications

2015: ban of HFCs with GWP > 150

- Domestic refrigerators and freezers

2020: ban of HFCs with GWP > 2500:

- **New refrigeration** equipment
 - Hermetically sealed refrigerators and freezers for commercial use
 - All stationary refrigeration equipment, except for temperatures < -50°C
- **Existing refrigeration** equipment (service & maintenance)
 - Except small equipment (<40t of CO₂-eq), military applications, temp. < -50°C
 - Recycled/reclaimed HFCs > GWP 2500 can still be used until 2030

2022: ban of HFCs with GWP > 150:

- **New refrigeration** equipment
 - Hermetically sealed refrigerators and freezers for commercial use
 - Large commercial refrigeration equipment (>40kW), except certain cascade types



More Challenges:

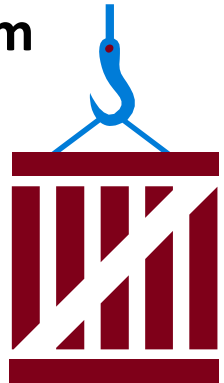
More leak checking for high GWP HFCs

- ⚠ **New Threshold for leak checks: 5t of CO₂-eq**
 - Installations which were previously below the 3kg threshold may now need to be leak checked
 - Example: Installations with 1.2 kg of R-404A
 - Leak checks may now need to be done more often
 - Example: Installations with 12kg to 127kg of R-404A now need checking every 6 months whilst previously this frequency applied to 300kg and above
- ⚠ **New Threshold for leakage detection systems: 500t of CO₂-eq**
 - Leakage detection systems may now be necessary for installations which did not require any previously
 - Example: 127kg of R-404A, whilst previous threshold was 300kg
- ⚠ **Labels – as of 2017 – also need to indicate CO₂-eq**



What happens to export?

1. **Bulk HFCs for export out of the EU are exempted from the phase-down to ensure a global level playing field**
2. **Precharged equipment for export must also be exempted from the phase-down:**
 - To ensure a level playing field between EU and non-EU manufacturers and to support EU competitiveness
 - On average 30% of EU production is intended for export
 - The F-Gas Regulation is tailored for the EU market. Global action needs to be addressed in global fora, e.g. Montreal Protocol
 - Via the definition of „undertaking“, the new F-Gas rules stipulate that bulk and precharged equipment for export are exempted from the phase-down



Conclusions

1. The phase-down is the **major new pillar** of the legislation and is the most important legal instrument that **requires a move towards lower GWP refrigerants**
 2. The GWP limits will set signposts to steer the phase-down
 - The bans of refrigerants with a GWP of 2500 and above will free up quota for other applications such as air-conditioning.
 3. Refrigerants with a high GWP such as R-404A and R-507 will be the first ones to be impacted
- **Industry needs to act now to avoid shortages;**
 - **Many solutions exist to transition to safe, energy-efficient refrigerants with a lower GWP – but not yet for all applications. Time & investment in R&D is key.**
 - **Making the rules work is a key challenge and priority for EPEE!**

Thank you for your attention!



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